

In the Matter of

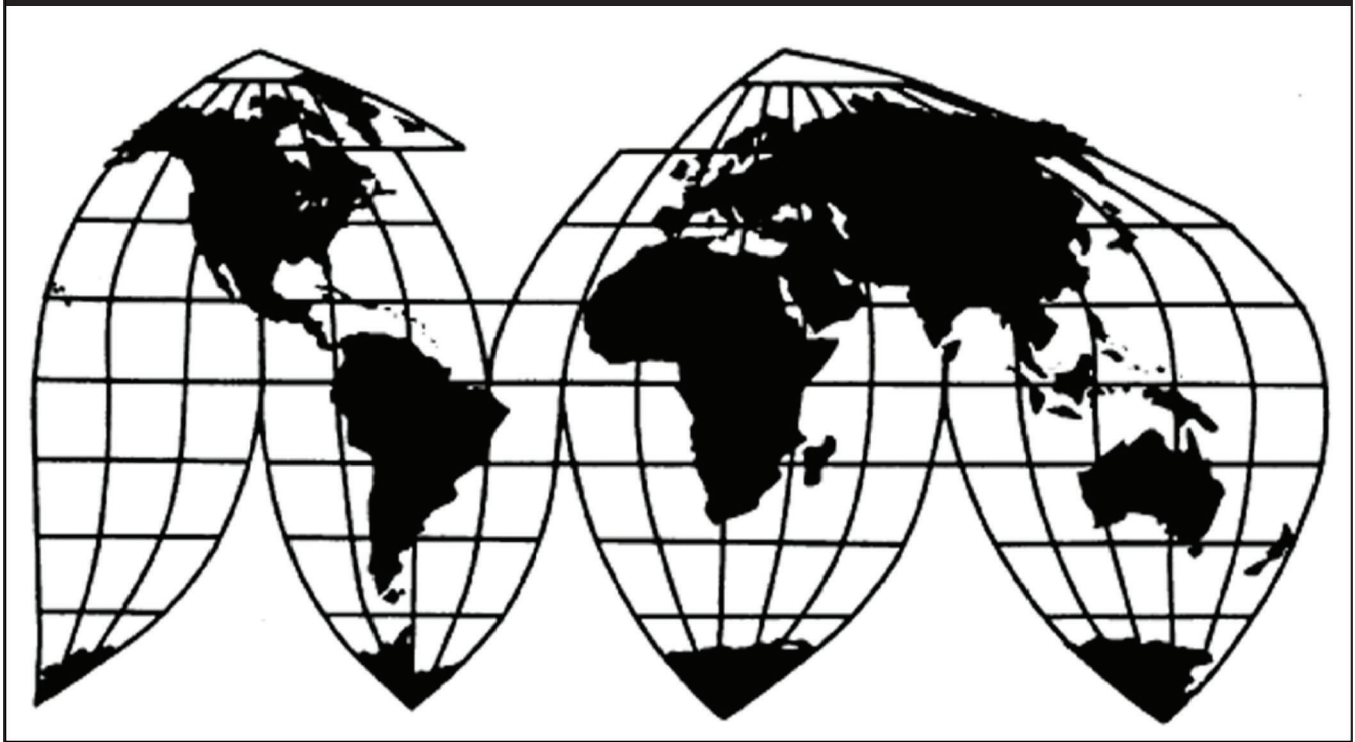
**CERTAIN TWO-WAY RADIO EQUIPMENT
AND SYSTEMS, RELATED SOFTWARE
AND COMPONENTS THEREOF**

Investigation No. 337-TA-1053

Publication 4969

September 2019

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

COMMISSIONERS

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Jason Kearns, Commissioner

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United States International Trade Commission
Washington, DC 20436**

U.S. International Trade Commission

Washington, DC 20436
www.usitc.gov

In the Matter of

CERTAIN TWO-WAY RADIO EQUIPMENT AND SYSTEMS, RELATED SOFTWARE AND COMPONENTS THEREOF

Investigation No. 337-TA-1053



UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN TWO-WAY RADIO
EQUIPMENT AND SYSTEMS,
RELATED SOFTWARE AND
COMPONENTS THEREOF**

Investigation No. 337-TA-1053

**NOTICE OF A COMMISSION DECISION TO AFFIRM-IN-PART, MODIFY-IN-PART,
REVERSE-IN-PART, AND STRIKE CERTAIN PORTIONS OF A FINAL INITIAL
DETERMINATION FINDING A VIOLATION OF SECTION 337; ISSUANCE OF
LIMITED EXCLUSION ORDER AND CEASE AND DESIST ORDERS; AND
TERMINATION OF THE INVESTIGATION**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined to affirm-in-part, modify-in-part, reverse-in-part, and strike certain portions of a final initial determination (“ID”) of the presiding administrative law judge (“ALJ”). Accordingly, the Commission has determined that a violation of section 337 has occurred in the above-captioned investigation, and has issued a limited exclusion order directed against infringing two-way radio products and cease and desist orders directed against two domestic respondents found in violation. The Commission has terminated the investigation.

FOR FURTHER INFORMATION CONTACT: Clint Gerdine, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, SW., Washington, D.C. 20436, telephone (202) 708-2310. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, SW., Washington, D.C. 20436, telephone (202) 205-2000. General information concerning the Commission may also be obtained by accessing its Internet server at <https://www.usitc.gov>. The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at <https://edis.usitc.gov>. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205-1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on May 3, 2017, based on a complaint filed on behalf of Motorola Solutions, Inc. (“Motorola”) of Chicago, Illinois. 82 *Fed. Reg.* 20635-36. The complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337, by reason of infringement of certain claims of U.S. Patent Nos.: 8,116,284 (“the ’284 patent”); 7,369,869 (“the ’869 patent”); 7,729,701 (“the ’701 patent”); 8,279,991 (“the ’991 patent”); 9,099,972 (“the ’972 patent”); 8,032,169 (“the ’169 patent”); and 6,591,111 (“the ’111 patent”). The Commission’s Notice of Investigation named as respondents Hytera Communications Corp. Ltd. of Shenzhen, China; Hytera America, Inc. (“Hytera America”) of Miramar, Florida; and Hytera Communications America (West), Inc. (“Hytera Communications America”) of Irvine, California (collectively, “Hytera”). The Office of Unfair Import Investigations is not participating in the investigation. *Id.*

On September 18, 2017, the Commission issued notice of its determination not to review an ID (Order No. 10) terminating the investigation as to: (1) claims 2, 5, 10, and 16 of the ’284 patent; (2) claims 2-3, 8, 12, 14-15, 20, 22-24, and 30 of the ’169 patent; (3) claims 5, 8, 11-14, 18, and 22 of the ’869 patent; (4) claims 3, 5, 8-10, 15, and 17-18 of the ’701 patent; (5) claim 3 of the ’972 patent; and (6) claims 3-5, 8-10, and 14 of the ’111 patent. On October 17, 2017, the Commission issued notice of its determination not to review an ID (Order No. 16) terminating the investigation as to claim 10 of the ’869 patent. On November 14, 2017, the Commission issued notice of its determination not to review an ID (Order No. 19) terminating the investigation as to: (1) claims 1, 4, 12, and 18 of the ’284 patent; (2) claims 4, 13, 16, and 25 of the ’169 patent; (3) claims 3-4, 9, 19-20, and 23-24 of the ’869 patent; (4) claims 2, 4, and 14 of the ’701 patent; (5) claims 4 and 8 of the ’972 patent; (6) claims 6 and 12 of the ’111 patent; and (7) claim 19 of the ’991 patent for the purposes of satisfying the technical prong of the domestic industry requirement.

On December 4, 2017, the Commission issued notice of its determination not to review an ID (Order No. 21) terminating the investigation as to claims 5 and 18 of the ’169 patent. On January 3, 2018, the Commission issued notice of its determination not to review an ID (Order No. 23) terminating the investigation as to: (1) the ’111 and ’169 patents; (2) claims 2 and 7 of the ’869 patent; and (3) claims 7-8 and 19 of the ’284 patent. On the same date, the Commission issued notice of its determination not to review an ID (Order No. 24) terminating the investigation as to claim 1 of the ’701 patent. On February 6, 2018, the Commission issued notice of its determination not to review an ID (Order No. 31) terminating the investigation as to the following patent claims: (1) claim 13 of the ’701 patent; (2) claim 6 of the ’284 patent; and (3) claim 1 of the ’972 patent. On February 26, 2018, the Commission issued notice of its determination not to review an ID (Order No. 40) terminating the investigation as to the ’972 patent.

On January 26, 2018, the ALJ issued Order No. 38 which granted Motorola’s motion *in limine* to preclude Hytera’s licensing defense. On May 18, 2018, the ALJ issued Order No. 47, which granted-in-part Motorola’s motion to strike certain portions of Hytera’s expert testimony

at the evidentiary hearing. On July 3, 2018, the ALJ issued her final ID and recommended determination (“RD”) on remedy and bonding in one document. The ID finds that Hytera’s accused products infringe claims 1, 6, 17, and 21 of the ’869 patent; claims 1 and 11 of the ’701 patent; and claims 7-8 of the ’991 patent. The ID also finds that Hytera’s accused legacy products literally infringe claims 9 and 13-15 of the ’284 patent and that Hytera’s accused redesigned products infringe these claims under the doctrine of equivalents. The ID also finds that Hytera induced infringement of and contributorily infringed all of the claims of the asserted patents. As part of the ID’s finding of indirect infringement, the ID applied an adverse inference against Hytera for certain of its witnesses’ invocation of their Fifth Amendment right against self-incrimination. The ID also finds that Motorola satisfies the domestic industry requirement with respect to the ’869, ’701, and ’991 patents, but that its domestic products do not satisfy the technical prong of the domestic industry requirement with respect to the ’284 patent. Accordingly, the ID finds a violation of section 337 with respect to the ’869, ’701, and ’991 patents. The RD recommended the issuance of limited exclusion orders directed against Hytera’s infringing products and cease and desist orders directed against two domestic Hytera respondents.

On July 17, 2018, Motorola and Hytera petitioned for review of the final ID. Hytera’s petition for review included a petition for review of Order Nos. 38 and 47. On July 25, 2018, Motorola and Hytera each filed a response in opposition to the other party’s petition for review. On August 6 and 7, 2018, respectively, Hytera and Motorola filed statements on the public interest. On August 10, 2018, the Commission received statements on the public interest from interested non-parties.

On September 4, 2018, the Commission issued notice of its determination to review the following: (1) Order No. 38’s finding that Hytera’s licensing defense is precluded; (2) Order No. 47’s finding that certain expert testimony from Hytera at the evidentiary hearing is stricken; (3) the ID’s finding that Hytera’s accused redesigned products infringe claims 9 and 13-15 of the ’284 patent under the doctrine of equivalents; (4) the ID’s application of an adverse inference against Hytera as part of the finding of indirect infringement; and (5) the ID’s finding that insufficient record evidence exists to make a conclusive determination as to whether any redesigned products infringe the ’701 patent and ID’s lack of an express finding on this issue with respect to the ’869 or ’991 patent. The Commission determined not to review the remainder of the final ID. The determinations made in the final ID that were not reviewed became final determinations of the Commission by operation of rule. *See* 19 C.F.R. § 210.43(h)(2). The Commission also (1) requested the parties to respond to certain questions concerning the issues under review; and (2) requested written submissions on the issues of remedy, the public interest, and bonding from the parties, interested government agencies, and interested non-parties, including requesting the parties to respond to certain questions concerning the public interest. 83 *Fed. Reg.* 45679-81 (Sept. 10, 2018).

On September 18 and 25, 2018, respectively, complainant and respondents each filed a brief and a reply brief on all issues for which the Commission requested written submissions.

The Commission also received written submissions on the public interest from interested non-parties on September 18, 2018.

Having reviewed the record in this investigation, including the final ID and the parties' written submissions, the Commission has determined to affirm-in-part, reverse-in-part, modify-in-part, and strike certain portions of the final ID's findings under review. Specifically, the Commission has: (1) reversed the ID's finding that Hytera's accused redesigned products infringe claims 9 and 13-15 of the '284 patent under the doctrine of equivalents; (2) struck the first and second sentences of the fourth paragraph on page 8 in Order No. 38, and struck the third sentence of this paragraph "There is no analysis" and substituted "There is no analysis in Dr. Akl's Report," and struck the second sentence of the first full paragraph on page 9 of Order No. 38; (3) affirmed Order No. 47 and supplemented and clarified its reasoning; (4) took no position on the ID's drawing of an adverse inference against Hytera as part of its finding of indirect infringement; and (5) found that Hytera's redesigned products do not infringe the '701, '869, or '991 patents. Accordingly, the Commission has found that there is a violation of section 337 with respect to the '991, '869, and '701 patents.

Having found a violation of section 337 as to these patents, the Commission has made its determination on the issues of remedy, the public interest, and bonding. The Commission has determined that the appropriate form of relief is (1) a limited exclusion order prohibiting the unlicensed entry of two-way radio equipment and systems, related software and components thereof that infringe one or more of claims 1, 6, 17, and 21 of the '869 patent; claims 1 and 11 of the '701 patent; and claims 7-8 of the '991 patent, which are manufactured abroad by or on behalf of, or are imported by or on behalf of, Hytera, or any of its affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns; and (2) cease and desist orders prohibiting Hytera America or Hytera Communications America from conducting any of the following activities in the United States: importing, selling, marketing, advertising, distributing, offering for sale, transferring (except for exportation), and soliciting U.S. agents or distributors for two-way radio equipment and systems, related software and components thereof that infringe one or more of claims 1, 6, 17, and 21 of the '869 patent; claims 1 and 11 of the '701 patent; and claims 7-8 of the '991 patent.

The Commission further determined that the public interest factors enumerated in section 337(d)(1) and (f)(1) (19 U.S.C. §§ 1337(d)(1), (f)(1)) do not preclude issuance of the limited exclusion order or cease and desist orders. Finally, the Commission determined that a bond of 44 percent of the entered value of the covered products is required to permit temporary importation during the period of Presidential review (19 U.S.C. § 1337(j)). The Commission has also issued an opinion explaining the basis for the Commission's action. The Commission's order and opinion were delivered to the President and to the United States Trade Representative on the day of their issuance. The investigation is terminated.

The authority for the Commission's determination is contained in section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337, and in part 210 of the Commission's Rules of Practice and Procedure, 19 CFR part 210.

By order of the Commission.

A handwritten signature in black ink, appearing to read 'Lisa R. Barton', written in a cursive style.

Lisa R. Barton
Secretary to the Commission

Issued: November 16, 2018

**CERTAIN TWO-WAY RADIO EQUIPMENT AND
SYSTEMS, RELATED SOFTWARE AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1053

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **NOTICE** has been served upon the following parties as indicated, on 11/16/2018 .



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant Motorola Solution, Inc.:

Adam Alper, Esq.
KIRKLAND & ELLIS LLP
555 California Street
San Francisco, CA 94104

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

**On Behalf of Respondents Hytera Communications Corp.
Ltd., Hytera America, Inc., and Hytera Communications
America (West) Inc.:**

E. Robert Yoches
**FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP**
901 New York Avenue NW
Washington, DC 20001

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

UNITED STATES INTERNATIONAL TRADE COMMISSION

WASHINGTON, D.C.

In the Matter of

**CERTAIN TWO-WAY RADIO EQUIPMENT
AND SYSTEMS, RELATED SOFTWARE
AND COMPONENTS THEREOF**

Inv. No. 337-TA-1053

LIMITED EXCLUSION ORDER

The United States International Trade Commission (“Commission”) has determined that there is a violation of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), in the unlawful importation, sale for importation, or sale within the United States after importation by Respondents Hytera Communications Corp. Ltd., Hytera America, Inc., and Hytera Communications America (West), Inc. (collectively, “Hytera”) of certain two-way radio equipment and systems, related software and components thereof covered by one or more of claims 1, 6, 17, and 21 of U.S. Patent No. 7,369,869 (“the ’869 patent”), claims 1 and 11 of U.S. Patent No. 7,729,701 (“the ’701 patent”), and claims 7-8 of U.S. Patent No. 8,279,991 (“the ’991 patent”).

Having reviewed the record in this investigation, including the written submissions of the parties, the Commission has made its determination on the issues of remedy, public interest, and bonding. The Commission has determined that the appropriate form of relief is a limited exclusion order prohibiting the unlicensed entry of certain covered two-way radio equipment and systems, related software and components thereof manufactured by or on behalf of, or imported by or on behalf of, Hytera or any of its affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns.

The Commission has also determined that the public interest factors enumerated in 19 U.S.C. § 1337(d) do not preclude the issuance of the limited exclusion order, and that the bond during the Presidential review period shall be in the amount of 44 percent of the entered value of the covered products.

Accordingly, the Commission hereby **ORDERS** that:

1. Certain two-way radio equipment and systems, related software and components thereof that infringe one or more of claims 1, 6, 17, and 21 of the '869 patent; claims 1 and 11 of the '701 patent; and claims 7-8 of the '991 patent that are manufactured by, or on behalf of, or are imported by or on behalf of Hytera or any of its affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns ("covered articles"), are excluded from entry for consumption into the United States, entry for consumption from a foreign-trade zone, or withdrawal from a warehouse for consumption, for the remaining term of the patent, except under license of the patent owner or as provided by law.
2. The provisions of this Order shall not apply to certain two-way radio equipment and systems, related software and components thereof found to be non-infringing as detailed in the Commission's opinion dated November 16, 2018, at pages 27-28.
3. Notwithstanding paragraph 1 of this Order, the covered articles are entitled to entry into the United States for consumption, entry for consumption from a foreign trade zone, or withdrawal from a warehouse for consumption, under bond in the amount of 44 percent of the entered value for such products pursuant to subsection (j) of Section 337 of the Tariff Act of 1930, as amended

(19 U.S.C. § 1337(j)), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (70 *Fed. Reg.* 43,251), from the day after this Order is received by the United States Trade Representative, and until such time as the United States Trade Representative notifies the Commission that this action is approved or disapproved but, in any event, not later than 60 days after the issuance of receipt of this Order. All entries of covered articles made pursuant to this paragraph are to be reported to U.S. Customs and Border Protection (“CBP”), in advance of the date of the entry, pursuant to procedures CBP establishes.

4. At the discretion of CBP and pursuant to the procedures it establishes, persons seeking to import two-way radio equipment and systems, related software and components thereof that are potentially subject to this Order may be required to certify that they are familiar with the terms of this Order, that they have made appropriate inquiry, and thereupon state that, to the best of their knowledge and belief, the products being imported are not excluded from entry under paragraph 1 of this Order. At its discretion, CBP may require persons who have provided the certification described in this paragraph to furnish such records or analyses as are necessary to substantiate this certification.
5. In accordance with 19 U.S.C. § 1337(1), the provisions of this Order shall not apply to covered articles that are imported by or for the use of the United States, or imported for and to be used for, the United States with the authorization or consent of the Government.
6. The Commission may modify this Order in accordance with the procedures described in Rule 210.76 of the Commission’s Rules of Practice and Procedure

(19 C.F.R. § 210.76).

7. The Secretary shall serve copies of this Order upon each party of record in this Investigation and upon CBP.
8. Notice of this Order shall be published in the *Federal Register*.

By order of the Commission.

A handwritten signature in black ink, appearing to read "Lisa R. Barton". The signature is fluid and cursive, with the first name "Lisa" and the last name "Barton" clearly distinguishable.

Lisa R. Barton
Secretary to the Commission

Issued: November 16, 2018

**CERTAIN TWO-WAY RADIO EQUIPMENT AND
SYSTEMS, RELATED SOFTWARE AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1053

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **COMMISSION ORDER** has been served upon the following parties as indicated, on 11/16/2018 .



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant Motorola Solution, Inc.:

Adam Alper, Esq.
KIRKLAND & ELLIS LLP
555 California Street
San Francisco, CA 94104

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

**On Behalf of Respondents Hytera Communications Corp.
Ltd., Hytera America, Inc., and Hytera Communications
America (West) Inc.:**

E. Robert Yoches
**FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP**
901 New York Avenue NW
Washington, DC 20001

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

UNITED STATES INTERNATIONAL TRADE COMMISSION

WASHINGTON, D.C.

In the Matter of

**CERTAIN TWO-WAY RADIO EQUIPMENT
AND SYSTEMS, RELATED SOFTWARE
AND COMPONENTS THEREOF**

Inv. No. 337-TA-1053

CEASE AND DESIST ORDER

IT IS HEREBY ORDERED THAT RESPONDENT Hytera Communications America (West), Inc. (“Respondent” or “Hytera Communications America”) cease and desist from conducting any of the following activities in the United States: importing, selling, marketing, advertising, distributing, transferring (except for exportation), and soliciting U.S. agents or distributors for, certain two-way radio equipment and systems, related software and components thereof covered by one or more of claims 1, 6, 17, and 21 of U.S. Patent No. 7,369,869 (“the ’869 patent”), claims 1 and 11 of U.S. Patent No. 7,729,701 (“the ’701 patent”); and claims 7-8 of U.S. Patent No. 8,279,991 (“the ’991 patent”) (“Asserted Patents”) in violation of Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337).

I. DEFINITIONS

As used in this Order:

- (A) “Commission” shall mean the United States International Trade Commission.
- (B) “Complainant” shall mean Motorola Solutions, Inc.
- (C) “Respondent” shall mean Hytera Communications America (West), Inc., 300 Spectrum Dr., Suite 1120, Irvine, California 92618.

- (D) “Person” shall mean an individual, or any non-governmental partnership, firm, association, corporation, or other legal or business entity other than Respondent or its majority-owned or controlled subsidiaries, successors, or assigns.
- (E) “United States” shall mean the fifty States, the District of Columbia, and Puerto Rico.
- (F) The terms “import” and “importation” refer to importation for entry for consumption under the Customs laws of the United States.
- (G) The term “covered products” shall mean certain two-way radio equipment and systems, related software and components thereof covered by certain claims of the Asserted Patents. “Covered products” shall not include certain two-way radio equipment and systems, related software and components thereof found to be non-infringing as detailed in the Commission’s opinion dated November 16, 2018, at page 28.

II. APPLICABILITY

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, distributors, controlled (whether by stock ownership or otherwise) and majority-owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of, Respondent.

III. CONDUCT PROHIBITED

The following conduct of Respondent in the United States is prohibited by this Order. For the remaining terms of the Asserted Patents, the Respondent shall not:

- (A) import or sell for importation into the United States covered products;
- (B) market, distribute, sell, or otherwise transfer (except for exportation), in the

- United States imported covered products;
- (C) advertise imported covered products;
 - (D) solicit U.S. agents or distributors for imported covered products; or
 - (E) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered products.

IV. CONDUCT PERMITTED

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if in a written instrument, the owner of the relevant Asserted Patents authorizes or licenses such specific conduct, or such specific conduct is related to the importation or sale of covered products by or for the United States.

V. REPORTING

For purposes of this requirement, the reporting periods shall commence on January 1 of each year and shall end on the subsequent December 31. The first report required under this section shall cover the period from the date of issuance of this Order through April 30, 2019. This reporting requirement shall continue in force until such time as Respondent have truthfully reported, in two consecutive timely filed reports, that they have no inventory of covered products in the United States.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission: (a) the quantity in units and the value in dollars of covered products that they have (i) imported and/or (ii) sold in the United States after importation during the reporting period, and (b) the quantity in units and value in dollars of reported covered products that remain in inventory in the United States at the end of the reporting period.

When filing written submissions, Respondent must file the original document electronically on or before the deadlines stated above and submit eight (8) true paper copies to

the Office of the Secretary by noon the next day pursuant to Section 210.4(f) of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.4(f)). Submissions should refer to the investigation number ("Inv. No. 337-TA-1053") in a prominent place on the cover pages and/or the first page. (See Handbook for Electronic Filing Procedures, http://www.usitc.gov/secretary/fed_reg_notices/rules/handbook_on_electronic_filing.pdf). Persons with questions regarding filing should contact the Secretary (202-205-2000). If Respondent desires to submit a document to the Commission in confidence, they must file the original and a public version of the original with the Office of the Secretary and must serve a copy of the confidential version on Complainant's counsel.¹

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI. RECORD-KEEPING AND INSPECTION

- (A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the sale, offer for sale, marketing, or distribution in the United States of covered products, made and received in the usual and ordinary course of business, whether in detail or in summary form, for a period of three (3) years from the close of the fiscal year to which they pertain.
- (B) For the purposes of determining or securing compliance with this Order and for no other purpose, subject to any privilege recognized by the federal courts of the United States, and upon reasonable written notice by the Commission or its staff, duly authorized representatives of the Commission shall be permitted

¹ Complainant must file a letter with the Secretary identifying the attorney to receive reports associated with this order. The designated attorney must be on the protective order entered in the Investigation.

access and the right to inspect and copy, in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, in detail and in summary form, that must be retained under subparagraph VI(A) of this Order.

VII. SERVICE OF CEASE AND DESIST ORDER

Respondent is ordered and directed to:

- (A) Serve, within fifteen days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered products in the United States;
- (B) Serve, within fifteen days after the succession of any persons referred to in subparagraph VII(A) of this Order, a copy of the order upon each successor; and
- (C) Maintain such records as will show the name, title, and address of each person upon whom the order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until the expiration date of the Asserted Patents.

VIII. CONFIDENTIALITY

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of this Order should be made in accordance with Section 201.6 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 201.6). For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX. ENFORCEMENT

Violation of this Order may result in any of the actions specified in Section 210.75 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.75), including an action for civil penalties under Section 337(f) of the Tariff Act of 1930 (19 U.S.C. § 1337(f)), as well as any other action that the Commission deems appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if it fails to provide adequate or timely information.

X. MODIFICATION

The Commission may amend this Order on its own motion or in accordance with the procedure described in Section 210.76 of the Commission's Rules of Practice and Procedure (19 C.F.R. §210.76).

XI. BONDING

The conduct prohibited by Section III of this Order may be continued during the sixty-day period in which this Order is under review by the United States Trade Representative, as delegated by the President (70 Fed. Reg. 43,251 (Jul. 21, 2005)) subject to the Respondent's posting of a bond in the amount of 44 percent of the entered value for the covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered products imported on or after the date of issuance of this Order are subject to the entry bond set forth in the exclusion order issued by the Commission, and are not subject to this bond provision.

The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation are to be provided to and approved by the Commission prior to the

commencement of conduct that is otherwise prohibited by section III of this Order. Upon the Secretary's acceptance of the bond, (a) the Secretary will serve an acceptance letter on all parties, and (b) Respondent must serve a copy of the bond and accompanying documentation on Complainant's counsel.²

By order of the Commission.

A handwritten signature in black ink, appearing to read 'Lisa R. Barton', written in a cursive style.

Lisa R. Barton
Secretary to the Commission

Issued: November 16, 2018

² See Footnote 1.

**CERTAIN TWO-WAY RADIO EQUIPMENT AND
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Inv. No. 337-TA-1053

PUBLIC CERTIFICATE OF SERVICE

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Lisa R. Barton, Secretary
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500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant Motorola Solution, Inc.:

Adam Alper, Esq.
KIRKLAND & ELLIS LLP
555 California Street
San Francisco, CA 94104

- Via Hand Delivery
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 Via First Class Mail
 Other: _____

**On Behalf of Respondents Hytera Communications Corp.
Ltd., Hytera America, Inc., and Hytera Communications
America (West) Inc.:**

E. Robert Yoches
**FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP**
901 New York Avenue NW
Washington, DC 20001

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UNITED STATES INTERNATIONAL TRADE COMMISSION

WASHINGTON, D.C.

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**CERTAIN TWO-WAY RADIO EQUIPMENT
AND SYSTEMS, RELATED SOFTWARE
AND COMPONENTS THEREOF**

Inv. No. 337-TA-1053

CEASE AND DESIST ORDER

IT IS HEREBY ORDERED THAT RESPONDENT Hytera America, Inc. (“Respondent” or “Hytera America”) cease and desist from conducting any of the following activities in the United States: importing, selling, marketing, advertising, distributing, transferring (except for exportation), and soliciting U.S. agents or distributors for, certain two-way radio equipment and systems, related software and components thereof covered by one or more of claims 1, 6, 17, and 21 of U.S. Patent No. 7,369,869 (“the ’869 patent”), claims 1 and 11 of U.S. Patent No. 7,729,701 (“the ’701 patent”); and claims 7-8 of U.S. Patent No. 8,279,991 (“the ’991 patent”) (“Asserted Patents”) in violation of Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337).

I. DEFINITIONS

As used in this Order:

- (A) “Commission” shall mean the United States International Trade Commission.
- (B) “Complainant” shall mean Motorola Solutions, Inc.
- (C) “Respondent” shall mean Hytera America, Inc., 3315 Commerce Pkwy, Miramar, Florida 33025.

- (D) “Person” shall mean an individual, or any non-governmental partnership, firm, association, corporation, or other legal or business entity other than Respondent or its majority-owned or controlled subsidiaries, successors, or assigns.
- (E) “United States” shall mean the fifty States, the District of Columbia, and Puerto Rico.
- (F) The terms “import” and “importation” refer to importation for entry for consumption under the Customs laws of the United States.
- (G) The term “covered products” shall mean certain two-way radio equipment and systems, related software and components thereof covered by certain claims of the Asserted Patents. “Covered products” shall not include certain two-way radio equipment and systems, related software and components thereof found to be non-infringing as detailed in the Commission’s opinion dated November 16, 2018, at page 28.

II. APPLICABILITY

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, distributors, controlled (whether by stock ownership or otherwise) and majority-owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of, Respondent.

III. CONDUCT PROHIBITED

The following conduct of Respondent in the United States is prohibited by this Order. For the remaining terms of the Asserted Patents, the Respondent shall not:

- (A) import or sell for importation into the United States covered products;
- (B) market, distribute, sell, or otherwise transfer (except for exportation), in the

- United States imported covered products;
- (C) advertise imported covered products;
 - (D) solicit U.S. agents or distributors for imported covered products; or
 - (E) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered products.

IV. CONDUCT PERMITTED

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if in a written instrument, the owner of the relevant Asserted Patents authorizes or licenses such specific conduct, or such specific conduct is related to the importation or sale of covered products by or for the United States.

V. REPORTING

For purposes of this requirement, the reporting periods shall commence on January 1 of each year and shall end on the subsequent December 31. The first report required under this section shall cover the period from the date of issuance of this Order through April 30, 2019. This reporting requirement shall continue in force until such time as Respondent have truthfully reported, in two consecutive timely filed reports, that they have no inventory of covered products in the United States.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission: (a) the quantity in units and the value in dollars of covered products that they have (i) imported and/or (ii) sold in the United States after importation during the reporting period, and (b) the quantity in units and value in dollars of reported covered products that remain in inventory in the United States at the end of the reporting period.

When filing written submissions, Respondent must file the original document electronically on or before the deadlines stated above and submit eight (8) true paper copies to

the Office of the Secretary by noon the next day pursuant to Section 210.4(f) of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.4(f)). Submissions should refer to the investigation number ("Inv. No. 337-TA-1053") in a prominent place on the cover pages and/or the first page. (See Handbook for Electronic Filing Procedures, http://www.usitc.gov/secretary/fed_reg_notices/rules/handbook_on_electronic_filing.pdf). Persons with questions regarding filing should contact the Secretary (202-205-2000). If Respondent desires to submit a document to the Commission in confidence, they must file the original and a public version of the original with the Office of the Secretary and must serve a copy of the confidential version on Complainant's counsel.¹

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI. RECORD-KEEPING AND INSPECTION

- (A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the sale, offer for sale, marketing, or distribution in the United States of covered products, made and received in the usual and ordinary course of business, whether in detail or in summary form, for a period of three (3) years from the close of the fiscal year to which they pertain.
- (B) For the purposes of determining or securing compliance with this Order and for no other purpose, subject to any privilege recognized by the federal courts of the United States, and upon reasonable written notice by the Commission or its staff, duly authorized representatives of the Commission shall be permitted access and

¹ Complainant must file a letter with the Secretary identifying the attorney to receive reports associated with this order. The designated attorney must be on the protective order entered in the Investigation.

the right to inspect and copy, in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, in detail and in summary form, that must be retained under subparagraph VI(A) of this Order.

VII. SERVICE OF CEASE AND DESIST ORDER

Respondent is ordered and directed to:

- (A) Serve, within fifteen days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered products in the United States;
- (B) Serve, within fifteen days after the succession of any persons referred to in subparagraph VII(A) of this Order, a copy of the order upon each successor; and
- (C) Maintain such records as will show the name, title, and address of each person upon whom the order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until the expiration date of the Asserted Patents.

VIII. CONFIDENTIALITY

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of this Order should be made in accordance with Section 201.6 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 201.6). For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX. ENFORCEMENT

Violation of this Order may result in any of the actions specified in Section 210.75 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.75), including an action for civil penalties under Section 337(f) of the Tariff Act of 1930 (19 U.S.C. § 1337(f)), as well as any other action that the Commission deems appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if it fails to provide adequate or timely information.

X. MODIFICATION

The Commission may amend this Order on its own motion or in accordance with the procedure described in Section 210.76 of the Commission's Rules of Practice and Procedure (19 C.F.R. §210.76).

XI. BONDING

The conduct prohibited by Section III of this Order may be continued during the sixty-day period in which this Order is under review by the United States Trade Representative, as delegated by the President (70 Fed. Reg. 43,251 (Jul. 21, 2005)) subject to the Respondent's posting of a bond in the amount of 44 percent of the entered value for the covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered products imported on or after the date of issuance of this Order are subject to the entry bond set forth in the exclusion order issued by the Commission, and are not subject to this bond provision.

The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation are to be provided to and approved by the Commission prior to the

commencement of conduct that is otherwise prohibited by section III of this Order. Upon the Secretary's acceptance of the bond, (a) the Secretary will serve an acceptance letter on all parties, and (b) Respondent must serve a copy of the bond and accompanying documentation on Complainant's counsel.²

By order of the Commission.

A handwritten signature in black ink, appearing to read 'Lisa R. Barton', with a large, stylized flourish at the end.

Lisa R. Barton
Secretary to the Commission

Issued: November 16, 2018

² See Footnote 1.

**CERTAIN TWO-WAY RADIO EQUIPMENT AND
SYSTEMS, RELATED SOFTWARE AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1053

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **COMMISSION ORDER** has been served upon the following parties as indicated, on 11/16/2018 .



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant Motorola Solution, Inc.:

Adam Alper, Esq.
KIRKLAND & ELLIS LLP
555 California Street
San Francisco, CA 94104

- Via Hand Delivery
 Via Express Delivery
 Via First Class Mail
 Other: _____

**On Behalf of Respondents Hytera Communications Corp.
Ltd., Hytera America, Inc., and Hytera Communications
America (West) Inc.:**

E. Robert Yoches
**FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP**
901 New York Avenue NW
Washington, DC 20001

- Via Hand Delivery
 Via Express Delivery
 Via First Class Mail
 Other: _____

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**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.**

In the Matter of

**CERTAIN TWO-WAY RADIO
EQUIPMENT AND SYSTEMS,
RELATED SOFTWARE AND
COMPONENTS THEREOF**

Investigation No. 337-TA-1053

COMMISSION OPINION

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I. INTRODUCTION

On July 3, 2018, the presiding administrative law judge (“ALJ”) issued her final initial determination (“ID”) finding a violation of section 337 with respect to certain asserted patents by all of the respondents’ accused products. On September 4, 2018, the Commission determined to review the final ID in part. 83 *Fed. Reg.* 45679-81 (Sept. 4, 2018). The Commission now determines that a violation of section 337 has occurred, terminates the investigation, and issues the following remedial orders: (1) a limited exclusion order (“LEO”) with respect to respondents’ products that infringe certain claims of U.S. Patent Nos. 7,369,869 (“the ’869 patent”); 7,729,701 (“the ’701 patent”); and 8,279,991 (“the ’991 patent”); and (2) individual cease and desist orders (“CDOs”) with respect to domestic respondents Hytera America, Inc. (“Hytera America”) of Miramar, Florida and Hytera Communications America (West), Inc. (“Hytera Communications America”) of Irvine, California.

II. BACKGROUND

The Commission instituted this investigation on May 3, 2017, based on a complaint filed on behalf of Motorola Solutions, Inc. (“Motorola”) of Chicago, Illinois. 82 *Fed. Reg.* 20635-36 (May 3, 2017). The complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, by reason of infringement of certain claims of the ’869, ’701, and ’991 patents, as well as U.S. Patent Nos. 8,116,284 (“the ’284 patent”); 9,099,972 (“the ’972 patent”); 8,032,169 (“the ’169 patent”); and 6,591,111 (“the ’111 patent”). The ’972, ’169, and ’111 patents have been terminated from the investigation. See 83 *Fed. Reg.* 45679-81. The Commission’s Notice of Investigation named Hytera Communications Corp. Ltd. of Shenzhen,

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China; Hytera America, Inc.; and Hytera Communications America (West), Inc. as respondents (collectively, “Hytera”). The Office of Unfair Import Investigations did not participate in the investigation. 82 *Fed. Reg.* 20635-36.

On July 3, 2018, the ALJ issued her final ID. The ID found that Hytera’s accused products infringe claims 1, 6, 17, and 21 of the ’869 patent; claims 1 and 11 of the ’701 patent; and claims 7-8 of the ’991 patent. The ID found that Hytera’s accused legacy products literally infringe claims 9 and 13-15 of the ’284 patent and that Hytera’s accused redesigned products (“the ’284 Redesigned Products”) infringe these claims under the doctrine of equivalents. The ID also found that Hytera contributorily infringed and induced infringement of all of these claims. The ID also found that Motorola satisfies the domestic industry requirement with respect to the ’869, ’701, and ’991 patents, but that complainant’s domestic products do not satisfy the technical prong with respect to the ’284 patent. Accordingly, the ID found no violation of section 337 as to the ’284 patent, but found a violation with respect to the ’869, ’701, and ’991 patents based on direct or indirect infringement. The ALJ also issued her recommended determination (“RD”) on remedy and bonding during the period of Presidential review on July 3, 2018. The RD recommends the issuance of an LEO directed against Hytera’s infringing products and CDOs directed against the two domestic Hytera respondents.

On July 17, 2018, Motorola and Hytera petitioned for review of the final ID. On July 25, 2018, Motorola and Hytera each filed a response in opposition to the other party’s petition for review. On August 6 and 7, 2018, respectively, Hytera and Motorola filed statements on the public interest. On August 10, 2018, the Commission received statements on the public interest

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from interested non-parties.

On September 4, 2018, the Commission determined to review the final ID in part and to request submissions from the parties on specific issues under review. 83 *Fed. Reg.* 45679-81. The Commission also requested submissions on the issues of remedy, the public interest, and bonding from the parties, interested government agencies, and non-parties, including submissions on specific questions relating to the public interest. *Id.* On September 18 and 25, 2018, respectively, complainant and respondents each filed a brief and a reply brief on all issues for which the Commission requested written submissions.¹ The Commission also received written submissions on the public interest from interested non-parties on September 18.²

¹ See Respondents' Written Submission in Response to Commission's Determination to Review in Part an Initial Determination Finding a Violation of Section 337 and Order Nos. 3[8] and 47; Hytera Respondents' Submission on Public Interest, Remedy, and Bond; Respondents' Reply to Complainant's Written Submission in Response to the Commission's Determination to Review in Part an Initial Determination Finding a Violation of Section 337; Complainant Motorola Solutions, Inc.'s Written Submission in Response to the Commission's Determination to Review in Part an Initial Determination Finding a Violation of Section 337; Complainant Motorola Solutions, Inc.'s Reply to Respondents' Written Submission in Response to the Commission's Determination to Review in Part an Initial Determination Finding a Violation of Section 337. Motorola also filed an "Errata to Complainant Motorola Solutions, Inc.'s Reply to Respondents' Written Submission in Response to the Commission's Determination to Review in Part an Initial Determination Finding a Violation of Section 337" on October 16, 2018.

² See "Written Submission of Dealers That Supply and Repair Hytera Products in Response to the Commission's Request for Submissions on Remedy, Bonding, and the Public Interest in Certain Two-Way Equipment and Systems, Related Software and Components Thereof, Inv. No. 337-TA-1053" and "Written Submission of Local Governmental Agencies in Response to the Commission's Request for Submissions on Remedy, Bonding, and the Public Interest in Certain Two-Way Radio Equipment and Systems, Related Software and Components Thereof, Inv. No. 337-TA-1053."

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III. THE ACCUSED PRODUCTS

Hytera's accused products comprise subscriber units and base station radios with specific software and/or firmware that implement features that allegedly infringe the asserted patents.

Specifically, Motorola accused the following Hytera products of infringing the asserted patents.³

ID at 40.

'284 Accused Products	RD622, RD622i, RD982, RD982i, RD982S, RD982Si, MD652, MD652i, MD782i, BD302, BD502, PD362, PD412, PD502, PD502i, PD562, PD562i, PD602, PD602i, PD662, PD662i, PD682, PD682i, PD702, PD702i, PD752, PD752i, PD782, PD782i, PD792, PD792i, PD982, PD982i, X1e, X1p and all variants thereof, including those with DMR Radio & Receiver firmware version [[]] and [[]] and later (including code produced as [[]])
'869 Accused Products	MD652, MD782, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, RD622, RD982, X1e, X1p
'701 Accused Products	RD622, RD982, MD652, MD782, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, X1e, X1p and all variants thereof
'991 Accused Products	MD652, MD782, BD302, BD502, BD362, PD412, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, X1e, X1p and all variants thereof

³ The '284 Accused Products include redesigned products (*i.e.*, having an "i" suffix added to the model number), which consist of the PD5i Series (running redesigned version PD5) and PD6i, PD7i, and PD9i Series (running redesigned version R8.3), and they are referred to herein as "the '284 Redesigned Products." The remaining '284 Accused Products are referred to herein as "the '284 Legacy Products." ID at 40 n.32.

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IV. THE COMMISSION'S DETERMINATION ON REVIEW

On September 4, 2018, the Commission determined to review: (1) ALJ Order No. 38's finding that Hytera's licensing defense is precluded; (2) ALJ Order No. 47's striking of certain Hytera expert testimony at the evidentiary hearing; (3) the ID's finding that Hytera's accused redesigned products infringe claims 9 and 13-15 of the '284 patent under the doctrine of equivalents; (4) the ID's application of an adverse inference against Hytera as part of the finding of indirect infringement; and (5) the ID's finding that insufficient record evidence exists to make a conclusive determination as to whether any redesigned products infringe the '701 patent and the ID's lack of an express finding on this issue with respect to the '869 or '991 patent. 83 *Fed. Reg.* 45679-81 (Sept. 4, 2018). The Commission determined not to review the remainder of the ID.⁴ On review, the Commission finds that (1) the '284 Redesigned Products do not infringe claims 9 and 13-15 of the '284 patent under the doctrine of equivalents; and (2) there is sufficient record evidence to determine whether Hytera's redesigned products infringe the '701, '869, or '991 patents and that these products do not infringe these patents. The Commission also modifies portions of Order Nos. 38 and 47, but affirms their findings that Hytera's licensing defense is precluded and that certain expert testimony offered by Hytera at the evidentiary

⁴ The determinations made in the ALJ's final ID that were not reviewed became final determinations of the Commission by operation of rule. See 19 C.F.R. § 210.42(h)(2). The unreviewed findings include, but are not limited to, the ID's finding that (1) Motorola does not satisfy the technical prong of the domestic industry requirement with respect to the '284 patent; (2) the '284 Redesigned Products do not literally infringe this patent; (3) the '869 Accused Products (*i.e.*, see table *supra*) infringe this patent; (4) the '991 Accused Products (*i.e.*, see table *supra*) infringe this patent; (5) the '701 Accused Products (*i.e.*, see table *supra*) infringe this patent; and (6) Hytera contributorily infringes, and induces infringement of, the asserted claims of the '284, '869, '991, and '701 patents. See ID at 62-68, 201-234, 258.

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hearing is stricken. The Commission also takes no position on the ID's drawing of an adverse inference against Hytera as part of its finding of indirect infringement. These actions result in a violation of section 337 with respect to the asserted '701, '869, and '991 patents.

V. DISCUSSION AND FINDINGS

For the reasons set forth below, the Commission has determined to affirm-in-part, modify-in-part, reverse-in-part, take no position on, and strike certain portions of the ID's findings that are under review.

A. Order No. 38 – the ALJ's Striking of Hytera's License Defense

1. Governing Rules

Section 7.2 ("Pre-Hearing Brief") of the ALJ's Ground Rules states, in relevant part, that:

The [pre-hearing] brief shall set forth with particularity the authoring party's contentions on each of the proposed issues, including citations to legal authority in support thereof, and shall conform to the sample outline set forth in Appendix B hereto. All issues, including issues not specifically named in the general outline set forth in said appendix that any party seeks to address, shall be added where appropriate . . . Any contentions not set forth in detail as required herein shall be deemed abandoned or withdrawn, except for contentions of which a party is not aware and could not be aware in the exercise of reasonable diligence at the time of filing the pre-hearing brief. However, the parties are advised to select their best, well-reasoned and persuasive arguments, and abandon extraneous or far-fetched contentions at this time.

See ALJ Order No. 3, Attachment B at 25-26 (May 15, 2017). Section 9.5.6 ("Scope of Expert Witness Testimony") of the ALJ's Ground Rules states that:

Expert witness testimony at the hearing shall be confined to the scope of the expert's report(s), and deposition testimony. The proponent of the witness is expected to be prepared to demonstrate promptly where in that witness's reports or depositions may be found each element of testimony sought to be elicited at the hearing.

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See Order No. 3 at 3. Also, Section 5 (“Expert Witnesses and Reports”) of the ALJ’s Ground Rules states, in relevant part, that:

The [expert] report shall contain a complete statement of all opinions to be expressed and the basis and reasons therefor; the data or other information considered by the witness in forming the opinions; any exhibits to be used as a summary of or support for the opinions; the qualifications of the witness, including a list of all publications authored by the witness within the preceding ten years[.]

See Order No. 3 at 23.

2. *The ALJ’s Order No. 38*

On January 29, 2018, the ALJ issued Order No. 38, granting in part and denying in part Motorola’s omnibus motion *in limine* (filed January 5, 2018), and precluding Hytera from submitting certain documents and testimony into evidence during the evidentiary hearing. Among other things, Order No. 38 precluded Hytera’s licensing defense, which the ALJ found to be unsupported by its pre-hearing brief and Dr. Akl’s expert report. The Commission determined to review the decision in Order No. 38 to preclude Hytera’s licensing defense.

3. *Analysis*

The Commission finds that the ALJ’s Ground Rules 5 and 7.2 regarding the expert report and pre-hearing brief were not met and therefore Order No. 38 properly precluded presentation of Hytera’s licensing defense at the hearing. The Commission therefore affirms the ALJ’s decision to preclude the licensing defense in Order No. 38, but with the following modifications. The Commission finds that Order No. 38 unnecessarily required Dr. Akl to be a “legal expert” in the field of licensing in order to offer his opinion in the report and incorrectly stated that he did

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not identify which specific digital mobile radio (“DMR”) standards apply. The Commission therefore modifies Order No. 38 by (1) striking the first and second sentences of paragraph 4 on pages 8-9 of Order No. 38 (*i.e.*, beginning with “As Dr. Akl acknowledges . . .”); (2) striking the third sentence of this paragraph “There is no analysis” and substituting “There is no analysis in Dr. Akl’s Report”; and (3) striking the second sentence of the first full paragraph on page 9 of Order No. 38 (*i.e.*, beginning with “Dr. Akl lacked . . .”).

B. Order No. 47 – the ALJ’s Striking of Hytera’s Evidence on Validity and Infringement

1. Governing Rules

The ALJ’s Ground Rules governing Order No. 47, *i.e.*, Ground Rules 5 and 7.2, are recited in the previous section.

2. The ALJ’s Order No. 47

On February 5, 2018, following the evidentiary hearing in the investigation, the ALJ issued Order No. 41 which, *inter alia*, permitted the parties to file motions to strike hearing testimony and expert opinions (or fact witness testimony) by a certain due date. Order No. 41 stated that “[t]ypical reasons to request striking testimony is because the hearing testimony/opinion was beyond the scope of an expert report or witness statement, or the prehearing brief, or no such opinion was offered previously. There may be other reasons as well.” *See* Order No. 41, at 4. Motorola and Hytera each filed motions to strike certain portions of hearing testimony.

On May 18, 2018, the ALJ issued Order No. 47, granting in part and denying in part Motorola’s motion to strike portions of Hytera’s expert testimony (from Dr. Akl) regarding

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infringement and invalidity as being in violation of Ground Rules 7.2 and/or 9.5.6. Order No. 47 found that certain parts of Hytera's pre-hearing brief and Dr. Akl's expert reports were conclusory, providing little explanation or analysis. Order No. 47, at 3. The Order strikes "that testimony that Dr. Akl gave during the Hearing that appears clearly to be outside the scope of his expert reports, his expert deposition testimony (to the extent that was disclosed), and Hytera's Pre-Hearing Brief[.]" *Id.* at 4. In explaining the shortcomings of Hytera's pre-hearing brief, the Order states that it "failed to cite to documentary or testimonial evidence." *Id.* at 3. The Order also explains that "where Dr. Akl's Hearing testimony is not clearly outside the scope of his expert reports or Hytera's Pre-Hearing Brief, this Order does not strike Dr. Akl's testimony." *Id.* at 4. The Order included a 626-page appendix (Appendix A) which detailed the portions of stricken testimony. Specifically, the appendix identifies (1) Hytera's expert testimony from the evidentiary hearing to which Motorola objected; (2) Hytera's expert testimony taken from his expert reports or from Hytera's Pre-Hearing Brief for comparison to the expert hearing testimony that Motorola requested to be stricken; (3) Hytera's rebuttal and rationale with counter-testimony or citations that support respondents' contentions that the expert testimony should not be stricken; and (4) the ALJ's decision and rationale for either striking or not striking the expert testimony at issue. *Id.* Thus, in short, Order No. 47 struck only the portions of the evidentiary hearing testimony of Dr. Akl that appeared to be clearly outside the scope of his expert reports, his expert deposition, and Hytera's pre-hearing brief. *Id.* (citing to Appendix A to Order No. 47).

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3. *Analysis*

Hytera does not dispute many of the facts discussed in Order No. 47. Rather, Hytera contends that because the term “evidence” is not specifically used in Ground Rule 7.2, the ALJ penalized Hytera for violating a non-existent rule when she explained in Order No. 47 that Hytera’s pre-hearing brief “failed to cite to documentary or testimonial evidence.”⁵ The Commission agrees with Hytera that Ground Rule 7.2 does not require the citation of “evidence” in a pre-hearing brief.⁶ Instead, it requires parties to “set forth with particularity the authoring party’s contentions on each of the proposed issues, including citations to legal authority in support thereof.” *See* ALJ’s Ground Rule 7.2. It further states that “[a]ny contentions not set forth in detail as required herein shall be deemed abandoned or withdrawn, except for contentions of which a party is not aware and could not be aware in the exercise of reasonable diligence at the time of filing the pre-hearing brief.” *Id.* Thus, the language of the rule does not expressly require citation to evidence or supporting factual material. Parties, however, may cite to supporting factual material in order to set forth their contentions with particularity. Notably, the ALJ’s Ground Rule 7.2 specifically states that the parties may “attach critical

⁵ Hytera’s petition for review includes several additional arguments challenging Order No. 47. We have considered these arguments and do not find them to be compelling.

⁶ The Commission observes that “evidence” under the Commission rules refers to material received into the record during the evidentiary hearing. *See* 19 C.F.R. § 210.36(a); *see also* 19 C.F.R. § 210.37. We understand that Order No. 47’s reference to documentary or testimonial “evidence” (Order No. 47 at 3) does not refer to material formally admitted into the record pursuant to Rule 210.36. It would be improper to require that such evidence be cited in the pre-hearing brief, which is filed prior to the evidentiary hearing. Instead, we understand Order No. 47’s use of the term “evidence” to refer to factual material which Hytera intends to rely on to support its contentions.

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charts, figures, or other pertinent material” to their briefing. *Id.* Accordingly, the Commission finds that it was Hytera’s obligation to present, with particularity, its contentions regarding its defenses, including contentions pertaining to non-infringement and invalidity of the asserted patents. Citing to factual material such as expert reports, produced documents, witness statements, or exhibits may be a way of showing satisfaction of Ground Rule 7.2, although there is no *per se* requirement under the rule that mandates citation of such material.

The Commission concludes, based on the facts detailed in the ALJ’s appendix to Order No. 47, that the stricken portions of Dr. Akl’s expert testimony at the hearing went beyond the scope of the expert report and/or the pre-hearing brief in violation of the relevant Ground Rules.⁷ Accordingly, the Commission finds that Order No. 47 was correct to strike this expert testimony from the evidentiary hearing.

We view Order No. 47’s reference to Hytera’s failure “to cite to documentary or testimonial evidence” as a way of exemplifying the fact that Hytera failed to set forth certain arguments with particularity, something Hytera did do with respect to other contentions. *See, e.g.,* Hytera’s Pre-Hearing Br. at 13, 18-20.

⁷ In making this finding, the Commission observes that Hytera’s petition does not attempt to identify any alleged errors committed by the ALJ specific to particular stricken testimony. Thus, even though the Commission agrees with Hytera’s argument that there is no requirement to cite “evidence” in a pre-hearing brief under Ground Rule 7.2, Hytera fails to identify what particular testimony, if any, was improperly stricken solely on that basis.

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C. The ID's Finding that the '284 Redesigned Products Infringe the '284 Patent Under the Doctrine of Equivalents

1. Relevant Law

After properly construing the claims, a factual inquiry is conducted to compare the claims with the accused device or process to determine infringement. *See MBO Labs., Inc v. Becton Dickinson & Co.*, 474 F.3d 1323, 1329 (Fed. Cir. 2007). The patentee bears the burden of demonstrating infringement by a preponderance of the evidence. *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1310 (Fed. Cir. 2005). To prove literal infringement, the patentee must show that an accused product contains every limitation in the asserted claims. *WMS Gaming Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1350 (Fed. Cir. 1999).

Infringement under the doctrine of equivalents (“DOE”) may be found “when the accused device contains an ‘insubstantial’ change from the claimed invention,” or if “the accused element of the accused device ‘performs substantially the same function in substantially the same way to obtain the same result.’” *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1376-77 (Fed. Cir. 2008). The DOE compares claim limitations with elements of an accused product, not with the entire product. *Augme Techs. Inc. v. Yahoo! Inc.*, 755 F.3d 1326, 1336 (Fed. Cir. 2014) (“the function-way-result test compares a *limitation* of a claim to an *element* of an accused product, not the entire patent to the entire product”) (emphasis in original). If an element is missing or not satisfied, infringement cannot be found under the DOE as a matter of law. *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538-39 (Fed. Cir. 1991); *see also Lockheed Martin Corp. v. Space Sys/Loral, Inc.*, 324 F.3d 1308, 1321 (Fed. Cir. 2003) (“Under

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the all elements rule, there can be no infringement under the doctrine of equivalents if even one limitation of a claim or its equivalent is not present in the accused device.”).

2. *The ALJ's ID*

Motorola asserted that the '284 Redesigned Products infringe claims 9 and 13-15 of the '284 patent. Representative claim 9 reads:

9. A radio communication device having an assigned default timeslot for communicating with a talkgroup of other radio communication devices, the radio communication device comprising:

radio communication circuitry; and

a processor coupled to the radio communication circuitry, wherein in operation the processor:

determines, from a signal provided by the radio communication circuitry, if the default timeslot is available for the radio communication device to communicate with the talkgroup, and

when the default timeslot is unavailable the processor instructs the radio communication circuitry to search for an available timeslot and temporarily select the available timeslot as a temporary selected group timeslot for the talkgroup, and

when the default timeslot becomes available the processor instructs the radio communication circuitry to re-select the default timeslot for communicating with the talkgroup.

JX-1, claim 9 (emphasis added).

The ALJ construed the “default timeslot” limitation of the '284 patent in accordance with its plain and ordinary meaning. *See Markman* Order No. 25 (December 29, 2017). The ID found that even though the '284 Redesigned Products do not meet the “default timeslot” limitation and therefore do not literally infringe the asserted claims of this patent, these products

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infringe under the DOE. ID at 62-70.

The ID found that the '284 Redesigned Products infringe the asserted claims of the '284 patent under the DOE by performing substantially the same function in substantially the same way to achieve substantially the same result. ID at 68. With respect to having a “default timeslot,” the ID found that the '284 Redesigned Products perform substantially the same function as the claimed invention because they [[]]. *Id.* (citing Tr. (Wicker) at 236:15-22). The ID also found that the '284 Redesigned Products perform a “default timeslot” function in substantially the same way as the claimed invention, in that they and the claimed invention [[

]]. *Id.* (citing the same at 236:23-237:6). The ID further found that Hytera’s '284 Redesigned Products achieve substantially the same result as the claimed invention because they both [[

]]. The ID also found that [[]] a strict co-equal timeslot arrangement [[]] such that each timeslot is cycled through randomly or in lockstep fashion (*i.e.*, timeslot 4 always checked after timeslot 3 and so on).

Based on the foregoing, the ID found that Motorola had proven by a preponderance of the evidence that the '284 Redesigned Products infringe asserted claims 9 and 13-15 of the '284 patent under the DOE.

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3. Analysis

The Commission finds that the ID properly determined that the “co-equal” or “second-best” timeslot of the '284 Redesign Products does not literally satisfy the “default timeslot” limitation of asserted claims 9 and 13-15 of the '284 patent. *See* ID at 62-68. As disclosed in the '284 specification and illustrated in Fig. 3 of the patent, the default timeslot must be selected, or re-selected, if it is available for communication with the base station. *See* JX-1 at Fig. 3; 4:51-60. The '284 patent discloses no alternative arrangement where the default timeslot may [[]]. Accordingly, the ID properly found no literal infringement of the '284 patent with respect to the '284 Redesign Products and the Commission did not review this finding.

However, the Commission finds that the ID, after properly determining that the critical limitation, “default timeslot,” was not satisfied by the '284 Redesign Products, ignored the importance of this limitation when it found that the Redesign Products still performed the same function of the claimed invention in the same way with the same result. Specifically, the Commission finds that the ID’s equivalence analysis essentially reads this critical limitation out of the claim, a result which is prohibited under the law. *See, e.g., Carson Pirie Scott*, 946 F.2d at 1538-39 (Court finding that if an element is missing or not satisfied, infringement cannot be found under the doctrine of equivalents as a matter of law); *Lockheed Martin Corp.*, 324 F.3d at 1321 (“Under the all elements rule, there can be no infringement under the doctrine of equivalents if even one limitation of a claim or its equivalent is not present in the accused device.”). It is the availability of the default timeslot which must be equivalent, not simply the

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[[]]. The '284 patent claims require that the default timeslot be chosen when available for any new communication, not simply chosen as a fallback timeslot [[]]. See JX-1 at Fig. 3; 4:51-60.

Accordingly, the accused products cannot perform substantially the same function in substantially the same way with the same result where the claimed invention requires selecting and using a "default" timeslot whenever available and the '284 Redesigned Products merely [[]]. The Commission therefore reverses the ID's finding that the '284 Redesigned Products infringe claims 9 and 13-15 of the '284 patent under the DOE.

D. The ID's Application of an Adverse Inference Against Hytera as Part of the Finding of Indirect Infringement

1. The ALJ's ID

The ID found that Hytera contributorily infringed and induced infringement of the asserted '284, '991, '701, and '869 patents. ID at 204-34. In finding that Hytera satisfied the knowledge and specific intent requirements for these infringement allegations, the ID found that former Motorola engineers (who left to work for Hytera) wrongfully copied certain of Motorola's patented technologies into the accused products. *Id.* at 204-23. In reaching this finding, the ID drew an adverse inference against Hytera based on the former Motorola engineers' refusal to answer questions related to the copying based on their Fifth Amendment right against self-incrimination. *Id.* at 206, 219-20 (citing *Baxter v. Palmigiano*, 425 U.S. 308, 318 (1976); *LiButti v. United States*, 107 F.3d 110, 123-24 (2d Cir. 1997)). The inference

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drawn by the ID was that Hytera “intentionally copied Motorola’s patented technologies into the Accused Products.” *Id.* at 220.

Specifically, the ID found that three former Motorola engineers left the company and shortly thereafter went to work for Hytera, *i.e.*, Mr. G.S. Kok (becoming Hytera’s Director of Two-Way Radio Product Development), Mr. Y.T. Kok (joining G.S. Kok’s team as a Software Manager for DMR products), and Mr. Chia (becoming General Manager of Software R&D for Hytera’s DMR products), and that each engineer worked at Motorola during the development of the technologies of the asserted patents. *Id.* at 206 (citing CX-615C; CX-11; CX-618C); see also CX-743C at 56:13-20; CX-751C at 24:21-25:7; CX- at 64:15-65:15). The ID found that (1) just before they left Motorola, these engineers accessed more than 7,000 confidential documents related to the patented technologies; and (2) that these documents were not accessed as part of the engineers’ ordinary work responsibilities because they were no longer working on Motorola DMR-related projects at that time. *Id.* at 205-09 (citing RX-447C (Shepard Dep. Tr.) at 96:22-24; CX-24C (Chia access log); CX-684C (Y.T. Kok access log)). The ID also found that (1) Mr. G.S. Kok left Motorola in February 2008 to join Hytera and then actively recruited and hired several Motorola DMR engineers, including Messrs. Y.T. Kok and Chia, to work for Hytera’s DMR group; and (2) on June 23, 2008, Mr. Chia (already working for Hytera) received an email from a lead Hytera engineer, Mr. Zhang Ying Zhe, inquiring about the operation of specific Motorola products related to the asserted patents; (3) on that same date, Mr. Chia forwarded the email to Mr. Y.T. Kok (who was still working for Motorola, but also had a Hytera email address at the time) asking for those details about the Motorola DMR products; and (4) on that same

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date, Mr. Y.T. Kok accessed more than 50 confidential Motorola documents after having accessed no documents in the four weeks prior to that date, and then accessed another 190 confidential Motorola documents in the following week. *Id.* at 206-214 (citing CX-616C.2; CX-746C (Chia Dep. Tr.) at 36:19-21, 37:22-38:2, 38:25-39:4, 39:15-21, 40:15-22); CX-699.1C.4; CX-751C (Y.T. Kok Dep. Tr.) at 86:13-22, 87:3-15, 87:22-88:11, 89:16-90:2, 90:9-91:12, 93:5-8).

Further, the ID found that these former Motorola engineers each were questioned extensively, *e.g.*, more than 60 questions each, during their depositions about whether certain aspects of the accused products were developed using Motorola's confidential information that they downloaded, and that each refused to answer any of these questions. *Id.* at 215 (CX-746C (Chia Dep. Tr.) at 187:9-16; CX-751 (Y.T. Kok Dep. Tr.) at 299:8-19, 299:20-300:3, 302:8-13, 300:19-25, 301:2-8; CX-743 (G.S. Kok Dep. Tr.) at 74:24-84:24). The ID specifically found that each former Motorola employee refused to answer these questions and invoked their Fifth Amendment right against self-incrimination.⁸ *Id.* at 215-218. Based on this invocation of the Fifth Amendment, the ID drew an adverse inference that Hytera intentionally copied Motorola's patented technologies into the accused products. *Id.* at 220.

The ID's drawing of this adverse inference was not the only basis for its decision finding that Hytera intentionally copied Motorola's patented technologies into the accused products.

⁸ Motorola has a parallel Federal District Court case against Hytera for trade secret theft where, according to Hytera, Motorola accused each former Motorola engineer of criminal trade secret theft. *See* ID at 219 n.83 (citing the Federal District Court case, *Motorola Solutions, Inc. v. Hytera Commc'ns Corp. et al.*, Case No. 1:17-cv-1973 (N.D. Ill. Mar. 14, 2017)).

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The ALJ also found that the record evidence independently supported its findings. *See id.* at 205-06. The evidence relied on by the ALJ showed (1) the proximity in time between when the former employees left Motorola and then started working at Hytera on DMR projects that infringed the asserted patents; (2) the fact that all of the former Motorola engineers knew each other and that Mr. G.S. Kok actively recruited the other two engineers (*i.e.*, Messrs. Y.T. Kok and Chia) as well as other former Motorola employees; and (3) the documentary evidence regarding the access and downloading of over 7,000 confidential documents related to Motorola DMR projects by the former Motorola employees when none of them were working on these projects at the time the documents were retrieved. *Id.*

2. Analysis

The Commission takes no position on the ID's drawing of an adverse inference based on the assertion of the Fifth Amendment privilege. *See Beloit v. Valmet Oy*, 742 F.2d 1421, 1423 (Fed. Cir. 1984). However, the ID discusses extensive evidence that the former Motorola engineers copied these patented technologies. Thus, the Commission finds the record evidence of copying sufficient and therefore affirms the ID's finding that Hytera intentionally copied these patented technologies. The Commission also finds that the evidence (*i.e.*, the totality of circumstances found in the ID and herein) supports the ultimate finding of knowledge and specific intent for indirect infringement with respect to each asserted patent.⁹

⁹ Relevant to knowledge of the asserted patents, the ID found that, undisputed by Hytera, each of the former Motorola engineers worked at Motorola during the development of the technologies of the '284, '991, and '869 patents. ID at 206. The ID further found that sufficient record evidence showed that certain accused features of Hytera's accused products were developed from and/or encompass aspects of Motorola's technologies described in the '284, '869, and '701

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E. The ID's Finding that Insufficient Record Evidence Exists to Make a Conclusive Determination as to Whether any Redesigned Products Infringe the '701 Patent and the ID's Lack of an Express Finding on this Issue with Respect to the '869 or '991 Patent.

1. Relevant Law

Since Commission remedial orders are typically directed to all products covered by the patent claims as to which a violation has been found, rather than being limited to only those specific models found to infringe (*see Certain Hardware Logic Emulation Systems and Components Thereof*, Inv. No. 337-TA-383, Comm'n Op. at 16 (March 31, 1998) (public version)), the Commission has encouraged respondents under certain circumstances to put forward products (typically redesigned products) for adjudication even if they are not expressly accused by the complainant. *See, e.g., Certain Multiple Mode Outdoor Grills and Parts Thereof ("Outdoor Grills")*, Inv. No. 337-TA-895, Comm'n Op. at 15-20 (July 23, 2014) (public version). Allowing respondents to put forward redesigned products for adjudication serves the interest of providing predictability in the enforcement of remedial orders.

Hytera has presented evidence concerning its redesigned products in accordance with the Commission's practice for determining whether redesigned products are properly before the Commission for an adjudication of infringement. Specifically, Hytera has met its burden to show that the redesigned products are fixed in design, have been imported, and have been sufficiently disclosed by respondents during discovery. *See, e.g., Outdoor Grills*, Order No. 47

patents. *Id.* at 220. Moreover, the ID found that Hytera was willfully blind to the asserted patents and its infringement of them. *Id.* at 223-26.

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unreviewed (Dec. 2, 2014); *Certain GPS Chips*, Inv. No. 337-TA-596, Initial Determination, USITC Pub. No. 4133, 2010 WL 1502175 at *34-35 (Mar. 1, 2010) (not reviewed) (refusing jurisdiction over new product that was still in development because the design was not final); *Certain Electronic Digital Media Devices and Components Thereof* (“*Media Devices*”), Inv. No. 337-TA-796, Initial Determination at 11 (October 24, 2012) (affirmed in relevant part). The Commission has affirmed an ID finding that redesigned products should be adjudicated where “the design around products are within the scope of the investigation, have been imported, into the United States or sold in the United States, [and] were the subject of extensive discovery as well as testimony during the evidentiary hearing in this investigation.” *See Media Devices*, ID at 11.

2. *The ALJ's ID*

Regarding the '284 Redesigned Products, the ID found that (1) Motorola had been aware of these products based on deposition testimony from Hytera's corporate representative; (2) Hytera produced documents and source code relating to these products, including providing expert testimony during the evidentiary hearing that these products were submitted for FCC approval; and (3) these products had been imported into the United States. ID at 18-20, 60-61 (citing CX-1632C (Zheng Dep.) at 10:18-24, 13:25-14:3, 14:11-21, 16:7-11, 16:23-17:8; Tr. (Akl) at 936:16-20; Tr. (Wicker) at 226-37, 229:19-24, 446-52). Based on the foregoing, the ID found that the '284 Redesigned Products were sufficiently “fixed” and that Motorola had sufficient discovery of these products to evaluate their structure and operation as well as formulate infringement theories. *Id.* at 61.

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The ID found, however, that the only evidence pertaining to infringement by Hytera's redesigned products with respect to the '701 patent ("701 Redesigned Products") was "thin" testimony given by Hytera's witness who only identified "new" subscriber units in the PDi series. ID at 136 n.52 (citing Tr. (Yuan) at 841:7-11). The ID found that this testimony was insufficient to conclude with certainty that Hytera is importing any infringing '701 Redesigned Products into the United States or even establish jurisdiction with respect to these products. Accordingly, the ID did not determine whether these alleged redesigned products infringe the '701 patent. The ID does not include any discussion regarding infringement of the '991 or '869 patents by any alleged redesigned products.

3. Analysis

The Commission has already determined not to review the ID's finding that Hytera's redesigned product features relevant to the asserted '284 patent are sufficiently fixed, imported, and subject to discovery including evidentiary testimony to allow Motorola to evaluate their structure and operation as well as formulate infringement theories for adjudication by the Commission. ID at 18-20, 61. Also, the parties agree as to the identity of Hytera's redesigned products at issue regarding the '701, '991, and '869 patents, which are the same redesigned products at issue with respect to the '284 patent. *See* Motorola's Sub. at 2 (citing Hytera's Pre-Hearing Br. at Ex. 1) ("[T]he allegedly redesigned products are the same across the patents-in-suit, with the exception that the redesigned functionality related to some of the patents is found in subscribers or repeaters, but not both."). Accordingly, from the parties' submissions, the principal issues on review are (1) whether Hytera produced discovery that is sufficient to inform

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Motorola with respect to the redesigned product features relevant to the asserted '701, '869, and '991 patents, for example, information that is equivalent to that produced with respect to the redesigned product features relevant to the '284 patent; and (2) whether Motorola's decision not to assert infringement by the redesigned products with respect to these three patents constitutes a failure to satisfy its burden to prove infringement.

The Commission answers both (1) and (2) in the affirmative. Hytera, in its pre-hearing brief, identified the redesigned products that are at issue with respect to each asserted patent. *See* Hytera's Pre-Hearing Br. at Ex. 1. Further, with respect to its redesigned products, Hytera produced discovery (including source code, corporate witness depositions, and expert reports), as well as testimonial evidence at the hearing, regarding its non-infringement contentions as to the '991, '869, and '701 patents that are equivalent to what was produced with respect to the '284 patent. *See* CX-793C.32-34 (non-infringement contentions and source code relating to the '991 patent), 51 (non-infringement contentions and source code relating to the '869 patent), 64-69 (non-infringement contentions and source code relating to the '284 patent), 80 (non-infringement contentions and source code relating to the '701 patent); CX-1632C (Zheng Dep.) at 15:2-6 and 16:7-17:8 (both regarding importation of the redesigned products), 38:2-39:8 (the '701 patent), 44:13-22 (the '284 patent), 45:8-21, 53:23-56:19 (the '991 patent), 75:17-78:19 (the '869 patent); Ex. 1 to Motorola's Sub. (Akl Rebuttal Rep.) at ¶¶ 125 (the '869 patent), 157 (the '701 patent), 475-494 (the '284 patent), 596 (the '991 patent); Tr. (Wicker) at 229:16-237:15 (the '284 patent); Tr. (Zheng) at 877:8-14 (the '991 patent), Tr. (Akl) at 1109:18-1110:5 (the '991 patent); Tr. (Akl) at 1068:2-24 (the '869 patent), Tr. (Akl) at 936:9-938:16 (the '701 patent).

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This cited evidence corresponds to similar evidence cited by the ID to find that the '284 Redesignated Products are sufficiently fixed, have been subject to extensive discovery, and have been imported to warrant adjudication of infringement. *See* ID at 18-20, 61. Accordingly, consistent with Commission precedent, the Commission finds that Hytera placed the redesigned products at issue for an infringement adjudication. Moreover, Motorola states that it did not pursue infringement allegations with respect to '991, '701, or '869 patents because it believed, based on this record evidence, that the redesigned products did not infringe these patents because of the removal of the relevant infringing feature. Motorola's Sub. at 2-4, 10 (citing CX-793 C.32-34 (the '991 patent), 51 (the '869 patent), 80 (the '701 patent)); Motorola's Reply at 7-8 (citing the same). We view this statement as an admission that these products do not infringe the '991, '701, or '869 patents. Further, because Motorola failed to put forward evidence on infringement it did not carry its burden to prove infringement by a preponderance of the evidence. Accordingly, these redesigned products are not covered by our remedial orders.

Based on the foregoing, the Commission finds that Hytera's redesigned products do not infringe the '991, '869, or '701 patents. Accordingly, the Commission reverses the ID's finding (*see* ID at 136 n.52) that a conclusive determination regarding whether the redesigned products infringe the '701 patent could not be made. The specific redesigned products of Hytera that are found not to infringe include the following:

New Hytera Subscriber Products bearing the following model names:

PD602i (400-527 MHz), Hytera PD662i (400-527 MHz), Hytera PD682i (400-527 MHz), Hytera PD702i (400-470 MHz), Hytera PD702i (450-520 MHz), Hytera PD752i (450-520 MHz), Hytera MD782i (136-174 MHz), Hytera MD782i (400-470 MHz), Hytera MD782i (450-520 MHz), Hytera

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MD782i (400-470 MHz), Hytera MD782i (450-520 MHz), Hytera MD782i (806-941 MHz), Hytera PD982i (136-174 MHz), Hytera PD982i (400-470 MHz), Hytera PD982i (450-520 MHz), Hytera BD302i (400-470 MHz), Hytera BD502i (400-470 MHz), Hytera BD502i (136-174 MHz), Hytera PD362i (430-470 MHz), Hytera PD402i (400-470 MHz), Hytera PD502i (136-174 MHz), Hytera PD502i (400-470 MHz), Hytera PD562i (400-470 MHz).

See Motorola's Sub. at 2. (citing Hytera's Pre-Hearing Br. at Ex. 1 at 1). New Hytera Repeater

Products bearing the following model names:

Hytera RD622i (400-470 MHz), Hytera RD982i (136-174 MHz), Hytera RD982i (400-470 MHz), Hytera RD982i (450-520 MHz), Hytera RD982i (806-941 MHz).

Id.

VI. CONCLUSION ON VIOLATION

For the reasons discussed herein, the Commission determines to: (1) modify Order No. 38's finding that Hytera's licensing defense is precluded by striking the first and second sentences of the fourth paragraph on page 8 in Order No. 38, striking the third sentence of the paragraph on page 9 beginning with "There is no analysis" and substituting "There is no analysis in Dr. Akl's Report", and striking the second sentence of the first full paragraph on page 9 in Order No. 38; (2) affirm Order No. 47's finding that certain Hytera expert testimony at the evidentiary hearing is stricken, and supplement and clarify its reasoning; (3) reverse the ALJ's finding that Hytera's accused redesigned products infringe claims 9 and 13-15 of the '284 patent under the doctrine of equivalents; (4) find that Hytera's redesigned products (*see supra*) do not infringe the '701, '869, or '991 patents; and (5) take no position on the ID's drawing of an adverse inference based on the former Motorola engineers' assertion of the Fifth Amendment

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privilege against self-incrimination. These actions result in a finding of a violation of section 337 with respect to the '991, '869, and '701 patents.

VII. REMEDY, THE PUBLIC INTEREST, AND BONDING

A. Relevant law

The Commission has broad discretion in selecting the form, scope, and extent of the remedy in a Section 337 proceeding. *See Viscofan, S.A. v. ITC*, 787 F.2d 544, 548 (Fed. Cir. 1986). The Commission may issue an LEO directed against only the infringing products that are found to be in violation. 19 U.S.C. § 1337(d). A CDO may be issued in addition to an exclusion order. 19 U.S.C. § 1337(f). The Commission generally issues a CDO directed to a domestic respondent when there is a “commercially significant” amount of infringing, imported product in the United States that could be sold so as to undercut the remedy provided by an exclusion order. *See, e.g., Certain Condensers, Parts Thereof and Products Containing Same, Including Air Conditioners for Automobiles*, Inv. No. 337-TA-334, Comm’n Op. at 26-28 (Aug. 27, 1997); *Certain Table Saws Incorporating Active Injury Mitigation Technology and Components Thereof (“Table Saws”)*, Inv. No. 337-TA-965, Comm’n Op. at 6-7 n.2 (Feb. 1, 2017) (public version). Even if a remedial order is issued by the Commission, during the interim 60-day period of Presidential review the affected articles may be imported and sold under bond. However, the amount of a bond must “be sufficient to protect complainant from any injury.” 19 U.S.C. § 1337(j)(3); 19 C.F.R. § 210.50(a)(3).

Based on the record in this investigation, and for the reasons detailed below, the Commission has determined to issue (1) an LEO prohibiting the unlicensed importation of

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certain two-way radio equipment and systems, related software and components thereof covered by one or more of the asserted claims of the '991, '869, or '701 patents; and (2) CDOs directed against Hytera America and Hytera Communications America with respect to these patents.¹⁰ We also find that these remedial orders are not contrary to the public interest and that covered products may be imported during the period of Presidential review at a bond amount of 44 percent of the entered value.

B. Analysis

1. Remedy

The RD recommends that if the Commission determines that there has been a violation of section 337 with respect to any of the asserted patents, an LEO should issue that prohibits the importation into the United States of infringing two-way radio equipment and systems, related software and components thereof. ID at 250-52. The RD also recommends the issuance of CDOs to prohibit the two domestic Hytera respondents from continuing to engage in unfair acts because the record evidence shows that these respondents maintain a sizeable and commercially significant inventory in the United States of its accused products. *Id.* at 252 (citing CX-789C.73-85; *Hardware Logic*, Comm'n Op., 1998 WL 307240, at *14 (Mar. 1998)).

The Commission finds that the proper remedy here is an LEO directed to Hytera's products that infringe the asserted claims of the '869, '991, or '701 patents, and a CDO directed against Hytera America and Hytera Communications America. The LEO does not include specific model numbers that have been determined not to infringe in accordance with long-

¹⁰ Motorola does not request a CDO directed against the foreign Hytera respondent.

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standing Commission precedent not to include model numbers. *See, e.g., Certain Optical Disk Controller Chips & Chipsets & Prod. Containing Same, Including DVD Players & PC Optical Storage Devices*, Inv. No. 337-TA-506, Comm'n Op., 2007 WL 4713920, at *64 (noting that the Commission's long-standing precedent has been to avoid model numbers in its exclusion orders). Rather, the specific non-infringing models are identified herein. *See supra*. The Commission notes that the parties do not dispute that CDOs directed to the domestic respondents are warranted here if a violation is found. We find that CDOs directed to the two domestic respondents, Hytera America and Hytera Communications America, are warranted because Motorola has shown evidence of significant commercial inventory held by these respondents, and Hytera does not dispute Motorola's evidence.¹¹ *See* ID at 252-53 (citing CX-789C.73-85); *Hardware Logic*, Comm'n Op., 1998 WL 307240, at *14.

2. Public Interest

Sections 337(d) and (f) of the Tariff Act of 1930, as amended, direct the Commission to consider certain public interest factors before issuing a remedy. These public interest factors include the effect of any remedial order on the "public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers." 19 U.S.C. §§ 1337(d), (f). The Commission noted in its notice of review that if it contemplates some form of remedy, it must the effects of

¹¹ Commissioner Schmidlein supports issuance of the CDOs in this investigation for reasons similar to those offered by her in previous investigations. *See, e.g., Table Saws*, Comm'n Op. at 6-7, n.2; *Certain Network Devices, Related Software and Components Thereof (I)*, Inv. No. 337-TA-944, Comm'n Op. at 56, n.20 (July 26, 2016) (public version). Specifically, she finds that the presence of some infringing domestic inventory, regardless of the commercial significance, provides a basis to issue CDOs in this investigation.

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that remedy upon the public interest and posed the following questions:

- (1) Please comment on the availability of similar products from suppliers other than Hytera or Motorola (including market share of these other sources) that can perform “mission-critical” two-way radio communication.
- (2) With respect to (1), please comment on whether such alternative suppliers also provide the same features that Hytera’s products provide (*e.g.*, unique pseudo trunking, noise cancellation, “man down” feature, “lone worker” feature) as well as whether Motorola’s products provide the same features as Hytera’s products. Also please address the interoperability of various suppliers’ products in two-way radio communication systems.
- (3) Please comment on the extent to which a distributor of Motorola two-way radio communication products must offer only Motorola products, or whether such a distributor can also offer two-way radio communication equipment and products from other suppliers.
- (4) Please comment on whether any potential exclusion order and/or cease and desist order should include a repair/service exception regarding service to existing Hytera two-way radio communications products that were sold prior to the effective date of any such order. If you advocate for such an exception, please address the appropriate parameters of such an exception, and provide proposed language.

We summarize the responses below:

- (1) Please comment on the availability of similar products from suppliers other than Hytera or Motorola (including market share of these other sources) that can perform “mission-critical” two-way radio communication.

Motorola’s Submission

Motorola submits that products similar to the accused products in this investigation are widely available from Motorola and other suppliers in the market, can be used for the same applications, and provide comparable features as the Hytera products. Motorola’s Sub. at 1.

Motorola submits that the infringing products at issue primarily consist of two-way radios and

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repeaters and related equipment that operate according to the DMR standard, and the hardware and software associated with those devices that also implement the proprietary, non-standardized features covered by the patents-in-suit. *Id.* Motorola submits that the DMR two-way radio market in the United States is highly competitive and that from the second quarter of 2016 to the first quarter of 2017, (1) Motorola had 69 percent of the total [[]] North American market; (2) Kenwood had approximately [[]] percent market share; (3) Hytera had 5 percent market share; (4) Icom America maintained approximately [[]] percent market share; and (5) other companies, including Harris/Tait, Tytera, Yaesu, Baofeng, Alinco, and Tera, make up the remainder of the market. *Id.* at 12-13 (citing CX-1202 C.15; Tr. (Arnold) at 787:22-788:16). Based on the foregoing, Motorola submits that, even after an LEO issues, Hytera's customers will continue to have uninterrupted access to DMR radio communications solutions from a plurality of other suppliers. *Id.* at 13 (citing *Certain Mobile Devices, Assoc. Software, & Components Thereof*, Inv. No. 337-TA-744, Comm'n Op. at 30 (June 5, 2012) (finding that when "numerous other sources" for similar products exist, exclusion "will not have a significant impact on competitive conditions.")).

Hytera's Submission

Hytera submits that it is not aware of a third-party entity with a measurable market share in the DMR two-way radio market. Hytera's Sub. at 2. Hytera submits that Kenwood and Harris/Tait supply the market, but Kenwood does not offer a comparable product range or offer its products "at a competitive price" and Harris/Tait "are not commercially viable alternatives to

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Hytera because both focus on niche customer applications and have not successfully competed with Motorola . . .” *Id.* (citing Nielson Commc’ns Stmt. at 2-3, Doc ID 652668). Hytera submits that the availability of other products in the market can be misleading due to the network effects of two-way radio systems. *Id.* Hytera submits that, for example, if one two-way radio in a system ceases to work, it would not be practicable to purchase a replacement radio from a competitor because of compatibility concerns. *Id.* Hytera also submits that, rather, a customer could only effectively use two-way radios from a different manufacturer if the customer purchased an entirely new system. *Id.*

Hytera Dealers’ Submission

The Hytera Dealers submit that there are several important features that are either unique to Hytera’s products or are not available at an affordable price level from a competing supplier. Hytera Dealers’ Sub. at 8. Accordingly, the Hytera Dealers submit that any limitation on Hytera Land Mobile Radio (“LMR”) products would reduce customer choice and price out customers who need these features in their LMR products to effectively provide for public health, safety, and welfare. *Id.*

Local Governmental Agencies’ Submission

The Local Governmental Agencies submit that local governments are under financial stress across the United States. Local Governmental Agencies’ Sub. at 3. They submit that they have evaluated DMR options available, and have purchased and installed Hytera radio systems because these systems provide reliable, high quality communications at an affordable price. *Id.* They submit that Motorola and Hytera are the closest substitutes to each other for the

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DMR solutions they need. *Id.* The Local Governmental Agencies submit that Motorola and Hytera have a very similar DMR product offering, but Hytera has allowed them to do more with less. *Id.*

- (2) With respect to (1), please comment on whether such alternative suppliers also provide the same features that Hytera's products provide (e.g., unique pseudo trunking, noise cancellation, "man down" feature, "lone worker" feature) as well as whether Motorola's products provide the same features as Hytera's products. Also please address the interoperability of various suppliers' products in two-way radio communication systems.

Motorola's Submission

Motorola submits that the suppliers in the DMR market provide products that comply with the relevant DMR standard at issue and therefore provide similar features to Hytera's. Motorola's Sub. at 16-17 (citing Ex. 6, Lopez Decl. 4). Motorola therefore submits that, while individual companies may add their own proprietary features to their DMR products, the underlying products will nonetheless be capable of interoperating through the use of the protocols defined in the DMR standard specification. *Id.* at 17 (citing Ex. 13, <https://hytera.co.uk/news/interoperability-between-dmr-manufacturers>). Motorola submits that, belying respondent's argument, Hytera itself touts that its products are designed to be "as interoperable as possible with other vendors' equipment." *Id.* (citing the same). Motorola also submits that the DMR Association, made up of member companies working in the DMR field, develops and carries out DMR interoperability testing to confirm compatibility between different manufacturers' DMR implementations. *Id.* (citing the same). Motorola submits that interoperability certificates are available on the DMR Association's website for DMR suppliers

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in the U.S. market, including Motorola, Hytera, Kenwood, and Harris/Tait. *Id.* (citing Ex. 14, <https://www.dmrassociation.org/iop-certificates-and-test-results.html>). Finally, Motorola submits that, contrary to letters received from Hytera's dealers contending that complainant does not support certain unique features, its products (as well as those of the above-identified competitors) support these same or analogous features, *e.g.*, pseudo trunking (Motorola's Capacity Plus feature), noise cancellation, "man down," "lone worker," etc. *Id.* at 17-19 (citing Exs. 15-23).

Hytera's Submission

Hytera submits that, as noted in its dealers' submissions on the public interest, Motorola's products do not provide many of the important features of Hytera's products. Hytera's Sub. at 2. Hytera further submits that the General Accounting Office ("GAO") recently described the problems from lack of interoperability in a report that noted the costs associated with switching suppliers which significantly burdens the public. *Id.* at 3 (citing GAO-17-12, Land Mobile Radio Interoperability and Procurement at 20-21).

Hytera Dealers' Submission

The Hytera Dealers submit that exemplary unique features of Hytera's DMR products that are not offered by competitors include the following: (1) a "lone worker" feature for light-staffed or graveyard shift workers and a "man-down" feature in cases of emergency where a person is alone and is incapacitated at a dangerous worksite; (2) a global positioning system ("GPS") feature, that when combined with the "man-down" feature, can send not only emergency alerts but also coordinates for rescues; (3) the best noise cancellation product in the

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market; (4) the current Atex and FM standards for IS (“intrinsically safe”) radios - radios that are used for communication in industries where there is a chance of explosion, fire, or any other hazardous environments; (5) XPT and Pseudo Trunk (an efficiency transmission protocol); and (6) a Patrol application allowing for indoor location of radio users. Hytera Dealers’ Submission at 8-13.

Local Governmental Agencies’ Submission

The Local Governmental Agencies submit that a unique feature Hytera’s DMR products offer is the seamless integration of GPS coordinates with the “lone-man” feature. Local Governmental Agencies’ Sub. at 5. They submit that while other radio brands may offer a lone-man (sometimes called “man-down”) feature, Hytera has innovative GPS integration. *Id.* They submit that the “man-down” features offered by other suppliers are helpful, but they understand that Hytera remains the only company to have a distress signal automatically coupled to GPS coordinates. *Id.* Accordingly, the Local Governmental Agencies submit that this is a critical public safety feature. *Id.*

- (3) Please comment on the extent to which a distributor of Motorola two-way radio communication products must offer only Motorola products, or whether such a distributor can also offer two-way radio communication equipment and products from other suppliers.

Motorola’s Submission

Motorola asserts that it does not mandate that any distributor or reseller of Motorola two-way radio communication products offer only Motorola products and they are free to offer two-way radio communication equipment and products from other suppliers. Motorola’s Sub. at 19

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(citing Ex. 24 (Adler Decl. 4)). Motorola points out that several of Motorola's partners in fact do offer other companies' two-way radio products for sale besides Motorola's. *Id.* (citing the same).

Hytera's Submission

Hytera contends that Motorola uses anticompetitive threats and misrepresentations to stop dealers from selling products that compete with Motorola, and submits that respondent's pending litigation against Motorola details information regarding Motorola's anticompetitive tactics. Hytera's Sub. at 4 (citing *Hytera Commc'ns Corp. v. Motorola Solutions Inc.*, Amended Complaint, Doc. 45, Civil Action No. 2:17-cv-12445 (ES/JAD) (D. N.J. 2017)). Hytera also submits that a class action suit alleging such harm has been filed against Motorola on behalf of a putative class of dealers. *Id.* (citing *Ramco Commc'ns, Inc. v. Motorola Solutions, Inc.*, Complaint, Doc. 1, Civil Action No. 2:17-cv-13522 (ES/JAD) (D. N.J. 2017)).

Hytera asserts that these cases allege that: (1) Motorola threatens to terminate distributors across the United States that offer alternative or competitive products; (2) Motorola threatens to terminate must-have service and maintenance contracts to force dealers into not carrying competing product lines; (3) Motorola has a longstanding "PartnerEmpower" program which binds distributors so as to only sell Motorola products; and (4) Motorola spreads false rumors and misinformation about Hytera to deter dealers from carry Hytera products. *Id.* (citing *Hytera Commc'ns Corp.*, Amended Complaint at ¶¶ 12-13, 17-19, 93-12, 138-159, 222; *Ramco Commc'ns*, Complaint at ¶¶ 7, 10, 89-125).

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- (4) Please comment on whether any potential exclusion order and/or cease and desist order should include a repair/service exception regarding service to existing Hytera two-way radio communications products that were sold prior to the effective date of any such order. If you advocate for such an exception, please address the appropriate parameters of such an exception, and provide proposed language.

Motorola's Submission

Motorola submits that any potential LEO or CDO should not include an exception to allow Hytera to continue repairing and servicing infringing products previously sold to Hytera's customers. Motorola's Sub. at 20. Motorola first submits that the ID found that the components of Hytera's products themselves indirectly infringe the asserted patents, so such a service/repair exception would be complicated to enforce. *Id.* Motorola then submits that Hytera fails to articulate any law or facts that would support such an exception under Commission precedent. *Id.* Motorola submits that the factors that the Commission has evaluated in considering requests for a service/repair exception include: (1) record evidence showing lack of availability of non-infringing products as substitutes for the infringing products; (2) record evidence, such as respondent's warranty obligations or customer contracts, showing that customers expect replacement or warranty parts be the same parts and not just comparable parts; (3) third-party customer submissions declaring they suffer detrimental effects in using alternative non-infringing parts in their systems as a result of the Commission's remedial orders; and (4) record evidence substantiating less than optimal performance or monetary costs associated with testing and utilizing alternative non-infringing parts. *Id.* (citing *Certain Optoelectronic Devices for Fiber Optic Communications, Components Thereof, and Products Containing the Same* ("Optoelectronic Devices"), 337-TA-860, Comm'n Op. at 31-34 (May 9,

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2014) (finding no basis for granting a service/repair exception under these factors)).

Motorola contends that the record evidence here is lacking for all four factors under *Optoelectronic Devices*. *Id.* at 20-21. Specifically, Motorola submits that, as discussed *supra*, record evidence shows the availability of non-infringing products as substitutes for Hytera's infringing products, including products that carry the same or analogous features. *Id.* at 21. Motorola further submits that Hytera has not addressed why its resellers could not service existing Hytera DMR products using non-infringing parts or that the terms of its warranty obligations prohibit such alternatives. *Id.*

Hytera's Submission

Hytera contends that any remedial order should include an exception for replacement, repair, and warranty parts. Hytera's Sub. at 5 (citing *Certain Liquid Crystal Display Devices and Prods. Containing the Same*, Inv. No. 337-TA-631, Comm'n Op. at 27 (July 14, 2009); *Certain Automated Mechanical Transmission Systems for Medium-Duty and Heavy-Duty Trucks and Components Thereof*, Inv. No. 337-TA-503, Comm'n Op. at 5-6 (May 9, 2005)). Hytera's Sub. at 5. Hytera submits that its customers have invested in systems that use Hytera products and therefore they should be allowed to continue using their existing systems. *Id.* (citing GAO-17-21).

Hytera Dealers' Submission

Hytera's Dealers submit that the public would be directly and irreparably harmed if it is

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denied the opportunity to continue receiving maintenance and repair services for existing Hytera DMR products. Hytera Dealers' Sub. at 19-20. They submit that customers regularly make add-on and repair/service orders. *Id.* at 20. Hytera's Dealers also submit that replacing a Hytera system with a competitor's system is not a viable option because (1) these competitors do not offer the same breadth of products and features offered by Hytera; (2) these competitor products are not affordable; and (3) competitors' products such as Motorola's have doubtful interoperability. *Id.* at 15, 20.

Local Governmental Agencies' Submission

The Local Governmental Agencies submit that it is essential for them to be able to have complete discretion to purchase (1) replacement Hytera radios for when radios necessarily get lost, damaged, and/or destroyed in the course of serving the public; or (2) additional Hytera radios for when expansion of inventory is necessary (*e.g.*, due to hiring new staff). Local Governmental Agencies' Submission at 4. They thus submit that they need the ability to turn to their Hytera dealer for uninterrupted repair and maintenance services, or additional radio service, when these needs arise. *Id.*

Analysis

Based on the record, including submissions from the parties and interested non-parties, the Commission finds that issuance of an LEO and CDOs in this case is not contrary to any of the public interest factors. The concerns expressed by the public interest submissions mainly relate to the availability of non-infringing alternative products (including products with specific features) and interoperability between products from various manufacturers.

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With respect to non-infringing alternative products, Motorola and Kenwood have significant U.S. market share (*i.e.*, 69 percent and [[]] percent respectively) and other suppliers also have appreciable market share, *e.g.*, Icom America with approximately [[]] percent of the market. *See* CX-1202C.15; Tr. (Arnold) at 787:22-788:16. In contrast, Hytera has only a 5 percent market share. *Id.* Moreover, given our non-infringement findings regarding the redesigned products, Hytera itself can continue to supply the market.

Regarding interoperability, Motorola provided well-supported evidence that the DMR radio technology at issue is subject to interoperability requirements that have been met by its products as well as by competitor products. The above-identified suppliers in the DMR market provide products that comply with the relevant DMR standard at issue and therefore provide similar features to Hytera's. Motorola's Sub. at 16-17 (citing Ex. 6, Lopez Decl. 4). Thus, while individual companies may add their own proprietary features to their DMR products, the underlying products will nonetheless be capable of interoperating through the use of the protocols defined in the DMR standard specification. *Id.* at 17 (citing Ex. 13, <https://hytera.co.uk/news/interoperability-between-dmr-manufacturers>). Moreover, the DMR Association, made up of member companies working in the DMR field, develops and carries out DMR interoperability testing to confirm compatibility between different manufacturers' DMR implementations. *Id.* (citing the same). Also, interoperability certificates are available on the DMR Association's website for DMR suppliers in the U.S. market, including Motorola, Hytera, Kenwood, and Harris/Tait. *Id.* (citing Ex. 14, <https://www.dmrassociation.org/iop-certificates-and-test-results.html>). And further, for example, an August 2012 interoperability certificate

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specifically tested (and confirmed) the interoperability of Motorola's repeater XPR8300, Motorola's mobile station XPR6550, Hytera's repeater RD982 (an accused product here) and Hytera's mobile station PD782 (an accused product here). Motorola's Reply at Ex. 35 (August 2012 Interoperability Certificate). The test results, which are available online, confirm that Motorola's and Hytera's devices were successfully able to conduct group and individual calls in repeater mode and direct mode. *Id.* at Ex. 36 (Jan. 2012 Test Summary). Hytera received similar certificates confirming interoperability with other competitors, including Kenwood and Tait/Harris. *Id.* at Exs. 37, 39 (Hytera-Tait/Harris Interoperability Certificates).¹²

The Commission finds that Hytera's contention that Motorola's products do not provide the important features found in Hytera's products is unsupported by its dealers' conclusory allegations. Rather, the record evidence shows that products from Motorola and other suppliers in the DMR market provide the same or analogous features that Hytera claims to be unique to its products. *See* Motorola's Sub. at 16-19. The Commission also notes that Hytera never claims that its products are in fact incompatible with Motorola's products (or other competitors' products) and evidence exists confirming that these products are indeed compatible. *Id.*

Further, we note that Commission precedent does not prohibit the issuance of an LEO or CDO solely because of the loss of one respondent's products from the market. *See Table Saws,*

¹² The 2016 GAO Report cited by Hytera is not specific to Motorola's DMR equipment and primarily assesses interoperability between government agencies. The record as a whole in this investigation indicates that any issues regarding potential lack of interoperability among different manufacturer's equipment are not significant enough to warrant not granting relief. The GAO report does briefly discuss at least perceived problems with interoperability among equipment (*e.g.*, pp. 11, 20-21).

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Comm'n Op. at 10. Also, higher prices for the same, or analogous, products has not been deemed a basis for prohibiting issuance of an LEO or CDO. *See Certain Crystalline Cefadroxil Monohydrate*, Inv. No. 337-TA-293, USITC Pub. No. 2391, Comm'n Op. at 44-47 (June 1991) (higher prices for drugs are not deemed a reason to deny an LEO or CDO).

In sum, the Commission, considering all public interest factors (*i.e.*, public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers), does not find they weigh against the issuance of the remedial orders in this investigation. The public interest concerns raised by Hytera, its dealers, and its customers primarily relate to the availability of non-infringing alternative products and interoperability between products from various manufacturers, but the record evidence, as discussed *supra*, shows that these issues do not significantly impact the public interest factors such that relief would be inappropriate.

Moreover, we do not find a service/repair exception appropriate here because the record evidence here is lacking for all four factors under *Optoelectronic Devices*. Rather, the record evidence shows the availability of non-infringing (as well as certified interoperable) products as substitutes for Hytera's infringing products, including products that carry the same or analogous features such as Hytera's own non-infringing redesigned products. And there has been no record evidence shown that the terms of any customer contract or warranty obligations prohibit such alternatives.

Accordingly, the Commission does not find that issuance of a remedy here is contrary to the public interest.

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3. Bonding

Section 337(j) provides for entry of infringing articles during the sixty (60) day period of Presidential review upon payment of a bond and states that the bond is to be set at a level “sufficient to protect the complainant from any injury.” 19 U.S.C. § 1337(j)(3); *see also* 19 C.F.R. § 210.50(a)(3). Complainant bears the burden of establishing the need for a bond amount in the first place. *Certain Rubber Antidegradants, Components Thereof, and Prods. Containing Same*, Inv. No. 337-TA-533, Comm’n Op. at 39-40 (July 21, 2006).

Before the ALJ, Motorola argued for a 44 percent bond, providing well-supported expert testimony and documentary evidence to support a “lost profits” analysis that accurately captures the injury caused to Motorola by Hytera’s importation of infringing products. *See* Tr. (Arnold) at 786:12-789:7 (citing CX-1612C; CX-1200C-1202C; CX-1204C). The RD recommends a bond of 44 percent based on this argument. RD at 254-57 (citing Tr. (Arnold) at 786:12-789:12).

Hytera argues that the Commission should not use a “lost profits” analysis here, because it has only used such a methodology in bond forfeiture proceedings. *See* Hytera’s Sub. at 9-10. Hytera also submits that the Commission has rejected a “lost profits” analysis in calculating a bond. *Id.* at 9 (citing *Hardware Logic*, Comm’n Op. at 41).

The Commission in *Hardware Logic* did not articulate a rule that lost profits analyses are barred. Rather, the Commission actually used the percentage of lost gross revenue that the complainant would have rolled back into its research and development efforts as one component of the bond rate it ultimately imposed. *Hardware Logic*, Comm’n Op. at 13 (Oct. 15, 1996); *see*

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also Hardware Logic, Comm'n Op. at 40. Moreover, the "lost profit" analysis that the Commission has used in bond forfeiture proceedings is equally applicable to the remedy determination here because, in both cases, the bond amount seeks to protect the complainant from injury. See *Certain Lens-Fitted Film Packages*, Inv. No. 337-TA-406, Initial Determination (relevant portion unreviewed), 2003 WL 21690959, at *7 (May 29, 2003) ("[T]he [ALJ] finds that the bond at issue is analogous to bonds posted under 19 U.S.C. § 1337(j)(3), wherein the purpose of the bond is 'to protect the complainant from any injury' during the Presidential review period and should be treated in the same manner as those bonds posted under 19 U.S.C. § 1337(j)(3)) (emphasis added). Although Hytera submits that "irrelevant products" are captured by such an analysis, respondent (1) did not dispute the sales figures before the ALJ; and (2) made no attempt to provide modified sales numbers to the Commission that exclude the "irrelevant" product sales despite Motorola's expert's statement that "if Hytera sales are known or better estimatable at the time that the presidential review period commences, then I recommend that the bond be 44 percent of the [better] estimate of Hytera's sales during the presidential review period." See Tr. (Arnold) at 789:1-5.

Thus, the Commission sets a bond in the amount of 44 percent of the entered value of the infringing products during the period of Presidential review.

VIII. CONCLUSION

The Commission has determined that there has been a violation of section 337. Having considered the ALJ's recommended determination, the parties' submissions, and the evidentiary record, the Commission has determined to (1) issue an LEO prohibiting the

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unlicensed entry of two-way radio equipment and systems, related software and components thereof that infringe one or more of the asserted claims of the '991, '869, or '701 patents; and (2) issue CDOs directed against Hytera America and Hytera Communications America with respect to these claims. The Commission further has determined that the public interest factors enumerated in sections 337(d)(1), (f)(1) (19 U.S.C. §§ 1337(d)(1), (f)(1)) do not preclude the issuance of the LEO or CDOs. Finally, the Commission has determined that there should be a bond in the amount of 44 percent of the entered value of the covered products during the period of Presidential review.

By order of the Commission.



Lisa R. Barton
Secretary to the Commission

Issued: December 18, 2018

**CERTAIN TWO-WAY RADIO EQUIPMENT AND
SYSTEMS, RELATED SOFTWARE AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1053

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **COMMISSION OPINION** has been served upon the following parties as indicated, on 12/18/2018 .



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant Motorola Solution, Inc.:

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- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

**On Behalf of Respondents Hytera Communications Corp.
Ltd., Hytera America, Inc., and Hytera Communications
America (West) Inc.:**

E. Robert Yoches
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- Via Express Delivery
- Via First Class Mail
- Other: _____

**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.**

In the Matter of

**CERTAIN TWO-WAY RADIO
EQUIPMENT AND SYSTEMS,
RELATED SOFTWARE AND
COMPONENTS THEREOF**

Investigation No. 337-TA-1053

**NOTICE OF A COMMISSION DETERMINATION TO REVIEW IN PART AN INITIAL
DETERMINATION FINDING A VIOLATION OF SECTION 337 AND ORDER NOS. 38
AND 47; TO REQUEST WRITTEN SUBMISSIONS ON REMEDY, BONDING, AND
THE PUBLIC INTEREST; AND TO EXTEND THE TARGET DATE**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined to review-in-part a final initial determination (“ID”) of the presiding administrative law judge (“ALJ”) finding a violation of section 337 and the ALJ’s Order Nos. 38 and 47. The Commission is requesting written submissions on remedy, bonding, and the public interest including submissions in response to certain questions directed to the public interest. The Commission has also extended the target date for completion of the investigation to November 16, 2018.

FOR FURTHER INFORMATION CONTACT: Clint Gerdine, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, SW., Washington, D.C. 20436, telephone (202) 708-2310. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, SW., Washington, D.C. 20436, telephone (202) 205-2000. General information concerning the Commission may also be obtained by accessing its Internet server at <https://www.usitc.gov>. The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at <https://edis.usitc.gov>. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission’s TDD terminal on (202) 205-1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on May 3, 2017, based on a complaint filed on behalf of Motorola Solutions, Inc. (“Motorola”) of Chicago, Illinois. 82 FR 20635-36. The complaint alleged violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337, by reason of infringement of certain claims of the ’284 patent and the following U.S. Patent Nos.: 7,369,869 (“the ’869 patent”); 7,729,701 (“the ’701 patent”); 8,279,991 (“the ’991 patent”); 9,099,972; 8,032,169; and 6,591,111. The Commission’s notice of investigation named Hytera Communications Corp. Ltd. of Shenzhen, China; Hytera America, Inc. of Miramar, Florida; and Hytera Communications America (West), Inc. of Irvine, California as respondents (collectively, “Hytera”). The Office of Unfair Import Investigations is not participating in the investigation. *Id.*

On September 18, 2017, the Commission issued notice of its determination not to review the ALJ’s ID (Order No. 10) terminating the investigation as to: (1) claims 2, 5, 10, and 16 of the ’284 patent; (2) claims 2-3, 8, 12, 14-15, 20, 22-24, and 30 of the ’169 patent; (3) claims 5, 8, 11-14, 18, and 22 of the ’869 patent; (4) claims 3, 5, 8-10, 15, and 17-18 of the ’701 patent; (5) claim 3 of the ’972 patent; and (6) claims 3-5, 8-10, and 14 of the ’111 patent. On October 17, 2017, the Commission issued notice of its determination not to review the ALJ’s ID (Order No. 16) terminating the investigation as to claim 10 of the ’869 patent. On November 14, 2017, the Commission issued notice of its determination not to review the ALJ’s ID (Order No. 19) terminating the investigation as to: (1) claims 1, 4, 12, and 18 of the ’284 patent”; (2) claims 4, 13, 16, and 25 of the ’169 patent; (3) claims 3-4, 9, 19-20, and 23-24 of the ’869 patent; (4) claims 2, 4, and 14 of the ’701 patent; (5) claims 4 and 8 of the ’972 patent; (6) claims 6 and 12 of the ’111 patent; and (7) claim 19 of the ’991 patent for the purposes of satisfying the technical prong of the domestic industry requirement.

On December 4, 2017, the Commission issued notice of its determination not to review the ALJ’s ID (Order No. 21) terminating the investigation as to claims 5 and 18 of the ’169 patent. On January 3, 2018, the Commission issued notice of its determination not to review the ALJ’s ID (Order No. 23) terminating the investigation as to: (1) the ’111 and ’169 patents; (2) claims 2 and 7 of the ’869 patent; and (3) claims 7-8 and 19 of the ’284 patent. On the same date, the Commission issued notice of its determination not to review the ALJ’s ID (Order No. 24) terminating the investigation as to claim 1 of the ’701 patent. On February 6, 2018, the Commission issued notice of its determination not to review the ALJ’s ID (Order No. 31) terminating the investigation as to the following patent claims: (1) claim 13 of the ’701 patent; (2) claim 6 of the ’284 patent; and (3) claim 1 of the ’972 patent. On February 26, 2018, the Commission issued notice of its determination not to review the ALJ’s ID (Order No. 40) terminating the investigation as to the ’972 patent.

On January 26, 2018, the ALJ issued Order No. 38 which granted Motorola’s motion *in limine* to preclude Hytera’s licensing defense. On May 18, 2018, the ALJ issued Order No. 47 which granted-in-part Motorola’s motion to strike certain portions of Hytera’s expert testimony at the evidentiary hearing. On July 3, 2018, the ALJ issued her final ID and recommended

determination (RD) on remedy and bonding in one document. The ID finds that Hytera's accused products infringe claims 1, 6, 17, and 21 of the '869 patent; claims 1 and 11 of the '701 patent; and claims 7-8 of the '991 patent. The ID also finds that Hytera's accused legacy products literally infringe claims 9 and 13-15 of the '284 patent and that Hytera's accused redesigned products infringe these claims under the doctrine of equivalents. The ID also finds that Hytera induced infringement of and contributorily infringed all of the claims of the asserted patents. As part of the ID's finding of indirect infringement, the ID applied an adverse inference against Hytera for certain of its witnesses' invocation of their Fifth Amendment right against self-incrimination. The ID also finds that Motorola satisfies the domestic industry requirement with respect to the '869, '701, and '991 patents, but that its domestic products do not satisfy the technical prong of the domestic industry requirement with respect to the '284 patent. Accordingly, the ID finds a violation of section 337 with respect to the '869, '701, and '991 patents. The RD recommended the issuance of limited exclusion orders directed against Hytera's infringing products and cease and desist orders directed against Hytera.

On July 17, 2018, Motorola and Hytera petitioned for review of the final ID. Hytera's petition for review included a petition for review of Order No. 47. On July 25, 2018, Motorola and Hytera each filed a response in opposition to the other party's petition for review. On August 6 and 7, 2018, respectively, Hytera and Motorola filed statements on the public interest. On August 10, 2018, the Commission received statements on the public interest from the general public.

Having examined the record of this investigation, including the ID, related Orders including Order Nos. 38 and 47, the parties' petitions for review, and the responses thereto, the Commission has determined to review-in-part the final ID and Order Nos. 38 and 47. Specifically, the Commission has determined to review (1) Order No. 38's finding that Hytera's licensing defense is precluded; (2) Order No. 47's finding that certain expert testimony from Hytera at the evidentiary hearing is stricken; (3) the ID's finding that Hytera's accused redesigned products infringe claims 9 and 13-15 of the '284 patent under the doctrine of equivalents; (4) the ID's application of an adverse inference against Hytera as part of the finding of indirect infringement; and (5) the ID's finding that insufficient record evidence exists to make a conclusive determination as to whether any redesigned products infringe the '701 patent and ID's lack of an express finding on this issue with respect to the '869 or '991 patent. The Commission has determined not to review the remainder of the final ID. The Commission has also extended the target date for completion of the investigation to November 16, 2018.

On review, with respect to violation, the parties are requested to submit briefing limited to the following issues:

- (1) Are the redesigned products that allegedly infringe the '284 patent the same as the redesigned products alleged to infringe the '701, '869, and '991 patents? If not, how do the products differ?

- (2) Please discuss which specific redesigned products are sufficiently fixed and final to be properly within the scope of the investigation, and whether each such product has been imported into the United States. *See, e.g., Certain Multiple Mode Outdoor Grills and Parts Thereof*, Inv. No. 337-TA-895, Comm'n Op. at 50-55 (Feb. 3, 2015).
- (3) Discuss the extent to which Hytera produced information regarding each such redesign prior to the close of fact discovery.
- (4) As to each asserted patent, discuss whether Motorola presented evidence at the hearing to prove infringement of each redesigned product.

In addressing these issues, the parties are requested to make specific reference to the evidentiary record and to cite relevant authority.

In connection with the final disposition of this investigation, the Commission may (1) issue an order that results in the exclusion of the subject articles from entry into the United States, and/or (2) issue one or more cease and desist orders that could result in the respective respondent being required to cease and desist from engaging in unfair acts in the importation and sale of such articles. Accordingly, the Commission is interested in receiving written submissions that address the form of remedy, if any, that should be ordered. If a party seeks exclusion of an article from entry into the United States for purposes other than entry for consumption, the party should so indicate and provide information establishing that activities involving other types of entry either are adversely affecting it or likely to do so. For background, *see In the Matter of Certain Devices for Connecting Computers via Telephone Lines*, Inv. No. 337-TA-360, USITC Pub. No. 2843 (December 1994) (Commission Opinion).

When the Commission contemplates some form of remedy, it must consider the effects of that remedy upon the public interest. The factors the Commission will consider include the effect that an exclusion order and/or cease and desist orders would have on (1) the public health and welfare, (2) competitive conditions in the U.S. economy, (3) U.S. production of articles that are like or directly competitive with those that are subject to investigation, and (4) U.S. consumers. The Commission is therefore interested in receiving written submissions that address the aforementioned public interest factors in the context of this investigation.

When the Commission orders some form of remedy, the U.S. Trade Representative, as delegated by the President, has 60 days to approve or disapprove the Commission's action. *See* section 337(j), 19 U.S.C. § 1337(j) and the Presidential Memorandum of July 21, 2005. *70 Fed. Reg.* 43251 (July 26, 2005). During this period, the subject articles would be entitled to enter the United States under bond, in an amount determined by the Commission. The Commission is therefore interested in receiving submissions concerning the amount of the bond that should be imposed if a remedy is ordered.

WRITTEN SUBMISSIONS: Parties to the investigation, interested government agencies, and any other interested parties are encouraged to file written submissions on the issues of remedy, the public interest, and bonding, and such submissions should address the recommended determination by the ALJ on remedy and bonding. Complainant is also requested to submit proposed remedial orders for the Commission's consideration. Complainant is also requested to: (1) state the dates that the patents at issue expire and the HTSUS numbers under which the accused articles are imported; and (2) supply a list of known importers of the accused products. Also specifically, with respect to the public interest, the Commission requests briefing on the following issues:

- (1) Please comment on the availability of similar products from suppliers other than Hytera or Motorola (including market share of these other sources) that can perform "mission-critical" two-way radio communication.
- (2) With respect to (1), please comment on whether such alternative suppliers also provide the same features that Hytera's products provide (*e.g.*, unique pseudo trunking, noise cancellation, "man down" feature, "lone worker" feature) as well as whether Motorola's products provide the same features as Hytera's products. Also please address the interoperability of various suppliers' products in two-way radio communication systems.
- (3) Please comment on the extent to which a distributor of Motorola two-way radio communication products must offer only Motorola products, or whether such a distributor can also offer two-way radio communication equipment and products from other suppliers.
- (4) Please comment on whether any potential exclusion order and/or cease and desist order should include a repair/service exception regarding service to existing Hytera two-way radio communications products that were sold prior to the effective date of any such order. If you advocate for such an exception, please address the appropriate parameters of such an exception, and provide proposed language.

The written submissions and proposed remedial orders must be filed no later than September 18, 2018. Reply submissions must be filed no later than September 25, 2018. No further submissions on these issues will be permitted unless otherwise ordered by the Commission. In addressing the issues on violation, the parties are limited to 25 pages for the initial submission and 15 pages for the reply submission.

Persons filing written submissions must file the original document electronically on or before the deadlines stated above and submit eight true paper copies to the Office of the Secretary by noon the next day pursuant to section 210.4(f) of the Commission's Rules of

Practice and Procedure (19 C.F.R. § 210.4(f)). Submissions should refer to the investigation number (“Inv. No. 337-TA-1053”) in a prominent place on the cover page and/or the first page. (See Handbook for Electronic Filing Procedures, http://www.usitc.gov/secretary/fed_reg_notices/rules/handbook_on_electronic_filing.pdf). Persons with questions regarding filing should contact the Secretary (202-205-2000).

Any person desiring to submit a document to the Commission in confidence must request confidential treatment. All such requests should be directed to the Secretary of the Commission and must include a full statement of the reasons why the Commission should grant such treatment. See 19 C.F.R. § 201.6. Documents for which confidential treatment by the Commission is properly sought will be treated accordingly. A redacted non-confidential version of the document must also be filed simultaneously with any confidential filing. All information, including confidential business information and documents for which confidential treatment is properly sought, submitted to the Commission for purposes of this Investigation may be disclosed to and used: (i) by the Commission, its employees and Offices, and contract personnel (a) for developing or maintaining the records of this or a related proceeding, or (b) in internal investigations, audits, reviews, and evaluations relating to the programs, personnel, and operations of the Commission including under 5 U.S.C. Appendix 3; or (ii) by U.S. government employees and contract personnel¹, solely for cybersecurity purposes. All non-confidential written submissions will be available for public inspection at the Office of the Secretary.

The authority for the Commission’s determination is contained in section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337, and in part 210 of the Commission’s Rules of Practice and Procedure, 19 CFR part 210.

By order of the Commission.



Lisa R. Barton
Secretary to the Commission

Issued: September 4, 2018

¹ All contract personnel will sign appropriate nondisclosure agreements.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

**CERTAIN TWO-WAY RADIO
EQUIPMENT AND SYSTEMS, RELATED
SOFTWARE AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1053

**INITIAL DETERMINATION ON VIOLATION OF SECTION 337 AND
RECOMMENDED DETERMINATION ON REMEDY AND BOND**

Administrative Law Judge MaryJoan McNamara

(July 3, 2018)

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SELECTED SUMMARY FINDINGS

Pursuant to the Notice of Investigation, 82 Fed. Reg. 20635, dated May 3, 2017, this is the Initial Determination (“ID”) of the Investigation in the Matter of Certain Two-Way Radio Equipment and Systems, Related Software and Components Thereof, United States International Trade Commission Investigation No. 337-TA-1053. *See* 19 C.F.R. § 210.42(a).

It is a finding of this ID that Complainant Motorola Solutions, Inc. (“Complainant” or “Motorola”) has proven by a preponderance of evidence that Respondents Hytera Communications Corp. Ltd., Hytera America, Inc., and Hytera Communications America (West), Inc. (collectively, “Respondents” or “Hytera”) have violated subsection (b) of Section 337 of the Tariff Act of 1930, in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain two-way radio equipment and systems, related software and components thereof.

It is a finding of this ID that Hytera has infringed asserted claims 9, 13, 14, and 15 of U.S. Patent No. 8,116,284 (“the ’284 patent”). It is also a finding of this ID that Hytera has infringed asserted claims 1, 6, 17, and 21 of U.S. Patent No. 7,369,869 (“the ’869 patent”). Additionally, it is a finding of this ID that Hytera has infringed asserted claims 1 and 11 of U.S. Patent No. 7,729,701 (“the ’701 patent”). Moreover, it is a finding of this ID that Hytera has infringed asserted claims 7 and 8 of U.S. Patent No. 8,279,991 (“the ’991 patent”).

It is finding of this ID that Hytera has not proven by clear and convincing evidence that any of the asserted claims are invalid under 35 U.S.C. § 102 as anticipated and/or under 35 U.S.C. § 103 as obvious.

It is a finding of this ID that one or more of Motorola’s domestic industry products have satisfied the technical industry prong of the domestic industry requirement for the ’869, ’701,

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and '991 patents. It is also a finding of this ID that Motorola has not satisfied the technical prong of the domestic requirement for the '284 patent.

It is a finding of this ID that Motorola has satisfied the economic prong of the domestic industry requirement under Section 337(a)(3)(A), (B), and/or (C).

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APPENDICES

Appendix A: Accused Products

Appendix B: DI Products

ABBREVIATIONS

The following shorthand references to the parties and related U.S. agencies are used in this Initial Determination:

Complainant or Motorola	Complainant Motorola Solutions, Inc.
Respondents or Hytera	Respondents Hytera Communications Corp. Ltd., Hytera America, Inc., and Hytera Communications America (West), Inc., collectively
CBP	U.S. Customs and Border Protection
PTO	U.S. Patent and Trademark Office
PTAB	Patent Trial and Appeal Board of the PTO

The following abbreviations for pleadings, exhibits, briefs, transcripts, and Orders are used in this Initial Determination:

Compl.	Complaint
Resp.	Response of Respondents to the Notice of Investigation and Complaint Under Section 337 of the Tariff Act of 1930, as Amended
CX	Complainant's exhibit
CDX	Complainant's demonstrative exhibit
CPX	Complainant's physical exhibit
CPBr.	Complainant's Pre-Hearing Brief
CBr.	Complainant's Initial Post-Hearing Brief
CRBr.	Complainant's Post-Hearing Reply Brief
CPSt.	Complainant's Pre-Hearing Statement

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JX	Joint exhibit
RX	Respondents' exhibit
RDX	Respondents' demonstrative exhibit
RPX	Respondents' physical exhibit
RPBr.	Respondents' Pre-Hearing Brief
RBr.	Respondents' Initial Post-Hearing Brief
RRBr.	Respondents' Post-Hearing Reply Brief
RPSt.	Respondents' Pre-Hearing Statement
Tr.	Evidentiary hearing transcript
Dep. Tr.	Deposition transcript
Joint CC Chart	Second Corrected Joint Claim Construction Chart (Doc. ID No. 630908 (Dec. 7, 2017))
Comp'l Claim Br.	Complainant's Claim Construction Brief
Res'pts Claim Br.	Respondents' Claim Construction Brief
Markman Hearing Tr.	Transcript from October 4, 2017 <i>Markman</i> hearing (Doc. ID No. 624992 (Oct. 6, 2017))
Markman Order	Order No. 25 (Dec. 29, 2017)

The following abbreviations for technical terms are used in this Initial Determination:

ASIC	Application specific integrated circuit
BR	Base radio
BS	Base station, or "repeater"
CACH	Common Announcement Channel

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DMR	Digital mobile radio
ETSI-DMR	European Telecommunications Standard Institute – Digital Mobile Radio
ETSI-DMR Standard	ETSI TS 102 361-1
FEC	Forward error correction
IC	Integrated circuit
LC	Link control
MS	Mobile station
PT-DMO	Pseudo Trunk Direct Mode
PT-RMO	Pseudo Trunk Repeater Mode
RF	Radio frequency
SARQ	Selective Automatic Repeat Request
SU	Subscriber unit
SUID	Subscriber unit identifier
TC	TDMA channel
TDD	Time division duplex
TDMA	Time division multiple access
TGID	Talkgroup identifier
XTP	eXtended Pseudo Trunking Mode

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The following shorthand references to certain products and patents at issue in this are used in this Initial Determination:

'284 patent	U.S. Patent No. 8,116,284
'869 patent	U.S. Patent No. 7,369,869
'701 patent	U.S. Patent No. 7,729,701
'991 patent	U.S. Patent No. 8,279,991
Asserted Patents	'284, '869, '701 and '991 patents, collectively
'284 Legacy Products	RD622, RD622i, RD982, RD982i, RD982S, RD982Si, MD652, MD652i, MD782, MD782i, BD302, BD502, PD362, PD412, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, X1e, X1p
'284 Redesigned Products	PD502i, PD562i, PD602i, PD662i, PD682i, PD702i, PD752i, PD782i, PD792i, PD982i
'284 Accused Products	'284 Legacy Products and '284 Redesigned Products, collectively
'869 Accused Products	MD652, MD782, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, RD622, RD982, X1e, X1p
'701 Accused Products	RD622, RD982, MD652, MD782, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, X1e, X1p
'991 Accused Products	MD652, MD782, BD302, BD502, BD362, PD412, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, X1e, X1p
Accused Products	'284 Accused Products, '869 Accused Products, '701 Accused Products, and '991 Accused Products, collectively ¹

¹ In its list of Accused Products, Motorola included “all variants thereof.” (*See, e.g.*, CPBr. at x-xi.). This ID does not address any such “variants,” since Motorola never specifically identified them by model name or number.

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- '284 DI Products** MOTOTRBO Base Stations (including XPR 8380; MTR3000; XPR 8400; SLR 5000 Series; SLR 8000)² and MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series)
- '869 DI Products** MOTOTRBO Base Stations (including XPR 8380; MTR3000; XPR 8400; SLR 5000 Series) and MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series)
- '701 DI Products** MOTOTRBO Base Stations (including XPR 8380; MTR3000; XPR 8400; SLR 5000 Series) and MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series)
- '991 DI Products** MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series)

² With respect to the '701 patent, Motorola stated in its Initial Post-Hearing Brief that the SLR8000 series was “inadvertently omitted from Dr. Wicker’s slide identifying Motorola’s domestic industry products. Like the other repeaters identified, the SLR 8000 series is a MOTOTRBO repeater (*see* CX-0963C), and “Motorola’s Thomas Bohn . . . explained that all Motorola’s repeaters practiced the quick re-keying method described in the '701 patent.” (CBr. at 49 n.10 (citing Tr. (Bohn) at 119:17-120:2).). In that same footnote, Motorola also noted that its technical requirements specification confirms that the repeater is programmed with the '701 functionality. (*Id.* (citing CX-1011C.222-224).).

While Hytera may not have contested that the SLR 8000 series of repeaters are included in Motorola’s DI products (CBr. 49 n.10), to be consistent and even-handed with the Parties, this decision is treating Motorola’s omission of the SLR 8000 series information from Dr. Wicker’s testimony, as Motorola describes it, as deemed waived under Ground Rule 10.1.

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DI Products

'284 DI Products, '869 DI Products, '701 DI Products, and '991 DI Products, collectively

I. INITIAL DETERMINATION ON VIOLATION OF SECTION 337, AND RECOMMENDED DETERMINATION ON REMEDY AND BOND

A. Summary of Findings

A summary of this decision’s finding is summarized below.

Chart No. 1: Summary of Findings

Product	Patent	Claims	Determination
'284 Accused Products	'284 patent	9, 13, 14, and 15	<i>No violation (claims 9, 13, 14, and 15):</i> Claims 9, 13, 14, and 15 are valid and infringed by the '284 Legacy and Redesigned Products. However, the '284 DI Products do not satisfy the technical prong of the DI requirement.
'869 Accused Products	'869 patent	1, 6, 17, and 21	<i>Violation (claims 1, 6, 17, and 21):</i> Claims 1, 6, 17, and 21 are infringed by the '869 Accused Products.
'701 Accused Products	'701 patent	1 and 11	<i>Violation (claims 1 and 11):</i> Claims 1 and 11 are infringed by the '701 Accused Products.
'991 Accused Products	'991 patent	7 and 8	<i>Violation (7 and 8):</i> Claims 7 and 8 are infringed by the '991 Accused Products.
DI Products	All Asserted Patents		<i>Satisfied.</i> Motorola’s domestic R&D activities with respect

Product	Patent	Claims	Determination
			to its '869, '701, and '991 DI Products satisfy the domestic industry requirement set forth in 19 U.S.C. § 337(a)(3)(A), (B), and/or (C).

II. BACKGROUND

A. Institution and Selected Procedural History

On March 29, 2017, Motorola Solutions, Inc. filed a complaint under Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, (“Complaint”) alleging infringement of certain claims of U.S. Patent No. 8,116,284 (JX-0001, hereafter “the ’284 patent”); U.S. Patent No. 7,369,869 (JX-0005, hereafter “the ’869 patent”); U.S. Patent No. 7,729,701 (JX-0007, hereafter “the ’701 patent”); U.S. Patent No. 8,279,991 (JX-0009, hereafter “the ’991 patent”); U.S. Patent No. 9,099,972 (hereafter “the ’972 patent”); U.S. Patent No. 8,032,169 (hereafter “the ’169 patent”); and U.S. Patent No. 6,591,111 (hereafter “the ’111 patent”). (*See, e.g.*, Compl. at ¶¶ 1, 5; Doc. ID No. 606905 (Mar. 29, 2017)).

The Commission instituted this Investigation pursuant to subsection (b) of Section 337 of the Tariff Act of 1930, as amended, to determine:

whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain two-way radio equipment and systems, related software and components thereof by reason of infringement of one or more of claims 1, 2, 4-10, 12-16, 18, and 19 of the ’284 patent; claims 1-5, 7, 8, 10, 12-16, 18, 20-25, 27, 29, and 30 of the ’169 patent; claims 1-14, and 17-24 of the ’869 patent; claims 1-5, 8-15, 17, and 18 of the ’701 patent; claims 7 and 8 of the ’991 patent; claims 1, 3, 4, and 6-8 of the ’972 patent; and claims 1 and 3-16 of the ’111 patent, and whether an industry in the United States exists as required by subsection (a)(2) of section 337[.]

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82 Fed. Reg. 20636 (May 3, 2017).

The Notice of Investigation (“NOI”) names Motorola Solutions, Inc. of Chicago, Illinois as complainant (“Complainant” or “Motorola”). *See id.* The NOI names Hytera Communications Corp. Ltd. of Shenzhen, China; Hytera America, Inc. of Miramar, Florida; and Hytera Communications America (West), Inc. of Irvine, California as respondents (“Respondents” or “Hytera,” and with Complainant or Motorola, the “Parties”). *Id.*

On May 26, 2017, Hytera filed a response to the Complaint and NOI (“Response”). (Doc. ID No. 612893 (May 26, 2017)). In the Response, Hytera identified five (5) affirmative defenses (“Respondents’ Affirmative Defenses”). (Resp. at 18-20.).

On August 25, 2017, an ID issued granting Motorola’s first partial termination of this Investigation against Hytera with respect to: (i) claims 2, 5, 10, and 16 of the ’284 patent; (ii) claims 2, 3, 8, 12, 14, 15, 20, 22-24, and 30 of the ’169 patent; (iii) claims 5, 8, 11-14, 18, and 22 of the ’869 patent; (iv) claims 3, 5, 8-10, 15, 17, and 18 of the ’701 patent; (v) claim 3 of the ’972; and (vi) claims 3, 4, 5, 8-10, and 14 of the ’111 patent. (Order No. 10 (Aug. 25, 2017)). The Commission determined not to review the ID. (Doc. ID No. 623266 (Sept. 18, 2017)). On October 2, 2017, an ID issued granting Motorola’s second partial termination of this Investigation against Hytera with respect to claim 10 of the ’869 patent. (Order No. 16 (Oct. 2, 2017)). The Commission determined not to review the ID. (Doc. ID No. 625862 (Oct. 17, 2017)).

On October 24, 2017, an ID was issued granting Motorola’s third partial termination of this Investigation against Hytera as to: (i) claims 1, 4, 12 and 18 of the ’284 patent; (ii) claims 4, 13, 16 and 25 of the ’169 patent; (iii) claims 3, 4, 9, 19, 20, 23 and 24 of the ’869 patent; (iv) claims 2, 4 and 14 of the ’701 patent; (v) claims 4 and 8 of the ’972 patent; and (vi) claims 6 and 12 of the ’111 patent. (Order No. 19 (Oct. 24, 2017)). On November 8, 2017, an ID issued

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granting Motorola's fourth partial termination of this Investigation against Hytera as to claims 5 and 18 of the '169 patent. (Order No. 21 (Nov. 8, 2017)). On December 6, 2017 and December 7, 2017, ID issued granting Motorola's fifth and sixth partial termination of this Investigation against Hytera, respectively, as to: (i) claims 2 and 7 of the '869 patent; (ii) claims 7, 8, and 19 of the '284 patent; and (iii) claim 12 of the '701 patent. (Order Nos. 23 (Dec. 6, 2017), 24 (Dec. 7, 2017)). On January 12, 2018, an ID issued granting Motorola's seventh partial termination of this Investigation against Hytera as to claim 13 of the '701 patent, claim 6 of the '284 patent, and claim 1 of the '972 patent. (Order No. 31 (Jan. 12, 2018)). On January 31, 2018, an ID issued granting Motorola's eighth and final partial termination of this Investigation against Hytera as to the '972 patent. (Order No. 40 (Jan. 31, 2018)). The Commission determined not to review the IDs granting Motorola's third, fourth, fifth, sixth, seventh, and eighth partial terminations. (Doc. ID Nos. 628803 (Nov. 14, 2017), 630515 (Dec. 4, 2017), 632900 (Jan. 3, 2018), 632915 (Jan. 3, 2018), 635661 (Feb. 6, 2018), 637507 (Feb. 26, 2018)).

Following the termination of the '972 patent, the Asserted Patents and claims remaining that are the subject of this decision are: (i) claims 9, 13, 14, and 15 of the '284 patent; (ii) claims 1, 6, 17, and 21 of the '869 patent; (iii) claims 1 and 11 of the '701 patent; and (iv) claims 7 and 8 of the '991 patent.

On October 4, 2017, a *Markman* hearing and a technical tutorial were held. (Doc. ID No. 624992 (Oct. 6, 2017)).

On December 29, 2017, an Order construing the disputed claim terms and defining the level of ordinary skill in the art issued. (*See Markman* Order.).

On January 5, 2018, Motorola filed two (2) motions *in limine* ("MIL") in one omnibus motion. (Motion Docket No. 1053-026 (Jan. 5, 2018)). Hytera filed two (2) MILs (Motion

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Docket Nos. 1053-025 and 1053-027) and four (4) high-priority objections (“HPO”) (Doc. ID No. 633104 (Jan. 5, 2018)).

On January 26, 2018, an Order setting forth the rulings on Motorola’s MILs was issued. (Order No. 38 (Jan. 26, 2018)). Motorola’s MILs, and the rulings on these motions, are summarized in Chart No. 2 below.

Chart No. 2: Motorola’s MILs

MIL No.	Issue	Ruling
MIL No. 1 ³	Complainant’s Motion to Preclude Arguments, Testimony, and Exhibits Relating to Respondents’ Assertions that U.S. Patent Nos. 9,099,972 and 8,116,284 Are Invalid For Obviousness over Combinations of Specific Prior Art References that Were Not Adequately Disclosed in Respondents’ Expert Reports	Denied without prejudice. (Order No. 38 at 2.). However, “Hytera will not be permitted to provide additional explanation, explication or reasoning on the alleged invalidity of any of the remaining asserted patents and claims in this Investigation, whether based on obviousness or anticipation, that is not contained in Hytera’s expert witness reports by Dr. Robert Akl and Dr. Mark Clements, and in Hytera’s its Pre-Hearing Brief. Specifically, Hytera is limited to the conclusory statements of its Pre-Hearing Brief. Dr. Akl and Dr. Clements will not be permitted to provide <i>any</i> reasoning or explanation that is not contained in their expert reports. . . . Hytera’s charts or tables that purport to show prior art obviousness combinations, some of which are replicated below, do not constitute evidence without more. Hytera’s prior art combination charts, without more, violate Ground Rule 5.” (<i>Id.</i> at 2-3 (emphasis in

³ On January 29, 2018, because of Motorola’s motion for partial termination of the Investigation with respect to the ’972 patent, Motorola withdrew as moot that portion of its MIL No. 1 that pertains to Hytera’s assertions of invalidity of the ’972 patent. (Doc. ID No. 634984 (Jan. 29, 2018)).

MIL No.	Issue	Ruling
		original).).
MIL No. 2	Complainant’s Motion to Preclude Arguments, Testimony, and Exhibits Relating to Respondents’ Defenses that U.S. Patent Nos. 8,279,991 and 7,369,869 Are Allegedly Essential to the ETSI Standard that Were Not Timely Disclosed in Accordance with the Schedule and Ground Rules	Granted in-part. (<i>Id.</i> at 3-4.). “Hytera has withdrawn its defenses of implied license, unenforceability and estoppel directed at Motorola’s alleged violation of the rules of certain standards setting organizations. Those defenses are <i>moot</i> . With respect to its license defense, Hytera is preclude[ed] from putting in any evidence during the Hearing. Therefore, that part of Motorola’s MIL 2, Motion Docket No. 1053-026, is <i>granted</i> .” (<i>Id.</i> at 3-4 (emphasis in original).).

On January 16, 2018, Orders setting forth the rulings on Hytera’s MILs and HPOs were issued. (Order Nos. 33-35 (Jan. 16, 2018)). Hytera’s MILs and HPOs, and the rulings on these motions/objections, are summarized in Chart No. 3 below.

Chart No. 3: Hytera’s MILs and HPOs

MIL No./HPO No.	Issue	Ruling
MIL No. 1	Respondents’ Motion to Preclude Complainant’s Experts, Dr. Stephen Wicker, ⁴ Dr. Sundeep	Granted in-part, denied in-part. (Order No. 33.). <ul style="list-style-type: none"> • All of Motorola’s witnesses are

⁴ When he testified during the evidentiary hearing on January 29-30, 2018 and February 2, 2018, Dr. Stephen Wicker was a Professor of Electrical and Computer engineer at Cornell University. (CPSt. at Ex. D; Tr. (Wicker) at 174:5-7.). Motorola identified Dr. Wicker as an expert to provide testimony with regard to: claim construction, technical background, infringement, and technical domestic industry with respect to the validity of the ’701, ’991 and ’284 patents. He also provided expert opinion and testimony on the conception and reduction to practice of the ’284 patent. He was expected to provide testimony on Hytera’s Fourth Affirmative Defense, express or implied license, to the extent that Hytera actually provided any evidence on whether any of the Asserted Patents (and especially with respect to the ’991

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MIL No./HPO No.	Issue	Ruling
	Rangan, ⁵ and Dr. David Anderson ⁶ from Presenting Expert Testimony Beyond the Scope of Their Expertise	<p>precluded from offering opinions with respect to any witness' invocation of his Fifth Amendment privilege. (<i>Id.</i> at 3.).</p> <ul style="list-style-type: none"> • Motorola's experts are precluded from offering opinions on any witness' "intent" or "state of mind" for any purpose. (<i>Id.</i> at 3-4.). • Motorola's experts are qualified to testify to infringement and induced infringement. (<i>Id.</i> at 4.). • Motorola's experts may testify to product copying. (<i>Id.</i> at 5.). • Motorola's experts may testify to non-obviousness and secondary considerations. (<i>Id.</i> at 5.).
MIL No. 2	Respondents' Motion to Preclude Complainant from Presenting Any Evidence, Opinions, or Arguments Regarding Contentions Withheld	<p>Granted in-part, denied in-part. (Order No. 34.).</p> <ul style="list-style-type: none"> • Motorola is not precluded from presenting evidence, opinions, and arguments with respect to

patent) were standard essential to the ETSI Digital Mobile Radio (DMR) standards. (CPSt. at 2.).

⁵ When he testified during the evidentiary hearing on January 31, 2018 and February 2, 2018, Dr. Sundeep Rangan was an Associate Professor of Electrical and Computer Engineering at New York University. (CPSt. at Ex. C; Tr. (Rangan) at 590:20-24.). Motorola identified Dr. Rangan as an expert to provide testimony with respect to: claim construction, technical background, infringement, technical domestic industry, and the validity of the '869 patent. He was expected to provide rebuttal testimony and rebuttal to Hytera's Fourth Affirmative Defense, express or implied license, to the extent that Hytera actually provided any evidence on whether the '869 patent was standard essential to the ETSI Digital Mobile Radio (DMR) standards. (CPSt. at 2.).

⁶ At the time of the evidentiary hearing, Dr. David Anderson was a Professor of Electrical and Computer Engineering at the Georgia Institute of Technology. (CPSt. at Ex. A.). Motorola identified Dr. Anderson as an expert to provide testimony with regard to claim construction, technical background, infringement, technical domestic industry, and validity of the '972 patent. (*Id.* at 1.). However, Motorola did not call Dr. Anderson to testify during the evidentiary hearing.

MIL No./HPO No.	Issue	Ruling
	During Fact Discovery	infringement under the doctrine of equivalents. (<i>Id.</i> at 5.). <ul style="list-style-type: none"> • Motorola is precluded from using a conception or reduction to practice date for the '284 patent before December 18, 2008, and from presenting evidence during the evidentiary hearing. (<i>Id.</i> at 6.). • Motorola's evidence on domestic DI is not precluded. (<i>Id.</i> at 8.). • Motorola's evidence on bond is not precluded. (<i>Id.</i> at 9.).
HPO No. 1	Respondents' Objections to Deposition Designations of Ms. Xiaohua Zheng ⁷ (CX-0749C, CX-0750C, CX-1632C) and Mr. Jue Liang ⁸ (CX-0744C, CX-0804C)	Denied without prejudice. (Order No. 35 at 2.).
HPO No. 2	Respondents' Objections	Denied. (<i>Id.</i> at 3.).

⁷ At the time of her deposition on October 9-10, 2017, and when she testified during the evidentiary hearing on February 1, 2018, Ms. Xiaohua Zheng was the Vice General Manager of the DMR Division at Hytera. (CX-0749C (Zheng Dep. Tr. (Oct. 9, 2017) at 6:5-10; Tr. (Zheng) at 866:7-10.). She was responsible for managing a research and development department for Hytera's DMR terminals, which included software and hardware development. (CX-0749C (Zheng Dep. Tr. (Oct. 9, 2017) at 6:5-10; Tr. (Zheng) at 866:11-15.). Hytera identified Ms. Zheng as a fact witness to provide general testimony with respect to: the accused Hytera products, including their function and operation, hardware, software, and documentation associated with each product. (RPSt. at 2.).

⁸ At the time of his deposition on October 12, 2017, Mr. Jue Liang was a Product Director at Hytera. (CX-0744C (Liang Dep. Tr. (Oct. 12, 2017)) at 6:22-24.). Mr. Liang's responsibilities as Product Director included strategic planning, managing the products, and organizing the team. (*Id.* at 8:3-9.). Hytera identified Mr. Liang as a fact witness to provide general testimony with respect to the accused Hytera products, including their function and operation, hardware, software, and documentation associated with each product. (RPSt. at 2.).

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MIL No./HPO No.	Issue	Ruling
	to Deposition Designations of Mr. Sam Guan ⁹ (CX-0745C) and Ms. Vivian Pan ¹⁰ (CX-0748C) ¹¹	
HPO No. 3	Respondents' Objections to Deposition Designations of Messrs. Felix Vayner ¹² (CX-0742C), Bruce R. Marcus ¹³ (CX-0740C), and Steven J. Guller ¹⁴	"Hytera's objections are moot because by Orders No. 27, 28, and 29, filed on January 12, 2018, subpoenas <i>ad testificandum</i> issued to each of the identified witnesses respectively, in this section of this Order, were quashed because the patents on which Messrs. Va[yn]er, Marcus and G[u]ller were

⁹ At the time of his deposition on September 26, 2017, Mr. Sam Guan was Vice President ("VP") of Engineering at Hytera America. (CX-0745C (Guan Dep. Tr. (Sept. 26, 2017)) at 8:14-21.). As VP of Engineering, Mr. Guan is responsible for taking care of all engineering-related activities in Hytera America. (*Id.* at 8:22-9:4.).

¹⁰ At the time of her deposition on October 13, 2017, Ms. Vivian Pan was the Marketing Director of Hytera America. (CX-0748C (Pan Dep. Tr. (Oct. 13, 2017)) at 45:22-46:3.). As Marketing Director, Ms. Pan was responsible for "develop[ing] the marketing program for the channels to enhance the Hytera brand awareness in the U.S., com[ing] up with the strategy for digital, and account marketing," "[o]rchestrat[ing] and oversee[ing] all of the events, shows, conference," and "[s]upport[ing] the sales team to grow business." (*Id.* at 46:5-13.).

¹¹ CX-0748C has been withdrawn.

¹² At the time of his deposition on October 13, 2017, Mr. Felix Vayner was the owner of MicroMagic Incorporated. (CX-0742C (Vayner Dep. Tr. (Oct. 13, 2017)) at 6:2-8.). During his deposition, Mr. Vayner testified that [REDACTED]. (*Id.* at 6:15-22, 7:6-15.). Mr. Vayner stated that [REDACTED] (*Id.* at 5-17.).

¹³ At the time of his deposition on September 22, 2017, Mr. Bruce R. Marcus was the Chief Technology Officer ("CTO") of Marcus Communications. (CX-0740C (Marcus Dep Tr. (Sept. 22, 2017)) at 9:5-7.). As CTO, Mr. Marcus designed systems and evaluated products such as video and access control. (*Id.* at 9:8-24.).

¹⁴ At the time of his deposition on October 3, 2017, Mr. Steven J. Guller was President of Warner Communications Corporation. (CX-0747C (Guller Dep. Tr. (Oct. 3, 2017)) at 8:10-15.).

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MIL No./HPO No.	Issue	Ruling
	(CX-0747C)	called to testify during the Hearing, and on which they testified during their depositions, have been terminated from this Investigation. Hytera's objections are therefore moot. However, if there is any doubt, Hytera's objection to the identified deposition transcript designations for Messrs. Va[yn]er, Marcus and G[u]ller are <i>sustained or granted.</i> " (<i>Id.</i>).
HPO No. 4	Respondents' Objections to Deposition Designations of Messrs. Samuel Chia ¹⁵ (CX-0746C), Y.T. Kok ¹⁶ (CX-0751C), and G.S. Kok ¹⁷ (CX-0743C)	Denied without prejudice. (<i>Id.</i> at 4.).

¹⁵ At the time of his deposition on September 26, 2017, Mr. Samuel Chia was the General Manager for the broadband product line at Hytera. (CX-0746C (Chia Dep. Tr. (Sept. 26, 2017)) at 8:6-9.). Prior to his employment by Hytera, from approximately 1999 to 2008, Mr. Chia worked for Motorola first as a software developer and then as a team leader for the digital signal processing team. (*Id.* at 15:20–16:10.).

¹⁶ At the time of his deposition on September 24, 2017, Mr. Yih Tzye Kok was a salesperson at Hytera. (CX-0751C (Y.T. Kok Dep. Tr. (Sept. 24, 2017)) at 16:6-13, 26:15-20.). Mr. Kok testified that his sales work for Hytera focused on DMR products. (*Id.* at 30:18-23.). Prior to working in sales, from approximately 2008 to 2012, Mr. Kok worked as a software manager at Hytera. (*Id.* at 26:3-11.). Before joining Hytera, Mr. Kok worked at Motorola from 1997 to 2000 as a software engineer. (*Id.* at 13:4-8, 18:15-19.). He rejoined Motorola in 2002 as a senior software engineer, left again in 2005, and rejoined Motorola for a third time in 2007 as a software manager, until he left to work for Hytera in 2008. (*Id.* at 13:23-14:7, 15:4-10, 22:7-10, 24:12-15.).

¹⁷ At the time of his deposition on September 22, 2017, Mr. Gee Siong Kok was a Product Manager at Sepura, a subsidiary of Hytera. (CX-0743C (G.S. Kok Dep. Tr.) at 60:19-24, 61:6-8.). Prior to his employment by Sepura, Mr. Kok worked for Motorola from 1987 to 1997 as an R&D engineer, and then from 2001 to 2007 as an engineering manager. (*Id.* at 14:23-25, 15:11-14, 18:23-25, 19:4-6.). In 2008, Mr. Kok joined HYT, the entity that became Hytera, as Director. (*Id.* at 52:9-15, 54:2-5, 56:13-18.). Mr. Kok later became Assistant General Manager in charge of terminal development, and in 2013, was promoted to Senior Vice President of Hytera. (*Id.* at 58:17–59:3.).

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The evidentiary hearing was held from January 29, 2018 through February 2, 2018. Motorola alleged that Hytera has infringed the Asserted Patents and claims identified in Chart No. 4, below, which were the focus of testimony during the evidentiary hearing.

Chart No. 4: Patents and Claims at Issue

U.S. Patent No.	Claims Asserted ¹⁸
'284	9, 13, 14, 15
'869	1, 6, 17, 21
'701	1, 11
'991	7, 8

On February 5, 2018, a notice addressing post-hearing deadlines (“Post-Hearing Notice”) issued. (Order No. 41 (Feb. 5, 2018)). The Post-Hearing Notice instructed the Parties to file, *inter alia*, any post-hearing motions by February 16, 2018. (*Id.* at 4.).

On February 16, 2018, Motorola and Hytera each filed one (1) motion to strike. (Motion Docket Nos. 1053-033 (Feb. 16, 2018), 1053-032 (Feb. 16, 2018)). The Parties’ motions to strike, and the rulings on these motions, are summarized in Chart No. 5 below.

Chart No. 5: Motorola’s and Hytera’s Motions to Strike

Motion Docket No.	Issue	Ruling
1053-032	Respondents’ Motion to Strike Portions of Hearing Testimony	Denied. (<i>See</i> Order No. 45 (Apr. 26, 2018)).
1053-033	Complainant’s Motion to	Granted in-part, denied in-part. (Order

¹⁸ Bolded patent claim numbers indicate independent claims.

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Motion Docket No.	Issue	Ruling
	Strike Dr. Robert Akl's ¹⁹ Testimony	<p>No. 47 at App'x A (May 18, 2018).).</p> <p>The following testimony has been stricken:²⁰ Tr. at 934:25–935:12 (Order No. 47 at App'x A at 2); 938:22–939:15 (Order No. 47 at App'x A at 9); 951:13–19, 952:5–10 (Order No. 47 at App'x A at 27); 968:21–969:22 (Order No. 47 at App'x A at 72–73); 982:2–973:2 (Order No. 47 at App'x A at 85); 1067:13–1069:10 (Order No. 47 at App'x A at 103); 1081:14–1082, 1092:7–16 (Order No. 47 at App'x A at 124); 1099:11–16 (Order No. 47 at App'x A at 153); 1100:4–8 (Order No. 47 at App'x A at 160); 1102:23–1103:3 (Order No. 47 at App'x A at 170); 1117:11–17 (Order No. 47 at App'x A at 190); 1123:24–1124:2, 1124:5–6, 1124:11–18 (Order No. 47 at App'x A at 214); 1124:25–1125:3 (Order No. 47 at App'x A at 224); 1126:3–21 (Order No. 47 at App'x A at 234); 1128:1–14 (<i>id.</i> at 245); 1129:4–8 (Order No. 47 at App'x A at 249); 1129:23–1130:3 (Order No. 47 at App'x A at 260); 1130:19–25 (Order No. 47 at App'x A at 269); 1131:5–9 (Order No. 47 at App'x A at 272); 1131:19–1132:5, 1132:13–19 (Order No. 47 at App'x A at 275); 1133:1–10 (Order No. 47 at App'x A at</p>

¹⁹ When he testified during the evidentiary hearing on February 1–2, 2018, Dr. Robert Akl was an Associate Professor at the University of North Texas in the Department of Computer Science and Engineering and the Associate Chair of Graduate Studies in that department. (RPSt. at Ex. B; Tr. (Akl) at 926:3–7.). He was also a Senior Member of IEEE. (RPSt. at Ex. B.).

²⁰ “In some instances, certain testimony that has been ‘stricken’ may be cited to in the Initial Determination on Violation (‘ID’) as testimony or argument that Hytera abandoned or waived under certain Ground Rules. In other instances, where Dr. Akl’s testimony and opinions are unavailing, or where the stricken testimony provides a more accurate representation of or context for Dr. Akl’s opinions, it may be discussed in the ID in that context. There are other passages for which no decision was made. That testimony may be considered or discussed in the ID in the context of whether Hytera has met its burden of proof on its invalidity or non-infringement arguments, as may be appropriate.” (Order No. 47 at 5.).

Motion Docket No.	Issue	Ruling
		284); 1136:12-16, 1136:22–1137:2 (Order No. 47 at App’x A at 289); 1137:20-24, 1138:4-8 (Order No. 47 at App’x A at 293); 1138:13-16 (Order No. 47 at App’x A at 301); 1139:8-20 (Order No. 47 at App’x A at 302); 1140:4-14 (Order No. 47 at App’x A at 306); 1141:12-21, 1142:1-6 (Order No. 47 at App’x A at 311); 1142:22–1143:1 (Order No. 47 at App’x A at 321); 1143:6-9 (Order No. 47 at App’x A at 328); 1143:14-16 (Order No. 47 at App’x A at 336); 1143:21-25 (Order No. 47 at App’x A at 342); 1144:5-8 (Order No. 47 at App’x A at 349); 1144:13-17 (Order No. 47 at App’x A at 356); 1148:14-19 (Order No. 47 at App’x A at 370); 1152:19-22 (Order No. 47 at App’x A at 400); 1153:2-6, 1153:12-21 (Order No. 47 at App’x A at 403); 1154:5-14 (Order No. 47 at App’x A at 411); 1155:24–1156:6 (Order No. 47 at App’x A at 416); 1157:1-3 (Order No. 47 at App’x A at 419); 1157:25–1158:4 (Order No. 47 at App’x A at 421); 1159:7-13, 1159:20-24 (Order No. 47 at App’x A at 428); 9989:18-21, 989:25–990:1, 991:6 (Order No. 47 at App’x A at 436); 997:2-15 (Order No. 47 at App’x A at 440); 1008:15-19 (Order No. 47 at App’x A at 453); 1017:3-5 (Order No. 47 at App’x A at 483); 1018:16-17, 1018:22-25 (Order No. 47 at App’x A at 492-93); 1020:22–1021:2 and (Order No. 47 at App’x A at 497).

B. The Parties

1. Complainant Motorola Solutions, Inc. (“Complainant” or “Motorola”)

Motorola is a Delaware corporation with its headquarters and principal place of business

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at 500 W. Monroe Street, Chicago, IL 60661. (Compl. at ¶ 8.). Motorola has been a provider of two-way radio equipment and systems since its founding in Chicago almost 100 years ago. (*Id.* at ¶ 9.). Motorola offers a variety of communications products and systems, including MOTOTRBO Digital Mobile Radio (“DMR”) devices and infrastructure for commercial customers in the manufacturing, education, utility, transport and logistics, oil and gas, hospitality, and retail industries; TETRA devices and infrastructure for mission critical communications; and ASTRO and APX Project 25 (“P25”) radios, infrastructure, and dispatch systems for emergency responders and public safety organizations. (*Id.* at ¶ 10.).

2. Respondent Hytera Communications Corp. Ltd.

Hytera Communications Corp. Ltd. is a company organized under the laws of the People’s Republic of China, with its principal place of business at Hytera Tower, Shenzhen Hi-Tech Industrial Park North, #9108 Beihuan Road, Nanshan District, Shenzhen, People’s Republic of China. (Resp. at ¶ 12.). Hytera Communications Corp. Ltd. develops and manufactures two-way radio equipment and systems. (*Id.* at ¶ 15.).

3. Respondent Hytera America, Inc.

Hytera America, Inc. is a company organized under the laws of Florida with its principal place of business at 3315 Commerce Pkwy, Miramar, FL 33025. (*Id.* at ¶ 13.). Hytera America, Inc. is a subsidiary of Hytera Communications Corp. Ltd. and imports into the United States and sells in the United States two-way radio equipment and systems. (*Id.* at ¶ 15.).

4. Respondent Hytera Communications America (West), Inc.

Hytera Communications America (West), Inc. is a company organized under the laws of California with its principal place of business at 300 Spectrum Center Dr., Suite 1120, Irvine, CA 92618. (*Id.* at ¶ 14.). Hytera Communications America (West), Inc. is a subsidiary of

Hytera Communications Corp. Ltd. and imports into the United States and sells in the United States two-way radio equipment and systems. (*Id.* at ¶ 15.).

III. JURISDICTION, IMPORTATION, AND STANDING

A. The Commission Has Jurisdiction

To have the authority to decide a case, a court or agency must have both subject matter jurisdiction and jurisdiction over either the parties or the property involved. *See Certain Steel Rod Treating Apparatus and Components Thereof*, Inv. No. 337-TA-97, Comm’n Op., 215 U.S.P.Q. 229, 231 (U.S.I.T.C. 1981). For the reasons discussed below, the facts support a finding that the Commission has jurisdiction over this Investigation.

1. Subject Matter Jurisdiction

The Commission has subject matter jurisdiction over this Investigation because Motorola alleged that Hytera has violated 19 U.S.C. §1337(a)(1)(B). *See Amgen v. U. S. Int’l Trade Comm’n*, 902 F.2d 1532, 1536 (Fed. Cir. 1990). Hytera has not contested that the Commission has subject matter jurisdiction. (*See* RPB. at 10; RBr. at 8.).

2. Personal Jurisdiction

Hytera has appeared and responded to the Complaint and NOI, and participated in discovery and the evidentiary hearing. Thus, the Commission has personal jurisdiction over Hytera. *See, e.g., Certain Windshield Wiper Devices and Components Thereof* (“Wiper Devices”), Inv. No. 337-TA-881, Initial Determination at 5 (May 8, 2014) (unreviewed in relevant-part) (Doc. ID No. 534255).

3. In Rem Jurisdiction

Section 337(a)(1)(B) applies to the “[t]he importation into the United States, the sale for importation, or the sale within the United States after importation” of articles that infringe a valid

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and enforceable United States patent.” 19 U.S.C. § 1337(a)(1)(B). A single instance of importation is sufficient to satisfy the importation requirement of Section 337. *Certain Optical Disc Drives, Components Thereof, and Prods. Containing the Same*, Inv. No. 337-TA-897, Order No. 101 at 3 (Sept. 22, 2014) (citations omitted) (EDIS Doc. 543438).

Hytera has not contested that the Commission has *in rem* jurisdiction over the Accused Products identified in the Complaint. (*See* RPBr. at 10; RBr. at 8.).

Thus, evidence presented in this Investigation establishes that the Commission has *in rem* jurisdiction over the Accused Products. *See, e.g., Wiper Devices*, Inv. No. 337-TA-881, Inv. No. 337-TA-881, Initial Determination at 5 (*in rem* jurisdiction exists when importation requirement is satisfied).

With respect to the '284 Redesigned Products that Motorola accused of infringing the asserted claims of the '284 patent (CPBr. at 7-14) in its Pre-Hearing Brief, which Motorola did not identify in the Complaint, Motorola stated that, *inter alia*: (i) “Hytera has not provided any documentary evidence demonstrating that products with this firmware are or will be imported”; (ii) the “products with the new firmware have not been publicly released”; (iii) “Hytera . . . has not published any release notes for its new firmware”; and (iv) Hytera has not “provided documents about the new firmware to customers, or released public documentation about the new firmware.” (*Id.* at 3 (internal citation omitted).).

In its Initial Post-Hearing Brief, Motorola continued to assert that the '284 Redesigned Products infringe the asserted claims of the '284 patent. However, Motorola contended for the first time that Hytera “has not met its burden to show that these allegedly redesigned products are

sufficiently fixed to be adjudicated in the present Investigation.” (*Id.* at 3, 13-17.).²¹

Additionally, Motorola argued that “Hytera introduced no documents about the allegedly redesigned products,” and that “Hytera also has not provided any evidence to substantiate its assertion that it has imported [REDACTED] with the redesigned software into the U.S.” (*Id.*).²²

Hytera did not contest that the Commission had jurisdiction over its redesigned products in its Pre-Hearing or Initial Post-Hearing Briefs. (RPBr. at 10; RBr. at 8.). However, in its Initial Post-Hearing Brief, Hytera stated that:

Nothing limits an investigation to specifically imported products. On the contrary, remedial orders commonly exclude “all products that infringe,” without identifying specific products, and Complainant has not limited its requested remedy to particular products. It is tautological that the Commission has authority over any product it might exclude through a remedial order.”

(RBr. at 8.).

In its Post-Hearing Reply Brief, Hytera contended in more detail that:

In the parties['] Joint Outline of Issues (Doc. ID 638123), Complainant alleged Hytera must prove the Commission has jurisdiction over Hytera’s Accused New Products (*id.* at 3, 6, 8, 10), although Complainant did not raise this in its prehearing brief and never disputed Hytera’s products were “sufficiently fixed” to assess. On the contrary, Complainant alleged these products infringe the ’284 patent. *See* CPreHgBr at 8-14. Although Complainant now does not want the Court to adjudicate Hytera’s new products, it wants “to be able to argue that they fall within the scope of any exclusion order that may issue,” which is improper. *Certain Electronic Digital Media Devices and Components Thereof*, Inv. No. 337-TA-796, Comm’n Op., 2013 WL 10734395, at *72 (Sept. 6, 2013). ***Complainant sought and received discovery on Hytera’s new products, including taking fact***

²¹ By waiting until its Initial Post-Hearing Brief to change its position on jurisdiction, Hytera waived its right to do so under Ground Rule 10.1, and therefore, also waived its right to appeal the decision reached in this ID independently of Hytera’s position.

²² By waiting until Its Initial Post-Hearing Brief to change its position on jurisdiction, Motorola waived its right to do so under Ground Rule 10.1, and therefore, also waived its right to appeal the decision reached in this ID independently of Motorola’s position.

depositions, submitting an expert report, and having its expert testify at the hearing about these products. *Id.*; Tr. (Wicker) 226-37, 446-52 (alleging infringement of the '284 patent); Complainant's Notice Regarding Depositions (Doc ID. 628346) ("Motorola does, however, request a single deposition: namely, a corporate deposition of Hytera regarding its allegedly 'redesigned' products.").

(RRBr. at 8-9 (emphasis added).).

As Hytera noted, Motorola has no basis for this position. "[Q]uestions regarding the importation or developmental stage of [new designs] did not offer an appropriate basis for the ALJ to decline to make a determination of infringement." *Certain Flash Memory Circuits and Prods. Containing Same*, Inv. No. 337-TA-382, Comm'n Op., 1997 WL 817778, at *3, *9, *11 (June 2, 1997) (reversing an ALJ's decision to decline to determine infringement for new designs); *Certain Elec. Digital Media Devices and Components Thereof*, Inv. No. 337-TA-796, Comm'n Op., 2013 WL 10734395, at *72-73 (Sept. 6, 2013) ("[W]e agree with the ALJ that the design around products were put in issue in this investigation, and Apple had the opportunity to present evidence of infringement. As a result, the ALJ properly adjudicated that Samsung's design around products do not infringe the asserted utility patents."); *see also Certain Hardware Logic Emulation Sys. and Components Thereof*, Inv. No. 337-TA-383, Order No. 57, 1996 WL 965689, at *3 n.12 (Nov. 6, 1996) ("[T]he mere assertion of no importation is insufficient to avoid Commission jurisdiction and to prevent discovery.").

Motorola has been aware that Hytera imported [REDACTED] containing the "new software" into the United States.²³ (CX-1632C (Zheng Dep. Tr.) at 10:18-24 ("Q: . . . So

²³ *Certain Products Containing Interactive Program Guide and Parental Control Technology* ("*Interactive Program Guide*") reinforces the principle that, for purposes of satisfying the importation requirement, what matters is the state or composition of an accused product at importation. Inv. No. 337-TA-845, Initial Determination at 39 (July 2, 2013), *aff'd* in relevant part, Comm'n Op. at 12-15 (Dec. 11,

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I'm going to ask you some questions generally about the new software. And so, when I say 'new software,' will you understand that I mean the [REDACTED],²⁴ as well as SmartDispatch? A: Okay.”), 13:25-14:3 (“Q: So has Hytera confirmed that products running the new software actually work correctly? A: Yes.”), 14:11-21 (“Q: . . . [D]id you perform any internal testing anywhere other than Shenzhen? A: Our US subsidiary also performed testing on the prototype machine.” Q: . . . [Y]ou said it passed internal testing, you gave some [REDACTED] to subsidiaries, and you gave some [REDACTED] to certification agencies; is that correct? A: That’s correct.”), 16:7-11 (“Q: Okay. You also said that you gave some prototypes to certification agencies? A: That’s correct. Q: Which certification agencies? A: FCC certification.”), 16:23-17:3 (“Q: Other than the [REDACTED] that you sent to Hytera America and to the FCC, is the new software on radios that are being shipped to the United States? A: No.”).

Hytera also produced documents and source code relating to the '284 Redesigned Products, which Motorola’s experts reviewed. (*See, e.g.*, Tr. (Akl) at 936:16-20 (“Q: What kind of information did you review to form an opinion with respect to the Hytera new products? A: I

2013). In that case, the importation requirement was not satisfied for accused products designed to run Netflix software because the products did not contain that software upon importation. *Id.* at 15 (“[I]t is unclear what portions of the Netflix SDK are in fact imported into the United States on Netflix Ready Devices. Thus, we are unable to conclude that the imported portions of the SDK perform the actions that purportedly induce infringement of the asserted patents.”). *Interactive Program Guide* is distinguishable from the facts here because Hytera has presented evidence that the '284 Redesigned Products, as imported, were loaded with the redesigned software. (*See, e.g.*, CX-1632C (Zheng Dep.) at 16:23-17:3.). Moreover, neither party has provided evidence that Hytera imports only product hardware and combines that hardware with software after the hardware has been imported, as was the case in *Interactive Program Guide*.

²⁴ The '284 Redesigned Products consist of the PD5i Series ([REDACTED]), and PD6i, PD7i, and PD9i Series ([REDACTED]). (*See, .e.g.*, CBr. at 13 n.2.).

looked at the source code, I spent a lot of time on the source code, and there were a couple documents, but mainly the source code.”); Tr. (Wicker) at 229:19-24 “Q: Before we took a break, we were talking about Hytera’s redesigned software. And just to be clear, these images you have shown on slide 71 are flowcharts. Did you review any documents or source code related to Hytera’s redesigned feature? A: Yes, I did.”); *see also id.* at 229:25-230:9.).

For these reasons, the Commission has *in rem* jurisdiction over the ’284 Redesigned Products.

B. Motorola Has Standing in the Commission

Jurisdiction also requires standing. *See SiRF Technology, Inc. v. Int’l Trade Comm’n*, 601 F.3d 1319, 1326 (Fed. Cir. 2016) (standing to bring an infringement suit is the same under Commission Rules as it would be in a Federal District Court case); *Certain Optical Disc Drives, Components Thereof and Prods. Containing Same*, Inv. No. 337-TA897, Opinion Remanding the Investigation at 4 (Jan. 7, 2015). Commission Rule 210.12 requires that intellectual-property based complaints filed by a private complainant “include a showing that at least one complainant is the exclusive licensee of the subject intellectual property.” 19 C.F.R. § 210.12(a)(7).

Motorola has standing to bring suit for infringement under Section 337 because Motorola Solutions, Inc. is the owner of the Asserted Patents. (*See, e.g.*, CX-0602; CX-0604; CX-0605; CX-1267.).

IV. THE ASSERTED PATENTS

A. U.S. Patent No. 8,116,284 (“the ’284 Patent”)

1. Overview of the ’284 Patent

The ’284 patent, titled “Method, Device, and System for Temporarily Selecting a Timeslot,” was filed on December 18, 2008, as U.S. Patent Application Serial No. 12/338,303

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(“the ’303 application”). (JX-0001 at (21), (22), (54).). The ’303 application issued as the ’284 patent on February 14, 2012, and names Kin Wei Wong, Hooi Hoon Ch’ng, Lip Hoon Lim, and Chun Yee Tan as the inventors. (*Id.* at (10), (45), (75).). Motorola Solutions, Inc. is the assignee of the ’284 patent. (CX-0602; *see also* JX-0001 at (73).).

The ’284 patent relates generally to talkgroup timeslot selection methods, communication devices, and wireless communication systems that employ a time division multiple access (“TDMA”)²⁵ signaling protocol. (JX-0001 at 1:6-10.). Specifically, the ’284 patent discloses methods, devices, and systems that allow individual radio communication devices to allocate timeslots to themselves, when their assigned timeslots are not available, without the use of a centralized controller. (*See id.* at 2:47-61, 5:40-44.).

By way of background, wireless communication via radio frequencies (RF) can use a variety of ways to transmit information. In one scheme, known as Time Division Multiple Access (TDMA), RF resources can be divided into a series of recurring time frames which are further divided into timeslots. (*See id.* at 1:21-24.). Radio communication devices are allocated timeslots during which they may transmit information. (*See id.* at 1:18-26.).

Before a device can transmit information, however, it must be allocated the particular timeslots during which it is permitted to transmit. (CXM-0004 (Wicker Decl.) at ¶ 20.). As the patent explains, one method that was known in the prior art for allocating RF resources such as timeslots in two- way radio systems is called “trunking.” (JX-0001 at 1:32-37.). With trunking, each radio device needing to transmit requests an available traffic channel from a centralized

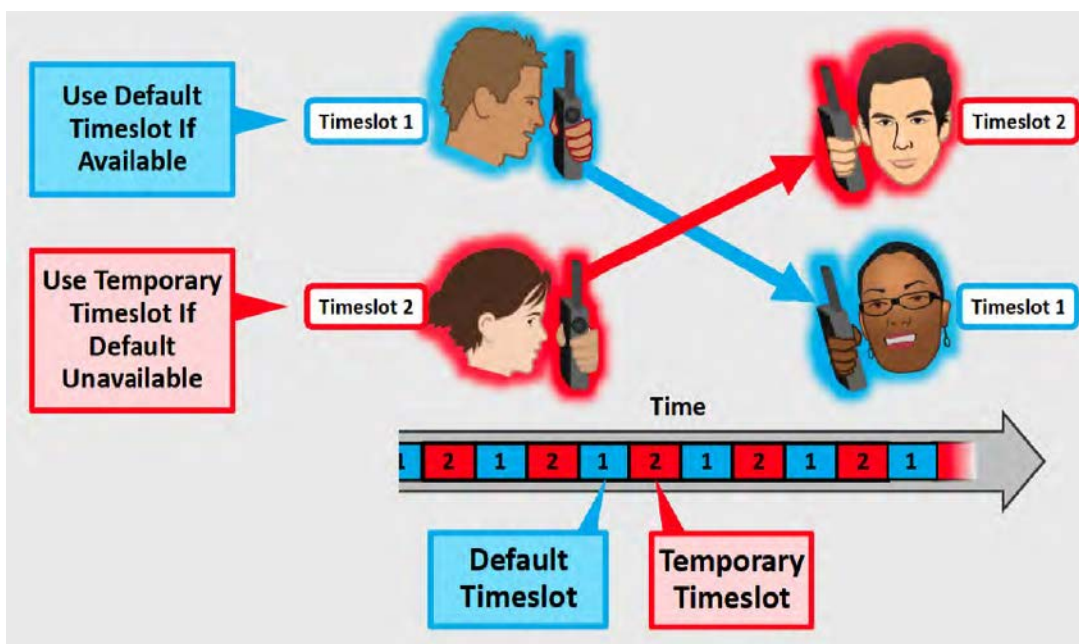
²⁵ A TDMA system is a wireless communications system that divides the radio spectrum into timeslots to synchronize communications. (*Id.* at 1:23-28.).

management device called a controller, and the controller then assigns particular timeslots to the radio device. (*Id.*; CXM-0004 (Wicker Decl.) at ¶ 20.). When a communication is completed, the controller re-assigns the timeslots to the next device in need of network resources. (JX-0001 at 1:27-48.).

According to the '284 patent, problems existed with the trunking approach. Specifically, the '284 patent explains that the use of such centralized, system-level controllers can cause communication delays and may be an unnecessary or undesirable overhead for the communications system. (*See id.* at 1:54-58.).

To overcome this problem, the '284 patent provides an approach that allows individual radio communication devices to allocate timeslots to themselves, when their assigned timeslots are not available, without the use of a centralized controller. (*See id.* at 2:47-61, 5:40- 44.). According to the patent, before a radio communication device begins communication, it checks whether a particular timeslot that has been assigned to it by default is available for it to use. (*See id.* at 2:55-58.). When the assigned default timeslot is not available, rather than wait for re-assignment by a central controller, the radio communication device searches for another, different timeslot that is available. (*See id.*). Upon identifying an available timeslot, the radio communication device temporarily selects it for use. (*See, e.g., id.* at 2:55-61, 4:35-40.).

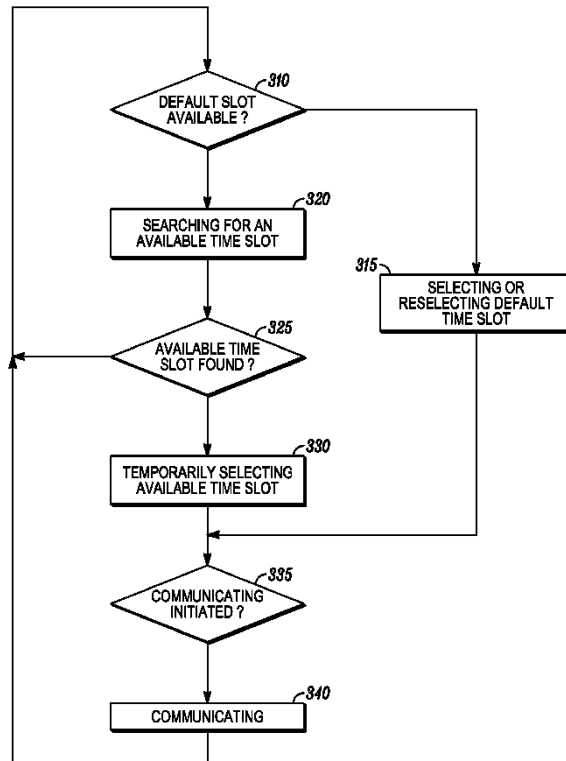
Figure No. 1: Timeslot Allocation Described in the '284 Patent



(CDX-0005C-12.).

Later, when the default timeslot of the radio device becomes available, the radio device may re-select it. (*See id.* at 2:58-61.).

Figure No. 2: Flow Diagram Illustrating a Method Performed by a Radio Communication Device

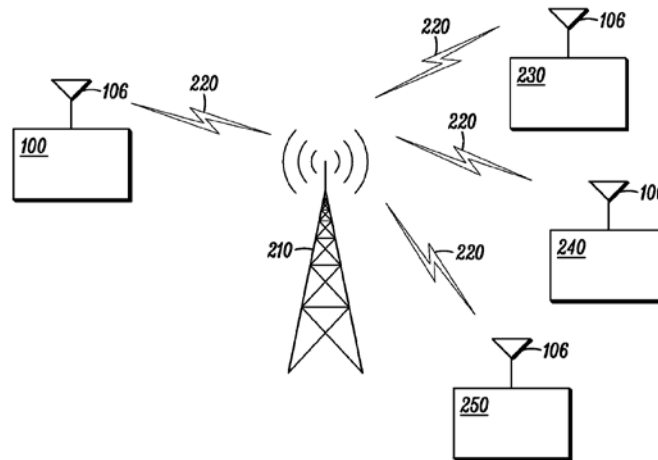


(*Id.* at Fig. 3.).

In certain embodiments, the '284 patent teaches that the communication with the group of other radio communication devices **100, 230, 240, 250** takes places through at least one repeater **210**.²⁶ (*See id.* at 2:47-61; CXM-0004 (Wicker Decl.) at ¶ 23.).

²⁶ In a wireless radio communication system, a “repeater” is a device that receives communications from a radio communication device, and repeats those communications to one or more other radio communication devices in order to increase the effective range of the transmitting radio communication device. (*See* Wicker Decl. at ¶ 19; *see also* CXM-0012 (McGraw-Hill Dictionary of Electrical & Computer Engineering (2004)) at 489 (defining “repeater” as “[a] device that receives weak signals and delivers corresponding stronger signals with or without reshaping of waveform”).

Figure No. 3: TDMA Wireless Communication System



(JX-0001 at Fig. 2.).

2. Asserted Claims of the '284 Patent

Remaining asserted claims 9 and 13-15 of the '284 patent are recited below.²⁷ They are product claims directed to radio communication devices and wireless communication systems.

9. A radio communication device having an assigned default timeslot for communicating with a talkgroup of other radio communication devices, the radio communication device comprising: radio communication circuitry; and a processor coupled to the radio communication circuitry, wherein in operation the processor: determines, from a signal provided by the radio communication circuitry, if the default timeslot is available for the radio communication device to communicate with the talkgroup, when the default timeslot is unavailable the processor instructs the radio communication circuitry to search for an available timeslot and temporarily select the available timeslot as a temporary selected group timeslot for the talkgroup, and when the default timeslot becomes available the processor instructs the radio communication circuitry to re-select the default timeslot for communicating with the talkgroup.

13. The radio communication device, as claimed in claim 9, wherein the signal provided by the radio communication circuitry is generated from information sent from a repeater station.

²⁷ Bolded patent claim numbers indicate independent claims.

14. The radio communication device, as claimed in claim 13, wherein the information sent from the repeater station is provided in a common announcement channel.

15. A wireless communication system comprising: a plurality of radio communication devices forming a talkgroup; and at least one repeater station through which the radio communication devices communicate, wherein each of the radio communication devices have a common assigned default timeslot for communicating with the talkgroup, and wherein each one of the radio communication devices: determines if the default timeslot is available to communicate with the talkgroup, when the default timeslot is unavailable each of the radio communication devices searches for an available timeslot and temporarily selects the available timeslot as a temporary selected group timeslot for the talkgroup, and when the default timeslot becomes available each of the radio communication devices re-select the default timeslot for communicating with the talkgroup.

(JX-0001 at 6:61–7:14, 7:24–8:16.).

B. U.S. Patent No. 7,369,869 (“the ’869 Patent”)

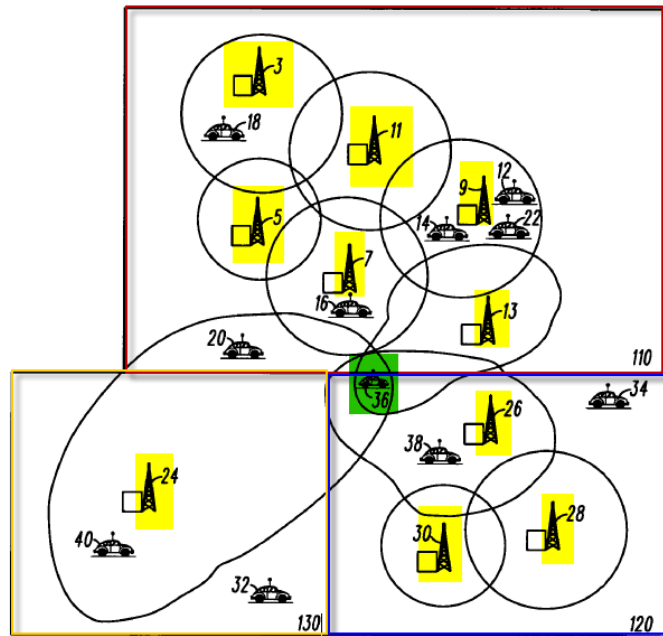
1. Overview of the ’869 Patent

The ’869 patent, titled “Method and System of Scanning a TDMA Channel,” was filed on July 26, 2004, as U.S. Patent Application Serial No. 10/899,479 (“the ’479 application”). (JX-0005 at (21), (22), (54).). The ’479 application issued as the ’869 patent on May 6, 2008, and names David G. Wiatrowski, Thomas B. Bohn, Satyanarayan R. Panpaliya, and Thomas J. Senese as the inventors. (*Id.* at (10), (45), (75).). Motorola Solutions, Inc. is the assignee of the ’869 patent. (CX-0604; *see also* JX-0005 at (73).).

The ’869 patent discloses a method and system for scanning a TDMA channel by a subscriber unit in a wireless communications landscape. (JX-0005 at Abstract; *see also id.* 1:6-8.). “Scan” is a feature used by two-way radio subscriber units (or “SUs”), including mobile and portable devices like in-car or handheld radios.” (*See id.* at 2:39-41.). Scan functionality specifically enables an SU to “lock” on to specific channels in a preprogrammed list in the SU and monitor those channels for information useful to the SU. (*Id.* at 1:26-28.). For example, an

SU used by a firefighter in Schaumburg, Illinois can scan channels associated with the Schaumburg fire department as well as channels associated with the nearby Rolling Meadows fire department to identify whether those channels have activity that are useful to and should be received by the SU. (*Id.* at 1:31-33.). Figure No. 4 (Figure 1 of the '284 patent), below, is an exemplary diagram illustrating an SU in a scanning system

Figure No. 4: Block Diagram of a Wireless Communication Landscape



(*Id.* at Fig. 1 (annotated).).

The SU (element **36**, in green) is a member of a system (element **120**), such as the Schaumburg fire department, which includes several base repeaters (“BRs” or “repeaters,” in yellow). The SU’s preprogrammed scan list may include all the channels associated with the BRs in its system as well as channels associated with BRs in adjacent fire department systems (elements **110** and **130**). (*See id.* at 2:14-35.).

Prior to the invention of the '869 patent, there were problems with the process of

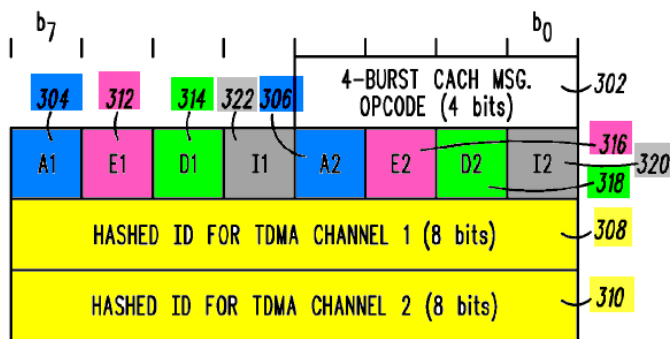
scanning all of the channels on the preprogrammed list, making the overall scan process relatively slow:

If the preprogrammed scan list is very long and has many RF frequencies, then the scan feature takes a long time. Further, in the usual case, when many of the RF communications are normally of no interest to the scanning SU, the scanning SU spends a lot of time listening to communications that are of no interest to it.

(*Id.* at 1:34-42.).

To minimize scanning time and to more efficiently identify relevant communications, the '869 patent describes a process for quickly scanning channel activity and identifying transmissions of interest. Specifically, an SU decodes control messages (identified as “activity update messages” in one embodiment) that contain multiple pieces of information about the channel’s activity. (*See, e.g., id.* at 4:49-58.). For example, Figure No. 5 (Figure 3 of the '869 patent) below provides a diagram of an exemplary control message:

Figure No. 5: Example of a Common Announcement Channel Message



(*See id.* at Fig. 3 (annotated).).

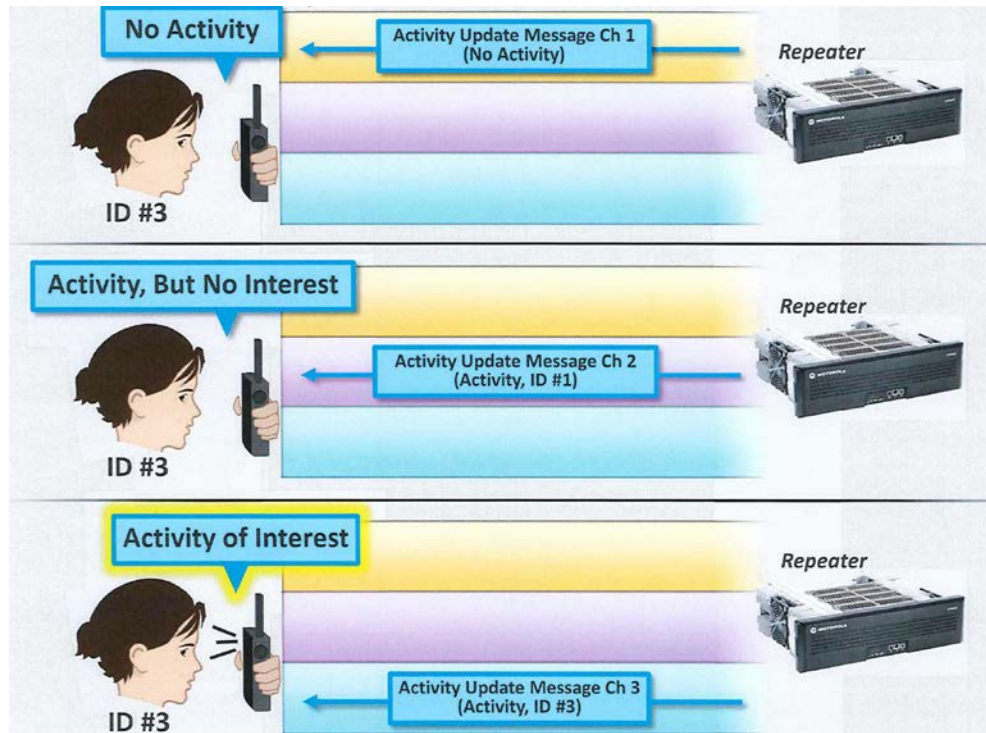
As illustrated, fields 304 and 306 (in blue) indicate “whether the channel is presently supporting a call or transmission,” i.e., whether there is activity on the channel. (*See id.* at 4:59-62.). Identification fields 308 and 310 (in yellow) include the targeted SU ID or talk group ID of

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the active transmission. (*Id.* at 5:47-53.). Fields **312** and **316** (in magenta) indicate whether the activity is an emergency or non-emergency transmission (*id.* at 5:14-19), fields **314** and **318** (in green) indicate whether the activity is a voice or data transmission (*id.* at 5:10-14), and fields **320** and **322** (in grey) indicate whether the activity is a group or individual call (*id.* at 5:19-22).

The control message thus includes: (1) information about whether there is activity on the channel; and (2) if so, information about a characteristic of that activity that allows an SU to determine whether the activity is “of interest”—i.e., if it is directed to the scanning SU or one of the SU’s talkgroups, or if the activity has another characteristic, such as an indication it is an emergency call, a voice call, or a group call, that is useful to the SU. (*See, e.g., id.* at 5:33-65.). These control messages can be timed on the channel to ensure that they are received within a certain period by the SU. (*See, e.g., id.* at 7:36-51.). If the SU determines that the activity is of interest, the SU remains on the channel to receive the activity; otherwise, the SU moves to the next channel in the preprogrammed list. (*Id.* at 5:41-46.).

Figure No. 6: Illustration Showing the Activity Update Message Described in the '869 Patent



(CDX-0006C-7.).

In this way, the SU can quickly determine whether or not the activity is of interest without having to actually wait and receive the activity. (*Id.*).

2. Asserted Claims of the '869 Patent

Remaining asserted claims 1, 6, 17, and 21 of the '869 patent are recited below.²⁸ They are product and method claims directed to TDMA systems, systems and methods for scanning a TDMA channel.

1. A method for scanning a TDMA channel by a subscriber unit in a wireless communications landscape 100, wherein the subscriber unit is operationally connected to at least one base radio over a plurality of channels, the method comprising the steps of: locking onto a channel of the plurality of

²⁸ Bolded patent claim numbers indicate independent claims.

channels by the subscriber unit wherein a subset of the plurality of channels is preprogrammed in a list in the subscriber unit; transmitting from at least one base radio a control message to the subscriber unit wherein the control message has a first information which informs the subscriber unit of activity present on the channel of the plurality of channels; receiving and decoding the control message for the first information by the subscriber unit; and if the first information indicates that activity is present on the channel of the plurality of channels, then determining whether the activity is of interest to the subscriber unit by comparing a second information in the control message with a third information preprogrammed in the subscriber unit and if the activity is of interest to the subscriber unit, then remaining on the channel of the plurality of channels to receive the activity present on the channel.

6. The method of claim 1 further comprising the step of tuning to the next channel in the list that is preprogrammed in the subscriber unit.

17. In a TDMA system whereby the TDMA system comprises a plurality of subscriber units and a plurality of base radios, a method for scanning, the method comprising the steps of: locking onto a channel preprogrammed in a list of a subscriber unit whereby the channel carries activity on one timeslot of the TDMA system; receiving an activity update message from a base radio of the plurality of base radios wherein the activity update message indicates in a first information the activity on the channel and indicates in a second information at least one characteristic of the activity on the channel; determining whether the activity is of interest to the subscriber unit by comparing the at least one characteristic with preprogrammed third information in the subscriber unit; and if the activity is of interest, then remaining on the channel to receive the activity; otherwise moving to the next channel in the list.

21. A system for scanning a TDMA channel by a subscriber unit in a wireless communications landscape 100, wherein the subscriber unit is operationally connected to at least one base radio over a plurality of channels, the system comprising: a receiver for locking onto a channel of the plurality of channels wherein a subset of the plurality of channels is preprogrammed and whereby the receiver obtains an activity update message from the channel wherein the activity update message indicates in a first information activity on the channel and indicates in a second information at least one characteristic of the activity on the channel; a decoder for obtaining the at least one characteristic from the activity update message; a comparator which compares the at least one characteristic with third preprogrammed information indicating at least one preprogrammed characteristic to determine whether the activity is of interest to the system; a selector to receive activity which the comparator determines to be of interest wherein the operation of the receiver, the decoder, the comparator, and the selector are controlled by a processor.

(JX-0005 at 8:9-33, 8:45-47, 9:30-48, 10:10-36.).

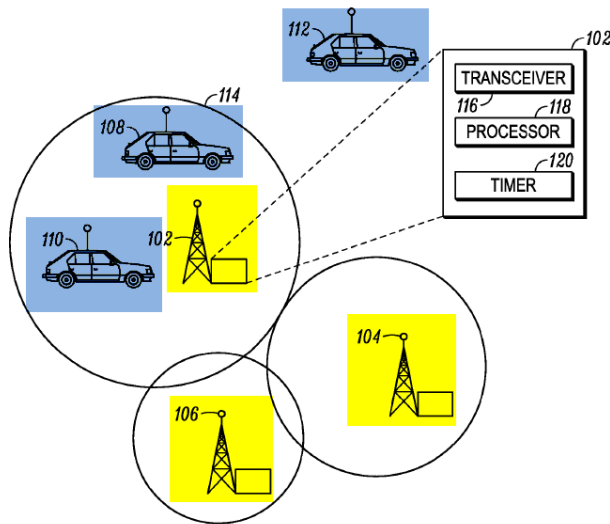
C. U.S. Patent No. 7,729,701 (“the ’701 Patent”)

1. Overview of the ’701 Patent

The ’701 patent, titled “Method and System of Accessing a De-Keyed Base Station,” was filed on July 28, 2005, as U.S. Patent Application Serial No. 11/191,563 (“the ’563 application”). (JX-0007 at (21), (22), (54).). The ’563 application issued as the ’701 patent on June 1, 2010, and names David G. Wiatrowski, Thomas B. Bohn, and Thomas J. Senese as the inventors. (*Id.* at (10), (45), (75).). Motorola Solutions, Inc. is the assignee of the ’701 patent. (CX-0605; *see also* JX-0007 at (73).).

The invention described in Motorola’s ’701 patent was intended to improve the efficiency and reliability of communications between a base station and mobile station in a wireless communications system. As the patent explains (and as explained in Section IX.B.1), in a TDMA wireless communications system, mobile stations communicate using base stations over a radio medium or spectrum. (JX-0007 at 1:29-36.). Figure 1 from the ’701 patent (Figure No. 7 below) illustrates such a system with base stations (elements 102, 104, and 106) shown in yellow and mobile stations (elements 108, 110, and 112) located in cars shown in blue:

Figure No. 7: Block Diagram of a Wireless Communication Landscape



(JX-0007 at Fig. 1 (annotated).).

As shown in the upper right-hand portion of Figure No. 7, the base stations (also called repeaters) include transceivers (element 116), processors (element 118), and timers (element 120), and provide synchronization for mobile stations. (*See, e.g., id.* at 80 1:29-36, 3:13-17.). The base stations, for example, provide control signaling that identifies the temporal position of each time slot within the spectrum. (*Id.* at 1:32-36.). Once a mobile station receives synchronization or timing information from the base station in a TDMA system, the mobile station can use that information to time its use of the spectrum, sending transmissions to the base station at the proper time on the base station’s “uplink” (the direction from mobile station to base station). (*Id.; see also id.* at 3:35-40.). The base station acts as an “intermediary” and repeats properly synchronized transmissions over its “downlink” (the direction from the base station to mobile stations) to be received by other mobile stations. (*Id.* at 3:1-6, 3:35-40.).

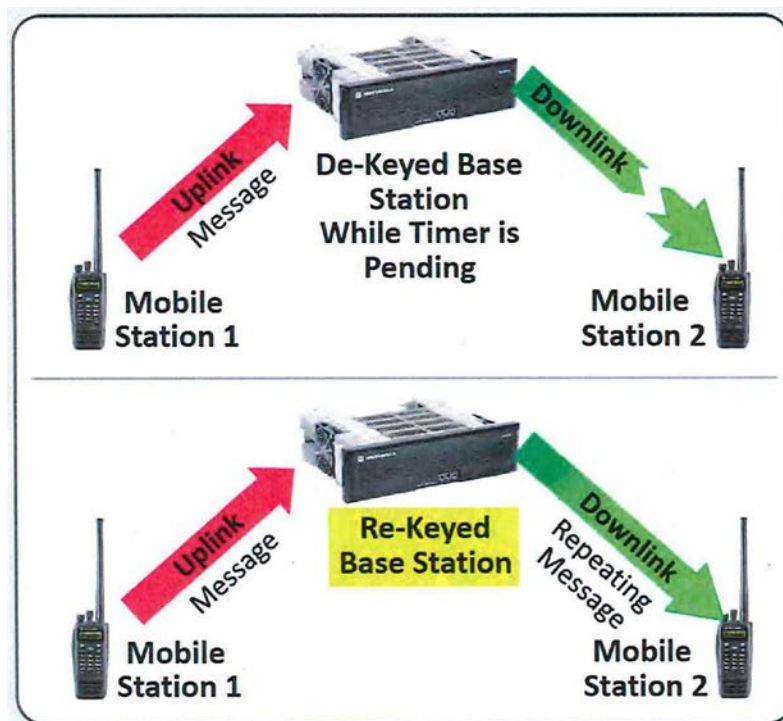
In a typical TDMA system, there were problems with this base station “wakeup” process that caused the loss of (often critical) information. (*Id.* at 2:8-10.). Because it takes time for a

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mobile station to detect that a base station has de-keyed in these systems, there will be a period of time after the base station has de-keyed when the mobile station does not yet know the base station has done so. (*Id.* at 1:59-67.). During this period, a mobile station may send a transmission, such as voice or data destined for another mobile station, expecting that the transmission will be repeated by the base station for receipt by the other mobile station. However, because the base station is de-keyed, the mobile station's transmission is "ignored." (*Id.* at 1:67-2:6.). As the patent explains, "[i]gnoring communications is a problem because the user of the [mobile station] does not have knowledge that the communications have not been received by the intended recipient of the communications." (*Id.* at 2:7-10.). For example, emergency personnel may "not [be] aware that [an] emergency communication has not reached its intended recipient [.]" (*Id.* at 2:10-15.)

The inventors of the '701 patent, Motorola engineers, addressed the problems of information loss and unreliability in prior art TDMA systems by inventing technology for "re-keying" a base station and repeating the mobile station transmissions without receiving a "wakeup" message from the mobile station. (*Id.* at 5:6-10.). By using a "temporary de-keyed state," the base station, although de-keyed, will still recognize a properly synchronized transmission from a mobile station. It will re-key and then repeat the properly synchronized transmission. (*See Id.* at 4:63-5:6.). In a "conventional TDMA system," a key claim term whose construction Motorola and Hytera agreed upon, there is a separate "controller" that manages or "controls" communications between the base station and a mobile station. (*See* Chart No. 10; *see also* JX-0007 at 1:19-36; Tr. (Wicker) at 369:22-370:3.).

Figure No. 8: Illustration Showing the Post-De-Key Timer Described in the '701 Patent



(CDX-0005C-192.).

2. Asserted Claims of the '701 Patent

Remaining asserted claims 1 and 11 of the '701 patent are recited below.²⁹ They are method claims directed to accessing a base station in TDMA communication systems.

1. In a conventional TDMA communications system, wherein the conventional TDMA communications system comprises at least one base station and at least one mobile station, a method of accessing a de-keyed base station comprising: de-keying a base station in the conventional TDMA communications system; starting a timer in the base station when the base station de-keys; receiving a transmission from a mobile station; and re-keying and repeating the transmission, if the transmission is received with proper synchronization before expiration of the timer.

11. The method of claim 1 further comprising requiring a wakeup message from the mobile station before re-keying the base station at expiration of the

²⁹ Bolded patent claim numbers indicate independent claims.

timer.

(JX-0007 at 7:32-44, 8:11-13.).

D. U.S. Patent No. 8,279,991 (“the ’991 Patent”)

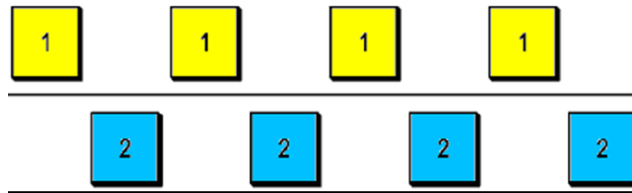
1. Overview of the ’991 Patent

The ’991 patent, titled “Method of Efficiently Synchronizing to a Desired Timeslot in a Time Division Multiple Access Communication System,” was filed on December 9, 2008, as U.S. Patent Application Serial No. 12/331,189 (“the ’189 application”). (JX-0009 at (21), (22), (54).). The ’189 application issued as the ’991 patent on October 2, 2012, and names David G. Wiatrowski, Dipendra M. Chowdhary, and Thomas B. Bohn as the inventors. (*Id.* at (10), (45), (75).). Motorola Solutions, Inc. is the assignee of the ’991 patent. (CX-1267; *see also* JX-0009 at (73).).

The ’991 patent discloses a method for transmitting communications in a TDMA system. (*See, e.g.*, JX-0009 at 3:17-21, 3:58-62.). By way of background, a TDMA system is one that divides a frequency channel into successive timeslots for individual communication. For example, Figure No. 9 (Figure 7 of the ’991 patent (excerpted below)) depicts a system with two timeslots per frequency channel (timeslot 1, highlighted in yellow; timeslot 2, highlighted in blue):³⁰

³⁰ This is referred to in the patent as a “2:1 slotting structure” because there are “2” timeslots for each “1” frequency channel. (*See* JX-0009 at 4:6-12, 5:6-17, 11:30-32.).

Figure No. 9: Timing Diagram of Two Direct-Mode Transmissions



(*Id.* at Fig. 7 (annotated); *see also id.* at 4:67-5:3.).

Each timeslot reflects a brief period of time during which network devices can transmit or receive communications. (*Id.*) In a TDMA system, in preparing to transmit on a desired timeslot, a transmitting device “synchronizes” with the timeslot, if possible—i.e., it attempts to determine where the timeslot begins and ends. (*See id.* at 1:38-41 (“Before a subscriber unit is allowed to receive or transmit on a TDMA channel, it must ensure that it is synchronized with the desired timeslot.”)).

As the ’991 patent recognizes, problems existed with prior art synchronization processes—including the synchronization process specified in the European Telecommunications Standard Institute-Digital Mobile Radio (“ETSI-DMR”) standard—that resulted in inefficient use of channel resources during transmission. (*See, e.g., id.* at 1:36-2:24.). For example, the ETSI-DMR standard did not include a message to identify timeslots on the channel when two devices are operating in “direct mode” (i.e., communicating directly, not through a repeater). (*Id.* at 2:11-24, 4:55-59.). Thus the standard “only allow[ed] up to one subscriber unit to transmit in direct mode on a frequency at a time.” (*See, e.g., id.* at 2:14-17.). This inefficiency “leaves a significant portion of the channel unoccupied.” (*Id.*) The problems with the ETSI-DMR standard systems also “limit[ed] performance in systems that require the receiving device to change channels frequently.” (*Id.* at 2:1-2.).

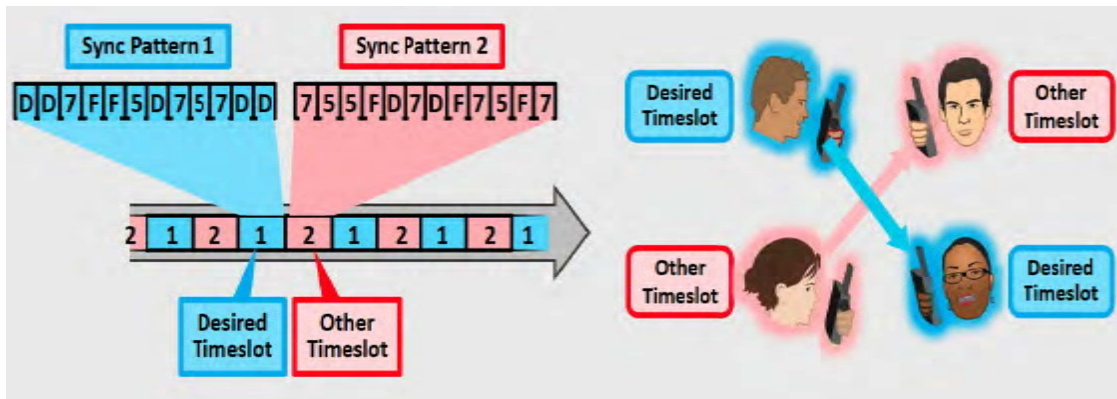
To overcome these problems and greatly increase the efficiency of channel resource

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usage during transmission in a TDMA system, the '991 patent discloses the use of synchronization patterns that, unlike prior art synchronization patterns in the ETSI-DMR standard, correspond to specific timeslots on a frequency. (*See id.* at 5:24-26.). For instance, the '991 patent describes a “two slot TDMA communication system” in which the transmitting device knows a different set of synchronization patterns associated with each of the two timeslots on a frequency. (*Id.* at 5:8-9; *see also id.* at 5:56-61; 6:27-30.).

In one embodiment, the transmitting device can transmit on either timeslot 1 (*see id.* at 5:32-33) or timeslot 2 (*id.* at 6:11-13). When preparing to transmit on a timeslot, the transmitting device can detect the synchronization patterns on the frequency and, because the patterns are associated with specific timeslots, the device can easily determine which timeslots are “busy” (in use) or “idle” (not in use). (*See, e.g., id.* at 14:1-6.). In this way, the transmitting device, such as a repeater or a subscriber, can select a timeslot for transmission based on whether a timeslot is idle or busy—i.e., the timeslot for transmission can change “dynamically” “as frequencies in the system become usable or unusable based on the detected presence or absence of co-channel users or as timeslots on a frequency in the system become busy and/or idle[.]” (*Id.* at 10:28-32.). Once a timeslot is selected for transmission, the transmitting device selects the corresponding synchronization pattern for that timeslot, which notifies other devices in the system that the selected timeslot is now busy. (*See, e.g., id.* at 5:32-33, 6:11-13.).

Figure No. 10: Illustration Showing the Use of Different Sync Patterns to Identify Correct Timeslot



(CDX-0005C-117.).

2. Asserted Claims of the '991 Patent

Remaining asserted claims 7 and 8 of the '991 patent are recited below.³¹ They are method claims directed to timeslot synchronization on TDMA systems.

7. In a time division multiple access (TDMA) system having a plurality of timeslots, a method comprises the steps of: knowing a first set of synchronization patterns associated with a desired timeslot and a second set of synchronization patterns associated with each of the other timeslots in the TDMA system, wherein the first set of synchronization patterns is mutually exclusive from the second set of synchronization patterns, and each set comprising at least two different synchronization patterns as a function of at least one of a payload type and a source of the transmission; preparing to transmit a particular payload type in a timeslot; determining whether the timeslot is a current desired timeslot for the TDMA system; if the timeslot is the current desired timeslot, selecting a synchronization pattern selected from the first set of synchronization patterns based on the one of the particular payload type and a particular source of the transmission; otherwise selecting a synchronization pattern selected from the second set of synchronization patterns based on the one of the particular payload type and the particular source of the transmission; and transmitting a burst in the timeslot having embedded the synchronization pattern that was selected.

8. The method of claim 7 wherein the current desired timeslot at a first

³¹ Bolded patent claim numbers indicate independent claims.

time is different than the current desired timeslot at a second time.

(JX-0009 at 17:36-63.).

V. THE PRODUCTS AT ISSUE

A. Hytera's Accused Products

Motorola accused the following Hytera products of infringing the Asserted Patents.

Chart No. 6: Accused Products

'284 Accused Products³²	RD622, RD622i, RD982, RD982i, RD982S, RD982Si, MD652, MD652i, MD782, MD782i, BD302, BD502, PD362, PD412, PD502, PD502i, PD562, PD562i, PD602, PD602i, PD662, PD662i, PD682, PD682i, PD702, PD702i, PD752, PD752i, PD782, PD782i, PD792, PD792i, PD982, PD982i, X1e, X1p and all variants thereof, including those with DMR Radio & Receiver firmware version 8.03 and PD5 firmware versions 7.06 and later (including code produced as "PD5 Set 21")
'869 Accused Products	MD652, MD782, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, RD622, RD982, X1e, X1p and all variants thereof
'701 Accused Products	RD622, RD982, MD652, MD782, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, X1e, X1p and all variants thereof
'991 Accused Products	MD652, MD782, BD302, BD502, BD362, PD412, PD502, PD562, PD602, PD662, PD682, PD702, PD752, PD782, PD792, PD982, X1e, X1p and all variants thereof

(See, e.g., CPBr. at x.).

³² The redesigned '284 Accused Products consist of the PD5i Series () and PD6i, PD7i, and PD9i (), which is referred hereinafter as "the '284 Redesignated Products." (See CBr. at 13 n.2.). The remaining '284 Accused Products are referred hereinafter as "the '284 Legacy Products."

B. Motorola's DI Products

Motorola alleged that the following DI products practice the Asserted Patents.

Chart No. 7: DI Products

'284 DI Products	MOTOTRBO Base Stations (including XPR 8380; MTR3000; XPR 8400; SLR 5000 Series) and MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series)
'869 DI Products	MOTOTRBO Base Stations (including XPR 8380; MTR3000; XPR 8400; SLR 5000 Series) and MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series)
'701 DI Products	MOTOTRBO Base Stations (including XPR 8380; MTR3000; XPR 8400; SLR 5000 Series) and MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series)
'991 DI Products	MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series)

(*Id.* at xi.).

VI. THE ASSERTED PATENTS

A. Level of Ordinary Skill in the Art

1. Legal Standard

The relevant time for assessing the level of ordinary skill in the art is the effective filing

date of the patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc) (“We have made clear, moreover, that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.”)

Factors to consider in determining the level of ordinary skill in the art include: (1) the educational level of the inventor; (2) the type of problems encountered in the art; (3) the prior art solutions to those problems; (4) the rapidity with which innovations are made; (5) the sophistication of the technology; and (6) the educational level of active workers in the field. *See Env'tl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696 (Fed. Cir. 1983). “These factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art.” *Daiichi Sankyo Co., Ltd. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).

2. Definition of Person of Ordinary Skill in the Art

It was determined that a person of ordinary skill in the art for the '284, '869, '701, and '991 patents would have at least a Bachelor's degree in electrical or computer engineering, or computer science, with at least two or three years of experience in telecommunications and networking, or an equivalent degree and/or experience. (*Markman* Order at 20.). Superior education would compensate for a deficiency in experience, and vice versa. (*Id.*).

B. Claim Construction³³

1. Legal Standard

Claim construction begins with the plain language of the claims themselves. Claims should be given their ordinary and customary meaning as understood by a person of ordinary

³³ The claim constructions for the agreed upon and disputed claim terms are listed in Sections VII.C and VIII.B, *infra*.

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skill in the art, viewing the claim terms in the context of the entire patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006). In some cases, the plain and ordinary meaning of the claim language is readily apparent and claim construction will involve little more than “the application of the widely accepted meaning of commonly understood words.” *Id.* at 1314. In other cases, claim terms have a specialized meaning and it is necessary to determine what a person of ordinary skill in the art would have understood the disputed claim language to mean by analyzing “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, as well as the meaning of technical terms, and the state of the art.” *Id.* (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)).

The claims themselves provide substantial guidance as to the meaning of disputed claim language. *Id.* “[T]he context in which a term is used in the asserted claim can be highly instructive.” *Id.* Likewise, other claims of the patent at issue, “both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term.” *Id.* (citation omitted).

With respect to claim preambles, a preamble may limit a claimed invention if it: (i) recites essential structure or steps; or (ii) is “necessary to give life, meaning, and vitality” to the claim. *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003) (citations omitted). The Federal Circuit has explained that a “claim preamble has the import that the claim as a whole suggests for it. In other words, when the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects.” *Id.* (quoting *Bell Commc’ns*

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Research, Inc. v. Vitalink Commc'ns Corp., 55 F.3d 615, 620 (Fed. Cir. 1995)). When used in a patent preamble, the term “comprising” is well understood to mean “including but not limited to,” and thus, the claim is open-ended. *CIAS, Inc. v. Alliance Gaming Corp.*, 504 F.3d 1356, 1360 (Fed. Cir. 2007). The patent term “comprising” permits the inclusion of other unrecited steps, elements, or materials in addition to those elements or components specified in the claims.

Id.

In cases where the meaning of a disputed claim term in the context of the patent’s claims remains uncertain, the specification is the “single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1321. Moreover, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Id.* at 1316. As a general rule, however, the particular examples or embodiments discussed in the specification are not to be read into the claims as limitations. *Id.* at 1323.

The prosecution history may also explain the meaning of claim language, although “it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.* at 1317. The prosecution history consists of the complete record of the patent examination proceedings before the U.S. Patent and Trademark Office (“PTO”), including cited prior art. *Id.* It may reveal “how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.*

If the intrinsic evidence is insufficient to establish the clear meaning of a claim, a court

may resort to an examination of the extrinsic evidence.³⁴ *Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc.*, 206 F.3d 1408, 1414 (Fed. Cir. 2000). Extrinsic evidence may shed light on the relevant art, and “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Phillips*, 415 F.3d at 1317. In evaluating expert testimony, a court should disregard any expert testimony that is conclusory or “clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.” *Id.* at 1318. Expert testimony is only of assistance if, with respect to the disputed claim language, it identifies what the accepted meaning in the field would be to one skilled in the art. *Symantec Corp. v. Comput. Assocs. Int’l, Inc.*, 522 F.3d 1279, 1289 n.3., 1290-91 (Fed. Cir. 2008). Testimony that recites how each expert would construe the term should be accorded little or no weight. *Id.* Extrinsic evidence is inherently “less reliable” than intrinsic evidence, and “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Phillips*, 415 F.3d at 1318-19.

VII. U.S. PATENT NO. 8,116,284

A. Legal Standard: Direct Infringement

“Determination of infringement is a two-step process which consists of determining the scope of the asserted claim (claim construction) and then comparing the accused product . . . to the claim as construed.” *Certain Sucralose, Sweeteners Containing Sucralose, and Related Intermediate Compounds Thereof*, Inv. No. 337-TA-604, Comm’n Op. at 36 (U.S.I.T.C., April

³⁴ “In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.” *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996).

28, 2009) (citing *Litton Sys., Inc. v. Honeywell, Inc.*, 140 F.3d 1449, 1454 (Fed. Cir. 1998)).

1. Literal Infringement

An accused device literally infringes a patent claim if it contains each limitation recited in the claim exactly. *Litton*, 140 F.3d at 1454. Each patent claim element or limitation is considered material and essential. *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991). In a Section 337 investigation, the complainant bears the burden of proving infringement of the asserted patent claims by a preponderance of the evidence. *Enercon GmbH v. Int'l Trade Comm'n*, 151 F.3d 1376, 1384 (Fed. Cir. 1998). If any claim limitation is absent, there is no literal infringement of that claim as a matter of law. *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000).

2. Infringement Under the Doctrine of Equivalents

Where literal infringement is not found, infringement can still be found under the doctrine of equivalents. “Infringement under the doctrine of equivalents may be found when the accused device contains an ‘insubstantial’ change from the claimed invention. Whether equivalency exists may be determined based on . . . the ‘triple identity’ test, namely, whether the element of the accused device “performs substantially the same function in substantially the same way to obtain the same result.” *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1376-77 (Fed. Cir. 2008) (citations omitted). The essential inquiry here is whether “the accused product or process contain elements identical or equivalent to each claimed element of the patented invention[.]” (*Id.*)

B. Overview of Infringement and Motorola’s and Hytera’s Disputes in Brief

Motorola alleged that the accused ’284 Legacy Products and ’284 Redesigned Products infringe claims 9, 13, 14, and 15 of the ’284 patent. (CBr. at 4-17.). Motorola is correct. As set

forth in the claim-by-claim analysis that follows, the '284 Legacy Products always try to select or re-select default slot 1 first before establishing a new communication. The '284 Redesigned Products, as compared to '284 Legacy Products, retain a “default timeslot” but introduce a potential delay in re-selecting the “default timeslot” by persisting on a “temporary” timeslot until that timeslot becomes unavailable (potentially over multiple communications). In so doing, the '284 Redesigned Products still infringe, but less often. Thus, the '284 Legacy Products and the '284 Redesigned Products infringe claims 9, 13, 14, and 15 of the '284 patent.

C. Relevant Claim Terms

The following constructions of the claim terms recited in the asserted claims of the '284 patent have been agreed upon by the Parties or adopted by this Court.³⁵

Chart No. 8: Constructions of Claim Terms Relevant to the '284 Patent³⁶

Claim Term	Construction
“a talkgroup” (claims 9 and 15)	A plurality of radio communication devices. (<i>Markman</i> Order, App’x A at Chart 1.).
“an assigned default timeslot”/ “the default timeslot” (claims 9 and 15)	Plain and ordinary meaning. (<i>Id.</i>).
“the radio communication device searching for an available timeslot when the default timeslot is unavailable”/ “when the default timeslot is unavailable the processor instructs the radio communication circuitry to search for an available timeslot”/ “when the default	Plain and ordinary meaning. (<i>Id.</i>).

³⁵ The Parties disputed the meaning of additional claim terms recited in claims that have been terminated from this Investigation. Those terms are not included in Chart No. 8.

³⁶ During the *Markman* proceedings, all of the claim terms in Chart No. 8 were disputed. (*See* Joint CC Chart at 3-4.).

Claim Term	Construction
timeslot is unavailable each of the radio communication devices searches for an available timeslot” (claims 9 and 15)	
“the radio communication device re-selecting the default timeslot for communicating with the talkgroup when the default timeslot becomes available”/ “when the default timeslot becomes available the processor instructs the radio communication circuitry to re-select the default timeslot for communicating with the talkgroup”/ “when the default timeslot becomes available each of the radio communication devices re-select the default timeslot for communicating with the talkgroup” (claims 9 and 15)	Plain and ordinary meaning. (<i>Id.</i>).
“a common assigned default timeslot” (claim 15)	An assigned default timeslot that is shared by all radio communication devices in the talkgroup. (<i>Id.</i> , App’x A at Chart 2.).
Whether the claimed steps must be performed to completion in order (claim 1) ³⁷	The claimed steps must be performed in order. (<i>Id.</i>).

D. The ’284 Legacy Products Infringe Claims 9, 13, 14, and 15 of the ’284 Patent

1. Claim 9 of the ’284 Patent

- a) **“A radio communication device having an assigned default timeslot for communicating with a talkgroup of other radio communication devices”**

³⁷ Although claim 1 of the ’284 patent has been terminated, claims that depend from it remain at issue. Thus, the claim remains at issue in connection with the dependent claims. (Joint Claim Chart (Doc. ID No. 628354) (Nov. 8, 2017).).

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Motorola provided persuasive evidence that the '284 Legacy Products satisfy the preamble of Claim 9 by operating in Pseudo Trunk Direct Mode ("PT-DMO"), Pseudo Trunk Repeater Mode ("PT-RMO"), and eXtended Pseudo Trunking Mode ("XPT").

In PT-DMO, subscribers [REDACTED] (Tr. (Wicker) at 191:24-192:13; CX-0146C.11 [REDACTED]); CX-0316C.29 ([REDACTED]); Tr. (Zheng) at 897:24-898:16, 899:15-16; CX-0749C; CPX-0152C at ll. 4028-31; Tr. (Wicker) at 193:23-194:7.). This default timeslot is for "communicating with a talkgroup," as it is used by two or more radios to communicate. (Tr. (Wicker) at 190:12-22; CX-0146C.12.).

In PT-RMO, subscribers [REDACTED]. (Tr. (Wicker) at 194:23-195:7; CX-0146C at 14 [REDACTED]; CX-0316C.30 ([REDACTED]); CX-0749C (Zheng Dep. Tr.) at 36:19-22.). The assigned default timeslot—timeslot 1—is for communicating with a talkgroup. (Tr. (Wicker) at 190:12-22; CX-0146.14 (showing subscribers communicating via a common timeslot).).

In XPT, each subscriber [REDACTED] (Tr. (Wicker) at 195:19-197:9; CX-0067C.11 [REDACTED]); CX-1405C.24 ([REDACTED]); CX-749C (Zheng Dep. Tr.) at 82:4-10.). This assigned default timeslot is for communicating with a talkgroup. (Tr. (Wicker) at 190:23-194:6; CX-1287.4 (showing subscribers communicating via their home repeater in XPT).).

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In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Accused Products meet the preamble recited in claim 9.

b) “the radio communication device comprising: radio communication circuitry”

Motorola provided persuasive evidence that the '284 Legacy Products satisfy the claim limitation. Any wireless radio has “radio communication circuitry” to allow wireless communication with other radios. (Tr. (Wicker) at 200:20-201:21 (testifying about product manuals showing processors coupled to the radio communication circuitry, including, e.g., CX-1357C.32-33).).

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 9.

c) “the radio communication device comprising: . . . a processor coupled to the radio communication circuitry”

Motorola provided persuasive evidence that the '284 Legacy Products satisfy this limitation. Each of the '284 Accused Products has a processor coupled to the radio communication circuitry. (Tr. (Wicker) at 201:22-202:12, 202:13-15, 202:23-203:5; CX-1357C.32-35).

Because Hytera did not provide rebuttal evidence on this claim limitation in its Initial

Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

Thus, for the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 9.

- d) “wherein in operation the processor: determines, from a signal provided by the radio communication circuitry, if the default timeslot is available for the radio communication device to communicate with the talkgroup”**

Motorola provided persuasive evidence that the '284 Legacy Products satisfy this limitation when operating in PT-DMO, PT-RMO, and XPT Modes.

For PT-DMO, processors [REDACTED]
[REDACTED]
[REDACTED]. (CX-0316C at 29 ([REDACTED])
[REDACTED]
[REDACTED]); Tr. (Wicker) at 204:17-205:2; CX-0749C (Zheng Dep. Tr.) at 56:24-57:3, 57:4-10, 58:2-12.).

For PT-RMO, when starting a call, processors [REDACTED]
[REDACTED]. (CX-0316C.30 ([REDACTED])
[REDACTED]); Tr. (Wicker) at 205:3-19.).

For XPT, processors [REDACTED]
[REDACTED]. (Tr. (Wicker) at 205:20-206:14 ([REDACTED])
[REDACTED]); CX-1810C.30;

CX-1405C.66 ([REDACTED] [REDACTED]).).

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 9.

- e) **“when the default timeslot is unavailable the processor instructs the radio communication circuitry to search for an available timeslot”**

Motorola provided persuasive evidence that the '284 Legacy Products satisfy this limitation operating in PT-DMO, PT-RMO, and XPT.

For PT-DMO, the '284 Legacy Products [REDACTED] [REDACTED]. (Tr. (Wicker) at 206:24-208:3; CX-0316C.29 and CX-0146C.11 ([REDACTED] [REDACTED]); CPX-0152C at ll. 4028-4042 (Hytera's source code confirms that [REDACTED] [REDACTED] [REDACTED] [REDACTED]); Tr. (Zheng) at 899:17-20.).

For PT-RMO, the '284 Legacy Products [REDACTED] [REDACTED]. (Tr. (Wicker) at 208:4-209:14; CX-0316C.30 [REDACTED] [REDACTED]); CX-1325C.18 ([REDACTED] [REDACTED]).

[REDACTED]

[REDACTED]).).

For XPT, the '284 Legacy Products [REDACTED]

[REDACTED]

[REDACTED]. (Tr. (Wicker) at 200:20-201:13, 209:15-210:1;

CX-1405C.66.). [REDACTED]

[REDACTED]

[REDACTED]. (Tr. (Wicker) at 210:4-19; CX-1405C.66.).

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

Therefore, for the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 9.

- f) **“when the default timeslot is unavailable the processor instructs the radio communication circuitry to . . . temporarily select the available timeslot as a temporary selected group timeslot for the talkgroup”**

Motorola provided persuasive evidence that the '284 Legacy Products satisfy this limitation operating in PT-DMO, PT-RMO, and XPT.

For PT-DMO, the '284 Legacy Products [REDACTED]

[REDACTED]. (Tr. (Wicker) at 211:3-10; CX-0316C.29

([REDACTED]); CX-0146C.11.).

For PT-RMO, the '284 Legacy Products [REDACTED]

[REDACTED]. (Tr. (Wicker) at 211:11-25; CX-

0316C.30; CX-1325C.18 ([REDACTED]).

For XPT, the '284 Legacy Products satisfy this limitation in two ways. (CX-1322C.39; Tr. (Wicker) at 212:17-213:5.). First, [REDACTED] . (Tr. (Wicker) at 212:1-9; CX-1405C.66.). Second, [REDACTED] . (Tr. (Wicker) at 212:10-16; CX-1405C.66.). [REDACTED] . (Tr. (Wicker) at 212:1-16.).

Because Hytera failed to provide any rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 9.

- g) “when the default timeslot becomes available the processor instructs the radio communication circuitry to re-select the default timeslot for communicating with the talkgroup”**

Motorola provided persuasive evidence that the '284 Legacy Products satisfy this limitation operating in PT-DMO, PT-RMO, and XPT.

For PT-DMO, [REDACTED] . (Tr. (Wicker) at 216:5-9; CX-0316C.29 ([REDACTED]); CX-0146C.11.).

For PT-RMO, [REDACTED]

[REDACTED].
(Tr. (Wicker) at 216:10-217:14; CX-1325C.18.).

For XPT, the '284 Legacy Products [REDACTED]
[REDACTED]. (CX-1322C.39 ([REDACTED]
[REDACTED]); CX-0416C.7 ([REDACTED]
[REDACTED]); Tr. (Wicker)
at 217:15-25, 218:13-25, 220:4-11 ([REDACTED]
[REDACTED]).).

In rebuttal, Hytera resurrected a claim construction argument that it already lost. According to Hytera, it is “beyond dispute that the Legacy Hytera Products do not select a timeslot when it is available, but instead [REDACTED].” (RBr. at 16 (citing Tr. (Zheng) at 870:2-871:7; RDX 0001.2; RPX-0399C at lines 3380, 3411; Tr. (Akl) at 996:22-998:7; RDX 0003.3-3.4).). That argument was squarely rejected. (*Markman Order*, Appx. A at 11 (use of “when” in the claims does not mean “as soon as” because such a restriction is not supported by the claims or specification).). This decision agrees with Motorola that “[n]othing in the patent requires reselection to occur at the end of a communication, let alone excludes it from occurring at the start of a communication.” (CBr. at 11 (citing JX-0001 at cl. 9; Tr. (Wicker) at 562:21-563:17; JX-0001 at 4:51-55 (“[I]f the radio communication device determines that the default timeslot (slot 1) is available for the radio communication device to communicate with the talkgroup, the radio communication device selects or re-selects the default timeslot at step 315.”)). A patent need not disclose every embodiment of an invention. *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998). In other words, this “reselection” limitation covers an embodiment (whether it was explicitly disclosed in the

specification or not) in which reselection occurs when “the mobile station must make a new call,” which, according to Hytera’s expert, [REDACTED]. (Tr. (Akl) at 1182:2-8 ([REDACTED] [REDACTED])).

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the ’284 Legacy Products meet this claim limitation and infringe claim 9 of the ’284 patent.

2. Claim 13 of the ’284 Patent

- a) **“The radio communication device, as claimed in claim 9, wherein the signal provided by the radio communication circuitry is generated from information sent from a repeater station.”**

Motorola provided persuasive evidence that the ’284 Legacy Products satisfy this additional claim limitation operating in PT-RMO and XPT. In PT-RMO and XPT, the subscriber [REDACTED] [REDACTED]. (Tr. (Wicker) at 223:19-224:18, 225:6-14, 225:20-24; CX-0749C (Zheng Dep. Tr.) at 92:13-94:20, 96:13-17, 96:23-97, 221:16-222:1, 222:10-223:18; CPX-0242C at ll. 1489-1613; CX-1322C.19 ([REDACTED] [REDACTED])).

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed, Motorola has proven by a preponderance of evidence that the ’284 Legacy Products meet this additional claim limitation and infringe claim 13 of the ’284 patent.

3. Claim 14 of the '284 Patent

- a) **“The radio communication device, as claimed in claim 13, wherein the information sent from the repeater station is provided in a common announcement channel.”**

As described with respect to how the '284 Legacy Products satisfy the additional limitation of claim 13, Motorola provided persuasive evidence that the '284 Accused Multipipe Products also satisfy the additional limitation set forth in claim 14, operating in PT-RMO and XPT. (Tr. (Wicker) at 223:19-224:18, 225:6-14, 225:20-24; CX-0749C (Zheng Dep. Tr.) at 92:13-94:20, 96:13-17, 96:23-97, 221:16-222:1, 222:10-223:18; CPX-0242C at ll. 1489-1613; CX-1322C.19 ([REDACTED]).).

Hytera did not provide rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this additional limitation and infringe claim 14 of the '284 patent.

4. Claim 15 of the '284 Patent

- a) **“A wireless communication system comprising”**

Motorola provided persuasive evidence that the '284 Legacy Products satisfy this preamble, operating in XPT and PT-RMO. XPT and PT-RMO each [REDACTED]
[REDACTED]
[REDACTED]. (Tr. (Wicker) at 220:19-23.).

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

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For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet the preamble of claim 15.

b) “a plurality of radio communication devices forming a talkgroup”

As described above with respect to how the '284 Legacy Products satisfy claim limitation 9(a), Motorola offered persuasive evidence that the '284 Legacy Products also satisfy this limitation of Claim 15. (Tr. (Wicker) at 188:17-189:8.).

Because Hytera did not provide rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

Therefore, for the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 15.

c) “at least one repeater station through which the radio communication devices communicate”

Motorola provided persuasive evidence that the '284 Legacy Products satisfy this claim limitation. XPT and PT-RMO [REDACTED]. (CX-0146C.14 ([REDACTED] [REDACTED]); CX-1287.4 (showing same for XPT); CX-0315C.43 (same); Tr. (Wicker) at 203:11-204:1.).

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument that Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet the preamble of claim 15.

- d) **“wherein each of the radio communication devices have a common assigned default timeslot for communicating with the talkgroup”**

As described above with respect to how the '284 Legacy Products satisfy claim limitation 9(a), Motorola provided persuasive evidence that the '284 Legacy Products also satisfy this limitation of Claim 15. (Tr. (Wicker) at 188:17-189:8.).

Hytera did not provide rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 15.

- e) **“wherein each one of the radio communication devices: determines if the default timeslot is available to communicate with the talkgroup”**

As described above with respect to how the '284 Legacy Products satisfy claim limitation 9(d), Motorola provided persuasive evidence that the '284 Legacy Products also satisfy this limitation of Claim 15. (Tr. (Wicker) at 188:17-189:8.).

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 15.

- f) **“when the default timeslot is unavailable each of the radio communication devices searches for an available timeslot and temporarily selects the available timeslot as a temporary selected group timeslot for the talkgroup”**

As describe above with respect to how the '284 Legacy Products satisfy claim limitation 9(e), Motorola provided persuasive evidence that the '284 Legacy Products also satisfy this limitation of Claim 15. (Tr. (Wicker) at 188:17-189:8.).

In its Initial Post-Hearing Brief, Hytera failed to provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 15.

- g) **“when the default timeslot becomes available each of the radio communication devices re-select the default timeslot for communicating with the talkgroup”**

As discussed above with respect to how the '284 Legacy Products satisfy claim limitation 9(f), Motorola provided persuasive evidence that the '284 Legacy Products also satisfy this limitation of Claim 15. (Tr. (Wicker) at 188:17-189:8.).

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Legacy Products meet this limitation of claim 15.

E. The '284 Redesigned Products Do Not Literally Infringe Claims 9, 13, 14, and 15 of the '284 Patent, But Do Infringe Under the Doctrine of Equivalents

As an initial matter, this ID rejects Motorola's suggestion that the Commission does not

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have jurisdiction over Hytera's '284 Redesigned Products. Motorola argued, belatedly, and contrary to evidence, that the '284 Redesigned Products were not "sufficiently fixed to be adjudicated in the present Investigation." Additionally, Motorola initially argued that Hytera introduced "no documents about the allegedly redesigned products," "no documentary evidence of [its] alleged [FCC] submission," and no "evidence to substantiate its assertion that it has imported [REDACTED] with the redesigned software into the U.S." (CBr. at 3.). For the reasons described, *supra*, in Section III.A (importation), Motorola's argument is incorrect and unsupported. (RRBr. at 8-9.).

Hytera produced source code, made a corporate witness available for deposition, and provided evidence to Motorola and during the evidentiary hearing that Hytera submitted the '284 Redesigned Products for FCC approval. (Tr. (Wicker) at 226-37, 229:19-24, 446-52; Tr. (Akl) at 936:16-20; CX-1632C (Zheng Dep.) at 13:25-14:3, 14:11-21, 16:7-11.). Ms. Zheng's deposition confirmed that Hytera had imported '284 Redesigned Products loaded with redesigned software into the United States. (CX-1632C (Zheng Dep.) at 16:23-17:3; *see also* CBr. at 3.). In the discussion that follows, it is abundantly clear that Motorola had sufficient discovery of the '284 Redesigned Products to evaluate their operation and formulate infringement theories.

Additionally, Motorola offered both documentary and testimonial evidence that the '284 Redesigned Products operate like much like the '284 Legacy Products, with only one material difference in terms of assessing infringement of the '284 patent. (Tr. (Wicker) at 226:21-227:3, 230:4-9, 232:12-233:11; CPX-0351C ([REDACTED]); CPX-0353C ([REDACTED]); CX-1632C (Zheng Dep. Tr.) at 44:13-22.). The operational difference goes directly to whether the '284 Redesigned Products have a "default timeslot." For the reasons set forth below, for purposes of literal infringement, the '284 Redesigned Products do

not have such a timeslot and thus do not literally infringe. However, the '284 Redesigned Products do have the equivalent of a “default timeslot,” and thus infringe under the doctrine of equivalents (“DOE”).

1. Motorola Failed to Prove Literal Infringement

Motorola provided evidence that [REDACTED]

[REDACTED]
[REDACTED]. (Tr. (Wicker) at 233:6-11; CX-1632C (Zheng Dep. Tr.) at 47:18-24 (Pseudo Trunk), 48:3-9 (Pseudo Trunk), 48:12-16 (Pseudo Trunk), 48:18-23 (Pseudo Trunk), 52:10-20 (Pseudo Trunk), 65:6-21 (XPT)). [REDACTED]

[REDACTED], which Motorola asserted is a “default timeslot.” (*Id.*). In other words, in the '284 Redesigned Products, [REDACTED]

By contrast, as discussed above, [REDACTED]

[REDACTED]. (Tr. (Wicker) at 216:5-217:25, 218:13-25, 220:4-11; CX-0316C.29; CX-0146C.11; CX-1325C.18; CX-1322C.39; CX-0416C.7.). In other words, [REDACTED]

[REDACTED]. As discussed above, this modality of operation clearly satisfies the “default timeslot” limitation.

Motorola acknowledged that Hytera’s “redesign” operated in a slightly different manner

than the '284 Legacy Products by [REDACTED]

[REDACTED]. (CBr. at 13 (citing Tr. (Wicker) at 227:3-7, 230:19-231:5).). According to Motorola, the '284 Redesigned Products in operation satisfy the “default timeslot” limitation only some of the time. By way of example, under Motorola’s theory, literal infringement would occur when the '284 Redesigned Products [REDACTED]

According to Hytera, “the New Hytera Accused Products do not infringe because [REDACTED]

[REDACTED] (RBr. at 17.). Hytera elaborated that [REDACTED]

[REDACTED] (*Id.*). In so

doing, Hytera failed to address the arguably somewhat preferential role, accorded by the '284 Redesigned Products, to [REDACTED]

[REDACTED]. Hytera did not dispute Motorola’s characterization of how the '284 Redesigned Products operate, but instead argued that the definition of a “default timeslot” required that “the timeslot [is] chosen (i.e., at any time) unless another is specified.”

(RBr. at 18; CBr. at 15 (citing Tr. (Wicker) at 231:17-25, 232:2-4; Tr. (Akl) at 1189:1-1190:11; Tr. (Zheng) at 16-23, 902:13-16, 900:24-901:2).). Stated another way, Hytera argued that a timeslot is not a “default timeslot” unless it plays that role all of the time, such that communications always occur on that timeslot if it is available. Hytera’s argument is correct.

The *Markman* Order explained the meaning of the term “default timeslot.” The *Markman* Order explains that the “claim language therefore sets forth precisely why it is the default timeslot—it is the timeslot that the radio communication device is assigned unless it is

unavailable *and* another ‘temporary’ timeslot is used.” (*Id.* at 7-8 (emphasis added).). In other words, the “default timeslot” is preferred over (i.e., not a co-equal to) other timeslots for communications insofar as it is always selected if it is available.

That said, the ’284 patent does not limit the mechanics of how one default selects or prefers one timeslot over other timeslots, as long as the preferential treatment occurs between communications. That is why Hytera’s attempt to import a temporal restriction that the default timeslot must be selected as soon as a communication ends and not shortly before the next communication begins was denied. (*Id.* at 11-12 (Hytera and Motorola agreed that the asserted claims do “not require switching mid-communication from a temporary timeslot to the default timeslot if the default timeslot becomes available in the middle of the communication.”).).

Hytera’s argument that a “default timeslot” must be “predetermined,” because the claims “are silent as to when the default timeslot is ‘assigned,’ let alone that it must be ‘predetermined’” and adding that “[t]o the extent that Respondents are asserting that the default timeslot ... is assigned before the radio communication device determines whether it is available, that is already set forth in the claim language” was also rejected.³⁸ (*Id.* at 9-10.).

In determining whether changes Hytera made in the ’284 Redesigned Products absolve them of literal infringement, the key issue is whether “default timeslot” is broad enough to cover a fallback timeslot that is selected some, but not all, of the time when it is available for selection by a radio communication device seeking to initiate a communication.

³⁸ It bears noting that Motorola has failed to prove that [REDACTED] . (See Section VII.F.2.).

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Without addressing the *Markman* Order that a “default timeslot” is a timeslot that “is assigned unless it is unavailable,” Motorola made the accurate but incomplete argument that “nothing in the ’284 patent claims or specification requires that the ‘temporary’ timeslot be used for only one communication.” (CBr. at 15 (citing JX-0001 at 4:34-40).). Under the teachings of the ’284 patent, the hypothetical scenario presented by Motorola’s argument is conceivable (although by no means assured) only when a particular operational condition is satisfied, that is when the “default timeslot” is unavailable for consecutive communications. Moreover, Hytera’s argument is correct that Motorola’s incomplete “default timeslot” interpretation is so broad that it would cover “bizarre results,” such as a device that conducts thousands of communications on a “temporary” timeslot before returning to a “default timeslot. Motorola acknowledged that such a scenario is unlikely to occur in the field. (RBr. at 17; CRBr. at 8 (citing Tr. (Wicker) at 569:2-15, 569:23-570:8).).

While it is a close call, it is a finding of this ID that the ’284 Redesigned Products do not literally infringe the ’284 patent. The *sine qua non* of a “default timeslot” is its special treatment *vis-à-vis* other timeslots in terms of acting as an always-preferred timeslot hub or home base for radio communications. (*Markman* Order, App’x A at 7-8 (“default timeslot—it is the timeslot that the radio communication device is assigned unless it is unavailable *and* another ‘temporary’ timeslot is used.”) (emphasis added); JX-0001 at Abstract (“The radio communication device ... searches for an available timeslot, when the default timeslot is unavailable.”).). “Always-preferred” does not cover co-equal timeslot arrangements that treat each timeslot the same in terms of likelihood of hosting a communication. An “always-preferred” timeslot does not cover a second-best timeslot that is selected some, but not all, of the time when it is available to host a communication.

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In its Initial Post-Hearing and Post-Hearing Reply Briefs, Motorola placed undue emphasis on certain language of the *Markman* Order while ignoring other material language in the *Markman* Order that undermines Motorola's position. Specifically, Motorola relied on the *Markman* Order's guidance that: "the claim language expressly confirms that the assigned default timeslot is the timeslot that the radio communication device uses unless another timeslot is selected." (CBr. at 15 (citing *Markman* Order at 7).). According to Motorola, [REDACTED]

[REDACTED]

[REDACTED] (*Id.* (citing Wicker Tr. at 226:21-227:3, 230:4-9, 232:12-233:11).).

Here, Motorola plainly conflated selection and availability of a "temporary" timeslot. The *Markman* Order made clear both that a device's selection of a "temporary" timeslot forecloses the simultaneous selection of "default timeslot" for a given communication and also that an infringing device seeking to initiate a communication would select the "default timeslot" "unless it is unavailable," regardless of the availability of a "temporary" timeslot. (*Markman* Order at 7-12.). It is axiomatic that the selection of one timeslot for a communication forecloses the simultaneous selection of another timeslot for the same communication. For purposes of literal infringement by the '284 Redesigned Products, however, what matters is how the Redesigned Products operate between communications and whether they base their next timeslot selection on the availability of a "default timeslot" or the availability of a last-used timeslot. Motorola's argument unravels because the '284 Redesigned Products do the latter.

Additionally, Motorola argued that the '284 Redesigned Products literally infringe because they are capable of satisfying the asserted claims under specific operating conditions. (CRBr. at 8.). In other words, Motorola characterized, yet misconstrued, [REDACTED]

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[REDACTED] According to Motorola's argument, while the '284 Redesigned Products may not satisfy claims 9, 13, 14, and 15 of the '284 patent much of the time during operation because they [REDACTED] [REDACTED], the '284 Redesigned Products are nevertheless programmed to satisfy the claims at least some of the time and that is enough for a finding of infringement. Motorola is incorrect.

The cases to which Motorola cited for its capability argument are distinguishable. They pertain to accused products that are capable, in certain modes, of satisfying all of the asserted claim limitations and thus infringing. *See Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1215-17 (Fed. Cir. 2014) (in the context of device and system claims, "when the asserted claims recite capability, our case law supports finding infringement by a 'reasonably capable' accused device . . . particularly where . . . there is evidence that the accused device is actually used in an infringing manner and can be so used without significant alterations."); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1204 (Fed. Cir. 2010) (holding "an accused device may be found to infringe if it is reasonably capable of satisfying the claim limitations, even though it may also be capable of non-infringing modes of operation.").

As discussed above, the '284 Redesigned Products do not have a "default timeslot," and thus do not exhibit an infringing mode, because [REDACTED] [REDACTED].

While the '284 Redesigned Products can [REDACTED], in certain circumstances, in terms of [REDACTED]

[REDACTED]

[REDACTED]. Consequently, [REDACTED]

[REDACTED], and thus the '284

Redesigned Products are not “capable” of infringing. (*Markman* Order, App’x A at 7-8 (“default timeslot—it is the timeslot that the radio communication device is assigned unless it is unavailable.”)).

For the reasons discussed above, Motorola has failed to prove by a preponderance of evidence that the '284 Redesigned Products literally infringe claims 9, 13, 14, and 15 of the '284 patent.

2. Motorola Proved Infringement Under the Doctrine of Equivalents

While Hytera’s Redesigned Products may not literally infringe, they do infringe under the doctrine of equivalents (“DOE”). (CDX-0005C-76.). The finding is not a close call. Once again, the analytical focus is on “default timeslot” limitation, the only limitation of claims 9, 13, 14, and 15 that Hytera disputed is absent in the '284 Redesigned Products. (CBr. at 13-16; RBr. at 18-20.). With respect to having a “default timeslot,” those '284 Redesigned Products perform substantially the same function as the claimed invention because they [REDACTED] [REDACTED]. (Tr. (Wicker) at 236:15-22.). The '284 Redesigned Products perform a “default timeslot” function in substantially the same way as the claimed invention, such that they and the claimed invention [REDACTED]

³⁹ The Parties agreed that after [REDACTED], the '284 Redesigned Products [REDACTED] [REDACTED]. (Tr. (Wicker) at 232:12-23; CX-1632C (Zheng Dep. Tr.) at 51:14-52:5, 52:7-9.). Moreover, [REDACTED] [REDACTED] (Tr. (Wicker) at 233:6-8; CX-1632C (Zheng Dep. Tr.) at 52:10-19.).

[REDACTED]
[REDACTED]. (*Id.* at 236:23-237:6.). Hytera’s ’284 Redesigned Products also achieve substantially the same result as the claimed invention because they both [REDACTED]

[REDACTED]. (*Id.* at 237:7-15.).

For the sake of the DOE analysis, it is useful to contrast timeslots in the [REDACTED] [REDACTED] to timeslots in a co-equal timeslot arrangement. A device with co-equal timeslots would treat each timeslot exactly the same by, for example, cycling through timeslots in a random fashion or in lockstep such that Timeslot 4 is always checked after Timeslot 3 and so on. In the co-equal scenario, no “default timeslot” or its equivalent would exist because no timeslot would act as a veritable homebase for the device to organize communications. [REDACTED]

[REDACTED].
What is abundantly clear is that it did not do so.

During the evidentiary hearing, Hytera’s technical expert, Dr. Akl, did not rebut Dr. Wicker’s DOE opinion. Instead, Hytera attacked the adequacy of Motorola’s proof and particularly, Dr. Wicker’s testimony. Hytera asserted that Dr. Wicker failed to identify which claim limitation was satisfied under the doctrine of equivalents, although “[t]here is some suggestion in the slide preamble and his testimony he was referring to the ‘default timeslot’” (RBr. at 19.). Hytera then argued that Dr. Wicker’s testimony was not sufficiently detailed. (*Id.* at 19-20.).

Hytera’s argument is wrong on both counts. Dr. Wicker’s testimony on the DOE argument focused on the “default timeslot” limitation and the “triple identity” test often applied in a DOE analysis. Dr. Wicker applied the “triple identity” test after testifying that the ’284

Redesigned Products literally infringed the '284 patent, including how the '284 Redesigned Products [REDACTED] (Tr. (Wicker) at 233:6-8; CX-1632C (Zheng Dep. Tr.) at 52:10-19.). However, contrary to Hytera's depiction of his testimony, Dr. Wicker also suggested why radio communication devices use "default timeslots" (e.g., enhancing efficiency). (Tr. (Wicker) at 236:15-22.). While Dr. Wicker's testimony on DOE was not robust, it was sufficient legally so as to satisfy the DOE argument and proof requirements. Hytera failed to rebut with persuasive evidence Motorola's compelling DOE evidence.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '284 Redesigned Products infringe claims 9, 13, 14, and 15 of the '284 patent.

F. Domestic Industry: Technical Prong

1. Legal Standard

A complainant in a patent-based Section 337 investigation must demonstrate that it is practicing or exploiting the patents at issue. *See* 19 U.S.C. § 1337(a)(2) and (3); *Certain Microsphere Adhesives, Process for Making Same, and Prods. Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, Comm'n Op. at 8, Pub. No. 2949 (U.S.I.T.C. Jan. 16, 1996) ("*Microsphere Adhesives*"). The technical prong of the domestic industry requirement is satisfied when the complainant establishes that it is practicing or exploiting the patents at issue. *See id.*

The test for claim coverage for the purposes of the technical prong of the domestic industry requirement is the same as that for infringement. *Certain Doxorubicin and Preparations Containing Same*, Inv. No. 337-TA-300, Initial Determination at 109, 1990 WL 710463 (U.S.I.T.C. May 21, 1990), *aff'd*, Views of the Commission at 22 (October 31, 1990). "First, the claims of the patent are construed. Second, the complainant's article or process is

examined to determine whether it falls within the scope of the claims.” *Id.* The technical prong of the domestic industry can be satisfied either literally or under the doctrine of equivalents.

Certain Dynamic Sequential Gradient Devices and Component Parts Thereof, Inv. No. 337-TA-335, Initial Determination at 44, Pub. No. 2575 (U.S.I.T.C. Nov. 1992). “In order to satisfy the technical prong of the domestic industry requirement, it is sufficient to show that the domestic industry practices any claim of that patent, not necessarily an asserted claim of that patent.”

Certain Ammonium Octamolybdate Isomers, Inv. No. 337-TA-477, Comm’n Op. at 55 (U.S.I.T.C. Jan. 5, 2004) (“*Certain Isomers*”).

2. The ’284 DI Products Do Not Practice Claims 9, 13, 14, and 15 of the ’284 Patent

Motorola has alleged that the following DI Products practice the asserted claims of the ’284 patent: MOTOTRBO Base Stations using Capacity Plus (including XPR 8380; MTR3000; XPR 8400; SLR 5000 Series) and MOTOTRBO Mobile Stations using Capacity Plus (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series) (collectively, the ’284 DI Products”). (*See, e.g.*, CPBr. at xi.). Motorola’s Capacity Plus [REDACTED] [REDACTED]. (CX-0963C.34; CX-1231C.624.).

As explained below, Motorola provided persuasive evidence that the ’284 DI Products satisfy each limitation of claims 9, 13, 14, and 15 of the ’284 patent. In its Initial Post-Hearing and Post-Hearing Reply Briefs, Hytera did not dispute that the ’284 DI Products practice these claims. (RBr. at 13-32; RRBBr. at 10-24.). Therefore, any arguments Hytera may try to make pertaining to the ’284 DI Products, including on appeal, under Ground Rule 10.1.

[REDACTED]) can claim to be uniquely or specially designated as a “default,” such that the channel displays the characteristics of a home base or hub and, thus, is explicitly not co-equal to the other channels in terms of how often it gets checked for availability and selected for communication. (See *Markman* Order, App’x A at 7-8.).

While Motorola’s position has superficial appeal in a two-channel configuration, where channel switching necessarily occurs between only two channels, that is a [REDACTED] “default” timeslot and [REDACTED] “temporary” timeslot, the argument unravels upon closer scrutiny. [REDACTED]

[REDACTED], applying Motorola’s reasoning, [REDACTED] a “default” timeslot label. The only factor [REDACTED], which is not sufficient.

By contrast, the asserted claims require that the “default timeslot” be selected and re-selected for communications based on its availability. (See *Markman* Order, App’x A at 18-19 (citing ’284 patent at 4:51-55)). That occurs not when [REDACTED] but instead out-of-turn, as a prioritized option, to the exclusion of other timeslots, when the communication device lacks an available timeslot on which to conduct a communication. (*Id.*). This is not how the ’284 DI Products operate. (See Tr. (Wicker) at 282:23-283:2 ([REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]), 288:16-22 ([REDACTED]
[REDACTED]

[REDACTED]

[REDACTED])

b) Claim 9 of the '284 Patent

As discussed below, the '284 DI Products satisfy every limitation of claim 9 except “default timeslot,” as indicated below with Motorola’s failure of proof in italics. In other words, if “default timeslot” in the '284 patent and [REDACTED] in the '284 DI Products were interchangeable, which is not the case here, the '284 DI Products would satisfy claim 9.

- i. “A radio communication device having an assigned default timeslot for communicating with a talkgroup of other radio communication devices, the radio communication device comprising”*

The '284 DI Products are radio communication devices using Capacity Plus. Capacity Plus allows [REDACTED]. (Tr. (Wicker) at 283:3-17; CX-0963C.311; CX-1231C.625-26.). *The subscribers also have an “assigned default timeslot.”* (Tr. (Wicker) at 283:18-284:7 (emphasis added)). [REDACTED]. (Id. at 281:18-283:2, 283:24-284:25, 286:20-287:4; CX-0963C.34; CX-1231C.625-626, 668-669.). *A subscriber’s “assigned default timeslot is the [REDACTED].”* (Tr. (Wicker) at 283:24-284:12 (emphasis added)).

- ii. “radio communication circuitry” and “a processor coupled to the radio communication circuitry”*

Each of the '284 DI Products has radio communication circuitry and a processor coupled to the radio communication circuitry. (Id. at 285:7-12, 285:21-286:2.). Dr. Wicker explained that subscribers have radio communication circuitry. (Id. at 285:16-20 (citing examples of product manuals showing radio communication circuitry, including CX-983.3)). The

subscribers also have a processor in communication with the radio communication circuitry. (*Id.* at 285:21-286:2 (citing examples of product manuals showing processors, including CX-1020C.9, 92-95)).

- iii. *“wherein in operation the processor: determines, from a signal provided by the radio communication circuitry, if the default timeslot is available for the radio communication device to communicate with the talkgroup”*

When a Motorola subscriber [REDACTED]

[REDACTED]. (*Id.* at 287:9-13.). The subscriber [REDACTED]

[REDACTED]. (*Id.* at 287:14-288:6; CX-1231C.627.). [REDACTED]

[REDACTED] (CX-1231C.627 (emphasis added)). [REDACTED]

[REDACTED]. (Tr. (Wicker) at 288:11-25; CX-1231C.626.).

- iv. *“when the default timeslot is unavailable the processor instructs the radio communication circuitry to search for an available timeslot and temporarily select the available timeslot as a temporary selected group timeslot for the talkgroup”*

[REDACTED]. (Tr. (Wicker) at 289:12-19; CX-1231C.628, 650.).

“Searching” consists of [REDACTED]

[REDACTED]. (Tr. (Wicker) at 289:23-290:6.). [REDACTED]
[REDACTED]. (*Id.* at 289:12-22, 290:7-15.). This is “temporar[y],” since
(as described below), the subscribers [REDACTED] (assigned *default
timeslot*). (*Id.* at 290:7-15.).

- v. *“when the default timeslot becomes available the processor instructs the radio communication circuitry to reselect the default timeslot for communicating with the talkgroup”*

For a subscriber that [REDACTED]

[REDACTED]
[REDACTED] (CX-1231C.630; Tr. (Wicker) at 290:24-291:8.). [REDACTED]

[REDACTED]
[REDACTED]. (Tr. (Wicker) at 291:9-11.). As another
example, [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
(CX-1231C.630; Tr. (Wicker) at 291:11-19 (testifying re: same). Here the subscriber [REDACTED]

[REDACTED]
[REDACTED]. (Tr. (Wicker) at 291:11-19.).

c) Claim 13 of the '284 Patent

Motorola’s ’284 DI Products satisfy every limitation of dependent claim 13 except
“default timeslot,” as discussed below. In other words, if “default timeslot” in the ’284 patent
and [REDACTED] in the ’284 DI Products were interchangeable, which is not the case here, the
’284 DI Products would satisfy claim 13.

[REDACTED]

[REDACTED]

[REDACTED]. (Tr. (Wicker) at 293:3-16; CX-1231C.627.). [REDACTED]

[REDACTED]. (CX-1231C.627.).

As explained for claim 9, [REDACTED]

[REDACTED].

d) Claim 14 of the '284 Patent

Motorola's '284 DI Products satisfy every limitation of dependent claim 14 except "default timeslot," as indicated below. In other words, if "default timeslot" in the '284 patent and [REDACTED] in the '284 DI Products were interchangeable, which is not the case here, the '284 DI Products would satisfy claim 14.

In claim 14, the information sent from the repeater is from the "common announcement channel." (JX-0001 at cl. 14; *see also* Tr. (Wicker) at 292:10-24, 293:22-294:6.). [REDACTED]

[REDACTED] (CX-1231C.644; Tr. (Wicker) at 293:22-294:6.). [REDACTED]

[REDACTED]. (CX-1231C.644.).

e) Claim 15 of the '284 Patent

Motorola's '284 DI Products satisfy every limitation of claim 15 except "default timeslot," as indicated below with Motorola's failure of proof in italics. In other words, if "default timeslot" in the '284 patent and [REDACTED] in the '284 DI Products were interchangeable, which is not the case here, the '284 DI Products would satisfy claim 15.

As explained *supra* in Section VII.F.2(b), for the most part, a limitation-by-limitation analysis of claim 9, maps cleanly to the same analysis for claim 15.

Nevertheless, there are a few unique limitations found in claim 15. Specifically, the '284

DI Products (consisting of multiple subscribers and a repeater) together form a wireless communication system (limitation 15[pre]). (Tr. (Wicker) at 286:3-19, 292:7-9.). The wireless communication system comprises one repeater used by the subscribers to communicate with each other (limitation 15[b]). (*Id.*). Finally, [REDACTED], which, according to Motorola, serves as the “*common assigned default timeslot*” for all subscribers. (*Id.*).

G. Validity

1. Legal Standard

a) Generally

Patent claims are presumed valid. 35 U.S.C. § 282. A respondent who has raised patent invalidity as an affirmative defense must overcome the presumption by “clear and convincing” evidence of invalidity. *Checkpoint Sys., Inc. v. U.S. Int’l Trade Comm’n*, 54 F.3d 756, 761 (Fed. Cir. 1995). As stated by the Federal Circuit in *Ultra-Tex Surfaces, Inc. v. Hill Brothers Chemical Co.*:

when a party alleges that a claim is invalid based on *the very same references* that were before the examiner when the claim was allowed, that party assumes the following additional burden:

When no prior art other than that which was considered by the PTO examiner is relied on by the attacker, he has the added burden⁴⁰ of overcoming the deference that is due to a qualified government agency presumed to have properly done its job, which includes one or more examiners who are assumed to have some expertise in interpreting the references and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents.

Ultra-Tex Surfaces, Inc. v. Hill Bros. Chem. Co., 204 F.3d 1360, 1367 (Fed. Cir. 2000)

⁴⁰ This is not an added burden of proof but instead goes to the weight of the evidence. *Sciele Pharma v. Lupin Ltd.*, 684 F.3d 1253, 1260-61 (Fed. Cir. 2012). New evidence not considered by the PTO may carry more weight than evidence previously considered by the PTO. (*Id.*).

(emphasis added) (quoting *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359 (Fed. Cir. 1984)).

b) Legal Standard: Anticipation

A determination that a patent is invalid as being anticipated under 35 U.S.C. § 102 requires a finding, based upon clear and convincing evidence, that each and every limitation is found either expressly or inherently in a single prior art reference. *See, e.g., Celeritas Techs. Inc. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998). Anticipation is a question of fact, including whether a limitation, or element, is inherent in the prior art. *In re Gleave*, 560 F.3d 1331, 1334-35 (Fed. Cir. 2009). The limitations must be arranged or combined the same way as in the claimed invention, although an identity of terminology is not required. *Id.* at 1334 (noting that “the reference need not satisfy an *ipsisimilis verbis* test”); MPEP § 2131.

In addition, the prior art reference’s disclosure must enable one of ordinary skill in the art to practice the claimed invention “without undue experimentation.” *Gleave*, 560 F.3d at 1334-35. A prior art reference that allegedly anticipates the claims of a patent is presumed enabled; however, a patentee may present evidence of nonenablement to overcome this presumption. *Impax Labs., Inc. v. Aventis Pharms. Inc.*, 468 F.3d 1366, 1382 (Fed. Cir. 2006). “[W]hether a prior art reference is enabling is a question of law based upon underlying factual findings.” *Gleave*, 560 F.3d at 1335.

2. None of the Asserted Claims of the '284 Patent Are Invalid

a) Claims 9, 13, 14, and 15 of the '284 Patent Are Not Anticipated By Wiatrowski (JX-0009)

U.S. Patent Application Serial No. 12/331,189 published on April 8, 2010, as U.S. Publication No. 2010/0086092 and issued on October 2, 2012, as U.S. Patent No. 8,279,991 (“Wiatrowski” or the “991 patent”). (JX-0009.). The '991 patent claims priority to U.S.

Provisional Application No. 61/102,770, which was filed on October 3, 2008. The '991 patent incorporates by reference the entirety of U.S. Patent Application Serial No. 12/331,180 (“the '180 application”), which was filed on December 9, 2008, published as U.S. Publication No. 2010/0087199 on April 8, 2010, and issued as U.S. Patent No. 8,139,597 on March 20, 2012. (JX-0009 at 7:16-21; RX-0303 (the as-filed application); CX-1908 (the publication of the application)). The '180 application claims priority to U.S. Provisional Application No. 61/102,791, which was filed on October 3, 2008. The '991 patent lists David Wiatrowski, Thomas B. Bohn, and Thomas J. Senese as the inventors, and the '180 application lists Dipendra M. Chowdhary, David G. Wiatrowski, and Thomas B. Bohn as the inventors.

Hytera alleged that Wiatrowski anticipates claims 9, 13, 14, and 15 of the '284 patent. (RBr. at 21-32.). Neither Wiatrowski nor the '180 application were considered by the PTO during the prosecution of the '284 patent, and Motorola did not contend that the PTO did consider them. (*See* JX-0001.). Motorola also did not dispute that Wiatrowski qualifies as prior art to the '284 patent under the relevant provisions of pre-AIA 35 U.S.C. § 102.⁴¹

Wiatrowski discloses a method that radio communication devices can use to synchronize with each other, where each frequency comprises multiple timeslots and each timeslot has a unique synchronization pattern. (JX-0009 at Abstract, 1:29-32.). Figure 3 of Wiatrowski, reproduced below as Figure No. 11, illustrates how a receiving device can synchronize with a transmitting device to a desired timeslot. (*Id.* at 6:64-7:1.).

⁴¹ Before the America Invents Act (“AIA”), 35 U.S.C. § 102(a) read in relevant part: “A person shall be entitled to a patent unless—(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Figure No. 11: Flow Diagram of an Exemplary Method for Synchronization

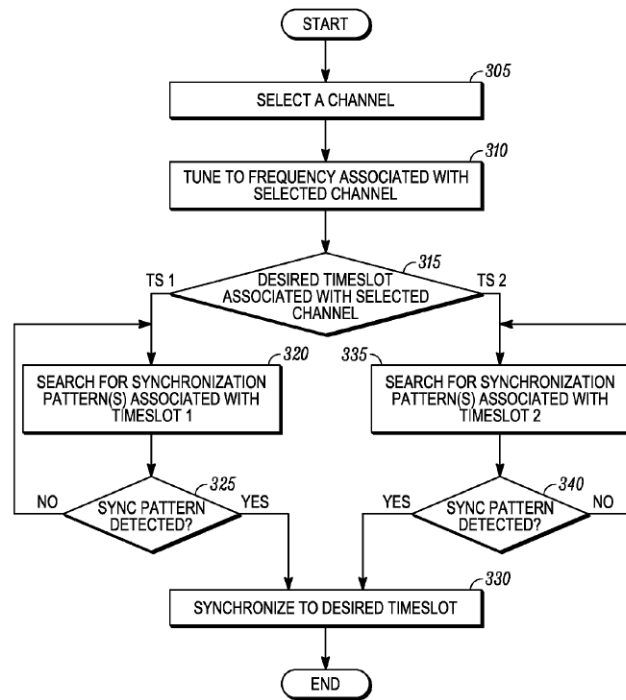


FIG. 3

(JX-0009 at Fig. 3.).

At the first step 305, the receiving device selects a channel, which is associated with a frequency (step 310) and a timeslot (step 315). (*Id.* at 7:1-3.). The selection of the channel can occur in one of several ways, including “where the transmitting device informs the receiving device which timeslot is currently a rest timeslot (or channel) or which timeslot (or channel) has call activity that may be of interest (e.g., a system channel status message).” (*Id.* at 7:3-16.). For the disclosure of a “rest timeslot (or rest channel),” Wiatrowski incorporates by reference the entirety of the ’180 application. (*Id.* at 7:16-21.).

Independent claim 9 of the ’284 patent requires, among other things, a radio communication device with an assigned default timeslot that it uses to communicate with other radio communication devices. (JX-0001 at 6:59-62.). When its default timeslot is not available

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for communicating with the other devices, the device temporarily selects another available timeslot for communicating, and then re-selects the default timeslot when it again becomes available. (*Id.* at 7:5-13.). Motorola alleged that Hytera failed to establish that Wiatrowski discloses a default timeslot that is temporarily unselected when it is unavailable, and then re-selected when it again becomes available.

Hytera relied on the disclosure of the “rest channel” in the ’180 application as satisfying the “default timeslot” limitation of claim 9. (RBr. at 22.). The ’180 application describes that a “beacon” message will be periodically broadcast on a channel to identify that channel as the rest channel, and that the channel is available. (RX-0303 at [0057]; Tr. (Akl) at 1009:4-23.). If the receiving device seeks to use the rest channel but the rest channel is busy, the ’180 application states that the device can wait until a new channel is selected to serve as the rest channel. (RX-0303 at [0027]). Hytera pointed to the “wait until a new channel is selected” behavior to satisfy the “search for an available timeslot and temporarily select the available timeslot” limitation. (RBr. at 23; Tr. (Akl) at 1010:6-16; RDX-0003 at 18 (highlighting the relevant language from RX-0303 at [0027])).

The ’180 application also describes that a channel will change its status from a rest channel to a traffic channel when a receiving device uses it for communication. (RX-0303 at [0029]). At this point, “a second channel in the system is selected to serve as the rest channel for the system.” (*Id.*). Once the receiving device stops using the first channel for communications, the receiving device will then “obtain[] the identity of the channel currently serving as the rest channel,” which in the current example is the second channel. (*Id.* at [0030]). Hytera asserted that selecting this second channel (the next rest channel) after the device finishes using the first channel (the prior rest channel) satisfies the “re-select the default timeslot for

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communicating with the talkgroup” “when the default timeslot becomes available” limitation. (RBr. at 23; Tr. (Akl) at 1011:19-24.).

Hytera failed to establish by clear and convincing evidence that Wiatrowski and the '180 application teach a person of ordinary skill in the art how to practice claim 9 of the '284 patent. Claim 9 requires a first “assigned default timeslot” and a second “available timeslot” that is “temporarily” selected when the default timeslot is unavailable. (JX-0001 at 6:61-7:9.). The '180 application does not disclose a “default timeslot.” Instead, the '180 application discloses two co-equal timeslots that each serve as an alternating, so-called default timeslot, until it is used for communication. (RX-0303 at [0029]; *cf. Markman* Order, App'x A at 7-8 (stating that the “default timeslot” according to claim 9 is one that the radio communication device is assigned unless it is unavailable and another “temporary” timeslot is used).).

For example, suppose the first timeslot is the “rest channel.” The communication device will use the first timeslot if it is available, but, as a result, that timeslot will cease being the “rest channel” when it is used for communication. At that point, the second timeslot becomes the “rest channel” and ceases to hold that designation when it is used for communication, and so on. (*Id.*). In other words, the channels are co-equal insofar as any channel can serve as the “rest channel.” None of the channels, whether in a two-channel or more-than-two-channel configuration, can claim to be uniquely or specially designated a “default,” such that it displays the characteristics of a home base or hub channel. Therefore it is explicitly not co-equal to the other channels in terms of how often it gets checked for availability and selected for communication.

Claim 9 requires that the “default timeslot” be selected and re-selected for communications based on its availability, not when it is that timeslot's turn to serve as a “rest

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channel” or “default,” but instead out-of-turn (as a prioritized option, to the exclusion of other timeslots) when the communication device lacks an available timeslot on which to conduct a communication. (*See Markman Order*, App’x A at 18-19 (citing ’284 patent at 4:51-55).). This is not taught by Wiatrowski.

Hytera provided the same evidence and arguments for the corresponding limitations of independent claim 15. (*See RBr.* at 22-24.). Hytera’s argument and reasoning that failed to with respect to claim 9 applies equally to claim 15.

For the foregoing reasons, Hytera has failed to prove by clear and convincing evidence that independent claims 9 and 15 of the ’284 patent are invalid as anticipated by Wiatrowski. *Celeritas Techs.*, 150 F.3d at 1361.

Since claims 13 and 14 depend from claim 9, Wiatrowski does not anticipate claims 13 and 14. *SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1375 (Fed. Cir. 2013) (dependent claims cannot be anticipated “where the base claim has not been proven invalid”); *Certain Static Random Access Memories and Prods. Containing Same*, Inv. No. 337-TA-792, Remand Initial Determination on Validity and Unenforceability, 2013 WL 1154018, at *10 (U.S.I.T.C. Feb. 25, 2013) (holding that because the independent claim was not anticipated, claims depending from the independent claim were also not anticipated) (citing *Hartness Int’l, Inc. v. Simplimatic Eng’g Co.*, 819 F.2d 1100, 1108 (Fed. Cir. 1987).).

b) Claims 9, 13, 14, and 15 of the ’284 Patent Are Not Anticipated By TETRA (RX-0063)

The European Standard designated as ETSI EN 300 396-7 v1.2.1 (2000-12) appears to have been published at least by September 30, 2001, and is titled Terrestrial Trunked Radio (“TETRA”). (RX-0063 at 1, 7.). Hytera alleged that TETRA anticipates claims 9, 13, 14, and

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15 of the '284 patent. (RBr. at 21-32.). Motorola did not contend that TETRA was considered. The PTO did not consider TETRA during the prosecution of the '284 patent. (*See* JX-0001.). Motorola did not contend that TETRA was considered during patent prosecution. Motorola also did not dispute that TETRA qualifies as prior art to the '284 patent under the relevant provisions of pre-AIA 35 U.S.C. § 102.

TETRA discloses a radio communication system where devices communicate using two channels with each having two timeslots. (RX-0063 at 13; Tr. (Wicker) at 1238:15-1239:5.). Channel A primarily uses timeslots 1 and 3, and channel B primarily uses timeslots 2 and 4. (RX-0063 at 13; RBr. at 29.). Hytera relied on the “type 2” call disclosure in TETRA, in which the system is capable of supporting two simultaneous calls, for teaching the invention claimed in the '284 patent. (RBr. at 29, 30; Tr. (Akl) at 1047:21-1048:4 (citing RX-0063 at 25); *see* RX-0063 at 12.).

According to Hytera's argument, when both channels A and B are free, the device that wants to place a call primarily will use timeslots 1 and 3 in channel A for the communication. (RX-0063 at 25 (“A call using DM channel A shall primarily be conducted in timeslots 1 and 3 in each frame.”)). Hytera argued that “either timeslot 1 or 3 in channel A” satisfy the “default timeslot” limitation of claim 9. (RBR. at 29, 30; Tr. (Akl) at 1046:18-20.). Hytera at times also argued that both “timeslots 1 and 3” are the “default timeslot.” (RBr. at 31.). However, Hytera's expert, Dr. Akl, mostly identified “channel A” as satisfying the “default timeslot” limitation of the '284 patent. (Tr. (Akl) at 1047:21-1048:4, 1048:9-18, 1049:4-12, 1052:20-1053:4, 1053:25-1054:10.).

In other words, Hytera and its expert were inconsistent in their contentions and arguments. At different points either in Hytera's briefs and Dr. Akl's testimony, one of the other

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contended that the default timeslot is disclosed by (1) channel A itself, (2) timeslots 1 or 3 in channel A, or (3) timeslots 1 and 3 in channel A. Neither Dr. Akl nor Hytera explained in its briefs why their positions were inconsistent, or if not, how to reconcile them.

Hytera explained that if channel A is busy and channel B is free, the TETRA device will use primarily timeslots 2 and 4 in channel B for communication. (RX-0063 at 26.). According to Hytera, “the timeslots of channel B” will be temporarily used if channel A (timeslots 1 and 3) are “unavailable” and channel B (timeslots 2 and 4) are free, as required by claim 9. (RBr. at 31.). Hytera’s expert identified channel B as the “temporary timeslot.” (Tr. (Akl) at 1048:9-18; 1053:25-1054:10.).

Hytera also explained that, on the next type 2 call, if both channels are free, the device will again use timeslots 1 and 3 in channel A for communication. (RX-0063 at 25.). Hytera asserted in attorney argument that Dr. Akl’s testimony satisfied the requirement of claim 9 of the ’284 patent that the default timeslot is re-selected when it becomes available. (RBr. at 31; Tr. (Akl) at 10:49:4-12.).

Hytera’s argument that conflated timeslots with channels is confusing and lacks credibility. Hytera did not explain why it sometimes identified a channel as a “default timeslot” or “temporary timeslot.” Similarly, Hytera did not explain why it at times identified one or both of the timeslots within the channels as satisfying the imitation of the “default timeslot” in the ’284 patent.

Similarly, Hytera’s expert, Dr. Akl, identified a channel as a timeslot (*see* Tr. (Akl) at 1047:21-1048:4, 1048:9-18, 1049:4-12, 1052:20-1053:4, 1053:25-1054:10), which did not support Hytera’s argument that a timeslot within the channels satisfies the timeslot limitation of the ’284 patent. Hytera also confusingly identified “either timeslot 1 or 3 in channel A” as the

default timeslot in the same brief that Hytera identified the “default channel with default timeslots 1 and 3.” (*Compare* RBr. at 29 (emphasis added) with *id.* at 30, 31 (emphasis added)).

The '284 patent indicates that, to the relevant person of ordinary skill in the art, a channel is synonymous with a timeslot. (*See* '284 patent at 1:24-26.). As Motorola's expert explained, however, TETRA's system is “not a timeslot-based system, it's actually a channel-based system, where a channel is two timeslots.” (Tr. (Wicker) at 1238:20-1239:5; *see id.* at 1239:17-1240:1 (“[E]ach channel makes use of two timeslots but [TETRA] doesn't provide any further definition as to how those timeslots are actually used. We don't know.”)). How TETRA's channel-based system and timeslots-within-channels concept maps to the limitations of claim 9 is not readily apparent. Hytera failed to provide an explanation, let alone one that might have made sense.

With respect to the specific limitations of claim 9, Hytera did not explain how channel A or timeslots 1 and/or 3 satisfies the “default timeslot” limitation in the '284 patent. Hytera argued that “either timeslot 1 or 3 in channel A is the default timeslot,” but its citation to page 25 of TETRA does not explain how the timeslots within channel A are “assigned” or “used for communicating with a talkgroup of other radio communication devices” as required by claim 9. Instead, page 25 of TETRA states that “[a] *call using DM channel A is primarily conducted in timeslots 1 and 3 in each frame on each of the RF carriers.*” (RX-0063 at 25 (emphasis added)). Hytera did not explain how, if both timeslots 1 and 3 in channel A are used for communication, either timeslot 1 or 3 in channel A can be the default timeslot. Hytera also did not explain how both timeslots in TETRA could be used for a communication in a way that might disclose the “default timeslot” limitation. On its face, Hytera's argument did not match up with the disclosure in TETRA. Moreover, Hytera did not provide evidence to support what were no more than conclusory statements on how TETRA discloses the “default timeslot” limitation.

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Hytera also failed explain how a device in the TETRA system “determines, from a signal provided by the radio communication circuitry, if the default timeslot is available for the radio communication device to communicate with the talkgroup,” as required by claim 9. Hytera only pointed to TETRA’s disclosure that the device will begin transmission on channel A if it “finds both channel A and channel B free.” (RBr. at 30 (citing RX-0063 at 25).). Hytera’s neither alleged nor attempted to explain how that a TETRA device determines both channels A and B are free, such that the determination process includes the required “signal provided by the radio communication circuitry.” (See Tr. (Akl) at 1047:21-1048:4.). Neither did Hytera’s expert, Dr. Akl, provide evidence or an explanation how a TETRA device determines that both channels A and B are free such that the determination process includes the required “signal provided by the radio communication circuitry.”

Hytera provided the same evidence and arguments for the corresponding limitations of independent claim 15 as it provided for claim 9 of the ’284 patent. (See RBr. at 29-31.). Hytera’s failure to provide supporting evidence, and its confusing and unsupported arguments, apply equally to claim 15 as they do to claim 9 of the ’284 patent.

For the foregoing reasons, Hytera has failed to prove by clear and convincing evidence that independent claims 9 and 15 of the ’284 patent are invalid as anticipated by TETRA. *Celeritas Techs.*, 150 F.3d at 1361. Since claims 13 and 14 depend from claim 9, TETRA does not anticipate claims 13 and 14 for the same reasons TETRA does not anticipate claim 9. *SynQor*, 709 F.3d at 1375; *Certain Static Random Access Memories*, 2013 WL 1154018, at *10.

c) Claims 9, 13, 14, and 15 of the ’284 Patent Are Not Anticipated By Ito (RX-0016)

U.S. Patent No. 5,396,496 (“Ito”) issued on March 7, 1995, and listed Koichi Ito, Yuji

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Umemoto, and Masayuki Tanaka as the inventors. (RX-0016.). Hytera alleged that Ito anticipates claims 9, 13, 14, and 15 of the '284 patent. (RBr. at 21-32.). The PTO did not consider Ito during the prosecution of the '284 patent and Motorola did not contend that it did. (See JX-0001.). Motorola also did not dispute that Ito qualifies as prior art to the '284 patent under the relevant provisions of pre-AIA 35 U.S.C. § 102.

Ito discloses a radio communication system in which mobile devices communicate with base stations. (RX-0016 at Abstract.). Ito specifically discloses that it omits or simplifies a “control station” in the communication system it describes “so that no large apparatus is required and high flexibility can be ensured with respect to changes in the system” (*Id.* at 2:10-19.). It does this, in part, by using the base stations or mobile stations instead of a control station to determine which radio frequencies are used or not used, and which time slots are used for connecting the base station and mobile stations. (*Id.* at 2:30-50.). The portion of Ito that Hytera relied on is labeled the “third embodiment.” It describes signals transmitted on “control radio frequencies” to independently manage the “control channels constituted by time slots” in the base stations and mobile stations rather than the control station. (*Id.* at 12:22-38, 15:23-34; see RBr. at 25.).

Ito’s “third embodiment” teaches that “the time frame of a control radio frequency has six time slots,” which it labels TSC1 through TSC 6. (*Id.* at 12:44-45, Fig. 10(a).). The third embodiment also teaches that “time slots TSC1 to TSC3 . . . are assigned to reception, while the time slots TSC4 to TSC6 are assigned to transmission.” (*Id.* at 13:1-5.). In describing the transmission behavior of the mobile devices in the third embodiment, Ito explains that:

The corresponding mobile station checks whether the transmission time slot TSC4 of a control radio frequency is free or not. If it is confirmed that the time slot TSC4 is free, the mobile station transmits a transmission signal to a corresponding one of

the base stations BSS1 to BSSn by using the time slot TSC4. If the time slot TSC4 is currently used, it is checked whether the next time slot TSC5 is free. If it is free, the mobile station transmits the transmission signal by using the time slot TSC5. Similarly, if this time slot TSC5 is also currently used, it is checked whether the next time slot TSC6 is free. If it is free, this time slot TSC6 is used. Note that if all the time slots TSC4 to TSC6 are currently used, a busy state is notified to a user (caller). If, however, another control radio frequency can be used, the mobile station may be switched to this control radio frequency. Thereafter, if the presence of a free time slot of the transmission time slots TSC4 to TSC6 is confirmed, the corresponding time slot may be used.

(*Id.* at 14:62-15:15.).

According to Hytera, this Ito disclosure teaches that the mobile devices “sequentially check the availability of timeslots TSC4 to TSC6 for each communication.” (RBr. at 26 (citing RX-0016 at 14:62-15:15)). Hytera argued that TSC4 satisfies the “default timeslot” limitation of the ’284 patent because it will be used if it is available and another timeslot is not designated. (*Id.*; Tr. (Akl) at 1033:18-1034:2.). Hytera also argued that TSC5 satisfies the “temporary timeslot” limitation of the ’284 patent because it will be used if TSC4 is not available, and that the communication system that Ito describes will re-select TSC4 when it becomes available again due to the sequential algorithm. (RBr. at 27 (citing RX-0016 at 14:62-15:15)).

Motorola argued that TSC4 cannot satisfy the “default timeslot” limitation of the ’284 patent because TSC4 is on a “control radio frequency,” not on a speech radio frequency. (CBr. at 26.). Claim 9 of the ’284 patent requires that the mobile device have “an assigned default timeslot *for communicating with a talkgroup*” of other mobile devices. (JX-0001 at 6:59-62 (emphasis added)). Motorola’s expert, Dr. Wicker, explained that control signals are only transmitted between the mobile devices and the repeaters but not between mobile devices in a talkgroup. The control signals do just that, but they are not used for communicating in a talkgroup. (Tr. (Wicker) at 1246:6-1247:2.).

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Hytera did not dispute that the signals on TSC4 are control signals sent on a control radio frequency, or that the signals are only transmitted between the mobile devices and repeaters. (RBr. at 26; RRBr. at 22.). However, Hytera argued that “control channels TSC4 to TSC6 are timeslots the system uses to manage speech communications among a talkgroup, so they are used for communicating with a talkgroup.” (RBr. at 26 (citing RX-0016 at 1:61-64 (“speech channels including the respective time slots are collectively and concentrically managed by the control channel”).) . The dispute, as Hytera framed it is whether claim 9 requires the default timeslot to transmit speech information, or only to transmit information used to manage speech communication.

Hytera’s evidence in support of its contention that the control channels “manage speech communications within a talkgroup” was both lacking and insufficient to non-existent. The Ito disclosure that Ito relied upon, at 1:61-64, is part of the “Background of the Invention” section that describes “a conventional system.” The description of the speech and control channels in Ito that Hytera relied upon is framed by the Ito specification as “problems” with the conventional system that the invention presumably attempts to remedy. (RX-0016 at 1:56-2:8.). Ito teaches that its invention works differently than a “conventional system” which uses a control channel to manage speech channels.

The only other evidence Hytera cited is Dr. Wicker’s testimony, Motorola’s expert’s testimony, which Hytera mischaracterized. (RRBr. at 22-23 (citing Tr. (Wicker) at 1291:10-12).). Hytera described Dr. Wicker’s testimony as admitting that TSC4 is “used to set up a call.” (*Id.*). However, that is not what Dr. Wicker said. He testified: “So it’s using TSC4 for control signalling. It will then use – if a call is set up, it will use one of the voice channels to make that call.” (Tr. (Wicker) at 1291:10-12.). Hytera did not tie the “control signaling” in Ito to setting

up a call. Hytera's characterization of Motorola's expert's testimony on this point is wrong. Regardless of whether claim 9 can be practiced if only information used to manage speech communication is transferred over the default timeslot, and not actual speech communication, Hytera has not met there burden of proof that Ito discloses this behavior.

Hytera did not present any argument or testimony during the evidentiary hearing that a timeslot that is only used to *manage* communications among a talkgroup satisfies the "default timeslot for communicating with a talkgroup" limitation of the '284 patent. Hytera also did not include such an argument in its Pre-Hearing Brief. (*See* RPBr. at 18-22; Tr. (Akl) at 1033:17-1034:10, 1040:21-1041:13.). Hytera's expert and Pre-Hearing Brief also did not cite the portion of Ito, at 1:61-64, that Hytera decided to rely upon, belatedly, in its Initial Post-Hearing Brief. Not only was Hytera's belated argument incorrect, Hytera waived its right to rely upon Ito as it did belatedly under Ground Rule 10.1.

Motorola argued that Ito does not disclose that TSC4 is re-selected once it becomes available because Ito does not disclose the sequential algorithm that Hytera attempted to describe, wrongly. That is that the Ito system checks the availability of TSC4, then TSC5, then TSC6, and then sequentially restarts checking at TSC4. (CBr. at 26.). Motorola pointed out that the portion of Ito that Hytera relied upon, at 14:62-15:15, only describes an initial selection process in which TSC4 is selected if it is free. Otherwise, TSC5 is selected if it is free, TSC6 is selected if it is free, and if none of them is free, "a busy state is notified to the user." (*Id.*). Motorola's expert, Dr. Wicker, testified that the section of Ito that Hytera relied upon was "not talking about going back to a default[,] [i]t's talking about using what becomes available." (Tr. (Wicker) at 1247:6-20.).

Motorola is correct that Hytera has not met its burden to prove that the Ito system re-

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selects TSC4 when it becomes available as required by claim 9 of the '284 patent, even assuming TSC4 is the “default timeslot.” Hytera’s expert, Dr. Akl, simply read the Ito specification into the record and concluded, without explanation, that it satisfies the limitations of claim 9 of the '284 patent. (Tr. (Akl) at 1036:19-1037:16, 1042:18-1043:14.). The portion of Ito that Dr. Akl read into the record does not support his conclusion that “it’s describing the re-selecting and going back to TSC4.” Ito does not disclose in that part of the specification, or elsewhere, that TSC4 is used again when it becomes available, or that the system sequentially re-checks TSC4 through TSC6. Ito simply says that “if the presence of a free time slot of the transmission time slots TSC4 to TSC6 is confirmed, the corresponding time slot may be used.” (RX-0016 at 15:12-15.). This implies that if TSC4 through TSC6 are all available, TSC5 or TSC6 could be used instead of TSC4. Hytera provided no contrary explanation or analysis to support its position.

In order to suggest that Dr. Wicker, Motorola’s expert agreed with Hytera’s argument, Hytera selectively cited only to part of Dr. Wicker’s testimony, and in doing so, not only omitted Dr. Wicker’s complete testimony, but also misrepresented Dr. Wicker’s testimony. Hytera cited to one word “yes” and omitted the remainder of Dr. Wicker’s explanation in which, contrary to Hytera’s blatant omission and equally blatant misrepresentation, did not support Hytera’s claim that “he [Dr. Wicker] conceded Ito describes sequentially checking TSC4 to TSC6 and returning to (i.e., re-selecting) TSC4.” (RBr. at 28 (citing Tr. (Wicker) at 1292:8-10); RRBr. at 23.). Dr. Wicker’s complete testimony on the point at issue is:

Q: Okay. But doesn't it then go back through 4, 5, 6, checking that way?

A: Yes. It says “thereafter, if the presence of a free timeslot of the transmission timeslots is confirmed, the corresponding timeslot maybe used.” So if something frees up after that, it will use that for its control signalling.

(Tr. (Wicker) at 1292:8-14.).

Dr. Wicker's testimony, read and explained in its proper context, indicates that the "yes" at the beginning of his answer is not an admission that Ito "go[es] back through 4, 5, 6, checking it that way." Instead, the "yes" is a way to acknowledge that Dr. Wicker understood the question he was asked before he read the portion of Ito that Hytera's attorney read. Dr. Wicker added to his answer, which Hytera also blatantly omitted, that "if something frees up after that, it will use that for its control signaling."

Hytera provided the same inadequate evidence and unsupported (and at times confused and confusing) arguments for the corresponding limitations of independent claim 15 as it did for claim 9 of the '284 patent. (*See* RBr. at 26-28.). Hytera's incorrect reasoning and confused explanations of Ito in the context of claim 9 of the '284 patent applies equally to claim 15 of the '284 patent.

For the foregoing reasons, Hytera has failed to prove by clear and convincing evidence that independent claims 9 and 15 of the '284 patent are invalid as anticipated by Ito. *Celeritas Techs.*, 150 F.3d at 1361. Since claims 13 and 14 depend from claim 9, Ito does not anticipate claims 13 and 14 for the same reasons provided with respect to claim 9. *SynQor*, 709 F.3d at 1375; *Certain Static Random Access Memories*, 2013 WL 1154018, at *10.

VIII. U.S. PATENT NO. 7,369,869

A. Overview of Infringement⁴² and Motorola's and Hytera's Disputes in Brief

Motorola has alleged that the following Hytera Accused Products infringe claims 1, 6, 17,

⁴² Hytera alleged that the '869 patent is licensed. (RBr. at 45-46.). Hytera was precluded from presenting

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and 21 of the '869 patent: MD, PD5, PD6, PD7, PD9, RD6, RD9, Xle, and Xlp series (“the '869 Accused Products”).⁴³ (CBr. at 27.). In its Initial Post-Hearing Brief and Post-Hearing Reply Brief, Hytera only disputed that the “comparing a second information in the control message to third information preprogrammed in the subscriber unit” to determine if an activity is of interest to a subscriber unit limitation required by claims 1 and 6, and similar limitations recited in claims 17 and 21, are not met by the '869 Accused Products. (RBr. at 33-34; RRBBr. at 24-25.).

Any arguments with regard to any other claim limitations that Hytera failed to make and may try to make, including on appeal, are deemed waived under Ground Rule 10.1.

Motorola's expert for the '869 patent, Dr. Rangan, identified and provided persuasive evidence that the '869 Accused Products meet each of the limitations recited in claims 1, 6, 17, and 21. For the reasons discussed below, the '869 Accused Products infringe claims 1, 6, 17, and 21 of the '869 patent.

evidence during the evidentiary hearing with respect to its Fourth Affirmative Defense, implied or direct licensing, because of the “inadequate evidence and support, not only by the end [of], but even in its Pre-Hearing Brief.” (See Order No. 38 at 9 (Jan. 26, 2018).). Not only was Hytera's Pre-Hearing Brief lacking specific evidentiary support on many issues; but also Dr. Akl's initial expert report contained a great many passages that were conclusory and without explanation. Order No. 38 explains in some detail why Hytera was precluded from putting into evidence that was not even adequately presented pre-hearing. Hytera was permitted during the evidentiary hearing on January 30, 2018, to file on EDIS a proffer of its license defense. (RX-0446C; Tr. at 267:5-23.). Merely because Hytera was permitted to file a proffer does not vitiate the pre-hearing finding in Order No. 38. Dr. Akl's expert report acknowledged that he was no expert on Licensing. He relied solely upon what he was told by Hytera's attorney. Dr. Akl's statements were not supported either by knowledge or explained evidentiary support. Moreover, Hytera's Pre-Hearing Brief on the same issue was conclusory. Effectively, Hytera waived its Fourth Affirmative Defense under Ground Rule 10.1.

⁴³ Infringing code versions 5.06, 7.6, 8.0, and 8.1 can be installed on the '869 Accused Products. (CBr. at 27.).

B. Relevant Claim Terms

The following constructions of the claim terms recited in the asserted claims of the '869 patent have been agreed upon by the Parties or adopted by this Court.⁴⁴

Chart No. 9: Constructions of Claim Terms Relevant to the '869 Patent⁴⁵

Claim Term	Construction
“a wireless communications landscape 100” (claims 1 and 21)	A network with communications resources of RF frequencies, one or more base radios, and one or more subscriber units. (<i>Markman</i> Order, App’x A at Chart 1.).
“determining whether the activity is of interest to the subscriber unit”/“determine whether the activity is of interest to the system” (claims 1, 17, 21)	Determining whether the activity “has utility” to the SU. (<i>See</i> Section VIII.E.2(b), <i>infra</i>). ⁴⁶

C. The '869 Accused Products Infringe Claims 1, 6, 17, and 21 of the '869 Patent

1. Claims 1, 17, and 21 of the '869 Patent

- a) **“A method for scanning a TDMA channel by a subscriber unit in a wireless communications landscape 100, wherein the subscriber unit is operationally connected to at least one base radio over a plurality of channels, the method comprising the steps of” [1pre]/“In a TDMA system whereby the TDMA**

⁴⁴ The Parties disputed the meaning of additional claim terms recited in claims that have been terminated from this Investigation. Those terms are not included in Chart No. 9.

⁴⁵ During the *Markman* hearing and in the Joint Claim Construction Chart, the Parties disputed both of these claim terms. (*See* Joint CC Chart at 7.).

⁴⁶ Hytera asserted that these claim terms are indefinite. (*See, e.g.*, Res’pts Claim Br. at 37.). For the reasons discussed in Section VIII.E.1(b), *infra*, it is a finding of this ID that the terms are not indefinite and that the term “of interest” means “has utility.”

system comprises a plurality of subscriber units and a plurality of base radios, a method for scanning, the method comprising the steps of” [17pre]/“A system for scanning a TDMA channel by a subscriber unit in a wireless communications landscape 100, wherein the subscriber unit is operationally connected to at least one base radio over a plurality of channels, the system comprising” [21pre]

Motorola presented persuasive evidence that the ’869 Accused Products [REDACTED]

[REDACTED]. Hytera did not dispute Motorola’s evidence. (Tr. (Rangan) at 608:10–609:24 (citing CX-1408C ([REDACTED] [REDACTED] [REDACTED]); CDX-0006C.0019 ([REDACTED] [REDACTED])).).

Because Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the ’869 Accused Products meet the preambles of claims 1, 17 and 21.

- b) “locking onto a channel of the plurality of channels by the subscriber unit wherein a subset of the plurality of channels is preprogrammed in a list in the subscriber unit” [1a]/ “locking onto a channel preprogrammed in a list of a subscriber unit whereby the channel carries activity on one timeslot of the TDMA system” [17a]/“a receiver for locking onto a channel of**

⁴⁷ “Q: . . . What is a software requirement specification? A: Sure. The -- when you develop software, you usually start with a requirements document to indicate what the software should do. Q: And have you worked with those types of documents in your work in technology companies? A: Extensively. Q: Okay. In your experience, how do software requirement specifications relate to the ultimately finished products? A: They ultimately finished software has to match those requirements.” (Tr. (Rangan) at 608:17–609:4; *see also id.* at 656:3-8 (“Q: . . . What is a software requirement specification for a particular feature, how does that correspond to the final product, based on your experience in the industry? A: The final software should conform to that specification.”)).

the plurality of channels wherein a subset of the plurality of channels is preprogrammed” [21a]

Record evidence adduced in this Investigation demonstrates that the '869 Accused Products circuitry locks onto a channel from a scan list. Hytera did not dispute this. (CX-0694C.0026; CX-1408C.0071; CX-0377C.0021 ([REDACTED]).). [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. (CPX-0041C at ll.1766-88; CPX-0101C at ll. 2023-422; Tr. (Rangan) at 610:9–615:8; CDX-0006C.0021-24.).

Hytera’s corporate representative, Mr. Jue Liang, confirmed that the '869 Accused Products lock onto a channel at a particular frequency. (CX-0744C (Liang Dep. Tr. (Oct. 12, 2017)) at 64:5-12 ([REDACTED]).). [REDACTED]

[REDACTED]

[REDACTED]).

In its Initial Post-Hearing Brief, Hytera did not offer rebuttal evidence with respect to this claim limitation. Therefore, any argument that Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For these reasons, Motorola has proven by a preponderance of evidence that the '869 Accused Products meet these limitations of claims 1, 17 and 21.

- c) **“transmitting from at least one base radio a control message to the subscriber unit wherein the control message has a first information which informs the subscriber unit of activity present on the channel of the plurality of channels” [1b]**

The record evidence establishes that the repeaters in the '869 Accused products transmit

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a control message, RPTShortLCPara, to the SU, which Hytera did not dispute. (CX-1407C.0024.). Dr. Rangan, Motorola’s expert, explained that [REDACTED]
[REDACTED]
[REDACTED]. (Tr. (Rangan) at 615:18–618:25 (citing CPX-0132C at ll. 2177-94; CPX-0075C at ll. 2116-25; CPX-0122C at ll. 2389-99 ([REDACTED]
[REDACTED]); CDX-0006C.0026-28.). Hytera’s corporate witness, Ms. Xiaohua Zheng, confirmed that [REDACTED]
[REDACTED]. (CX-0749C (Zheng Dep. Tr. (Oct. 9, 2017)) at 89:20-22, 114:23-25, 115:16-20; CX-0750C (Zheng Dep. Tr. (Oct. 10, 2017)) at 137:6-9.

Hytera failed to offer rebuttal evidence to Motorola’s evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the ’869 Accused Products meet these limitations of claims 1, 17 and 21.

- d) **“receiving and decoding the control message for the first information by the subscriber unit” [1c]; “if the first information indicates that activity is present on the channel of the plurality of channels” [1d]/“receiving an activity update message from a base radio of the plurality of base radios wherein the activity update message indicates in a first information the activity on the channel and indicates in a second information at least one characteristic of the activity on the channel” [17b]/ “whereby the receiver obtains an activity update message from the channel wherein the activity update message indicates in a first information activity on the channel and indicates in a second information at least one characteristic of the activity on the channel” [21b]; “a decoder for obtaining the at least one characteristic from the activity update message” [21c]**

Motorola presented persuasive evidence that reflected that the ’869 Accused Products

receive and decode the control message, [REDACTED]
[REDACTED]. (CX-1407C.0024; Rangan Tr. 619:1-621:12 ([REDACTED]
[REDACTED])).

Dr. Rangan explained how [REDACTED]
[REDACTED]
[REDACTED]. (CPX-0155C at ll. 5549-64; CPX-0034C at ll. 5154-64; CPX-0099C at ll. 5640-64; CDX-0006C.0029-31.). Hytera's corporate witness, Mr. Zheng, confirmed that the [REDACTED]
[REDACTED] (CX-0750C (Zheng Dep. Tr. (Oct. 10, 2017)) at 136:2-137:2.).

Additionally, Motorola provided evidence confirming that the '869 Accused Products check if the first information indicates activity present on the channel of the plurality of channels by processing [REDACTED]. Dr. Rangan explained how [REDACTED]
[REDACTED]. (CPX-0034C at ll. 5140-60; CPX-0155C at ll. 5547-71; CPX-0172C at ll. 5641-63; Tr. (Rangan) at 624:10-626:3; CDX-0006C.0036-38.). Mr. Zheng confirmed that [REDACTED]
[REDACTED] (CX-0750C (Zheng Dep. Tr. (Oct. 10, 2017)) at 137:6-9.).

Because Hytera failed to offer any rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For these reasons, Motorola has proven by a preponderance of evidence that the '869 Accused Products meet these limitations of claims 1, 17 and 21.

a) “determining whether the activity is of interest to the subscriber unit by comparing a second information in the control message with a third information preprogrammed in the subscriber unit” [1e]/ “determining whether the activity is of interest to the subscriber unit by comparing the at least one characteristic with preprogrammed third information in the subscriber unit” [17c]/“a comparator which compares the at least one characteristic with third preprogrammed information indicating at least one preprogrammed characteristic to determine whether the activity is of interest to the system” [21d]

Motorola argued that the '869 Accued Products determine whether activity on a scanned channel is of interest to a SU by comparing a “second information” ([REDACTED]) in the control message ([REDACTED]) with a “third information” ([REDACTED]) in the SU. (Tr. (Rangan) at 616:5-8, 633:8-24, 636:1-9.).

Dr. Rangan testified that the [REDACTED] (CX-0076C.0020, 23; Tr. (Rangan) at 633:2-7 ([REDACTED]); CDX-0006C.0043.). Based upon Hytera’s source code, Dr. Rangan explained that [REDACTED] [REDACTED]. (Tr. (Rangan) at 636:1-9 (citing CPX-0034C at ll. 5062-73; CPX-0037C at ll. 7399-412; CPX-0099C at ll. 5564-67).). According to Dr. Rangan, [REDACTED]. (Tr. (Rangan) at 633:8–634:1.). He offered a supported opinion that the [REDACTED] [REDACTED]. (Id. at 636:3-17, 739:3-10 ([REDACTED]).

[REDACTED]).⁴⁸ During the evidentiary hearing, Dr. Akl corroborated and agreed with Dr. Rangan:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁴⁸ Dr. Rangan described hashing as follows: “Q: What is a hashing function? A: So the preprogrammed ID might be long and about, say 24 bits, and the hashing is just simply a process to taking a shorter version of that.” (Tr. (Rangan) at 634:24–635:2.).

[REDACTED]
(Tr. (Akl) at 1192:24–1193:8, 1193:23–1194:15.).

Hytera did not contest [REDACTED]

[REDACTED]. Rather, Dr. Akl contended that [REDACTED]
[REDACTED]. (Tr. (Akl) at 1067:12–
1068:12.). Dr. Akl’s argument is not supported by record evidence.

There is no dispute that [REDACTED]
[REDACTED]. (*Id.* at 1191:15–1192:10 (Dr. Akl
confirming that [REDACTED]
[REDACTED]); Tr. (Rangan) at 633:16-24.). As Motorola pointed out, [REDACTED]
[REDACTED]. The claims of the ’869
patent do not restrict the method of comparison, or exclude the use of hashing. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. (JX-0005 at
5:32–6:11.). This also was confirmed by Dr. Akl:

Q: Okay. Let’s go to column 5. This is the ’869 patent by the way, just for the record. It’s JX-5. I’ll show you the front cover, the ’869. And I’ll show you to column 5, and we’re going to zoom in to – let’s say about line 53. And it talks about how if “if the active transmission on timeslot 1 is directed to subscriber unit 16 and subscriber unit 16 is identified by a 24-bit subscriber unit ID, then the ID field is hashed to 8 bits.” Do you see that?

A: Yes.

Q: Okay. And then it goes on at about line 59 to say, “as is known in the art, there can be many algorithms that can be used to perform the function of hashing and

one such well known algorithm is a Crc8 checksum with a generating polynomial of $g(x)=x^8+x^2+x+1$.” Do you see that?

A: Yes, I see those words.

[REDACTED]

(Tr. (Akl) at 1194:20–1195:15 (emphases added).)

Additionally, Dr. Rangan confirmed the operations as described, stating that [REDACTED]

[REDACTED]

(Tr. (Rangan) at 739:3-10; 633:8–635:11 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(CDX-0006C.0044 (citing CPX-0034 at ll. 5062-73; CPX-0037C at ll. 7399-412; CPX-0099C at ll. 5564-67).).

As Dr. Rangan explained, [REDACTED]

[REDACTED]

(Tr. (Rangan) at 632:17–636:20; CPX-0034 at ll. 5062-73; CPX-0037C at ll. 7399-412; CPX-0099C at ll. 5564-67).).

Dr. Akl failed to rebut the evidence Dr. Rangan presented, or explain why the claims of

the '869 patent exclude the use of hashing to perform the comparison. Thus, his non-infringement theory, [REDACTED], improperly excluded claimed embodiments. *Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 (Fed. Cir. 2013) (“[A] claim interpretation that excludes a preferred embodiment . . . is rarely, if ever, correct.”).

Moreover, there is no dispute that [REDACTED]
[REDACTED]. (Tr. (Akl) at 1191:15–1194:5; Tr. (Rangan) at 633:12–635:16.). There is also no dispute that [REDACTED]
[REDACTED]. (Tr. (Akl) at 1194:6-9 ([REDACTED]
[REDACTED]
[REDACTED]); *see also* Tr. (Rangan) at 635:12-16 ([REDACTED]
[REDACTED])).

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '869 Accused Products meet these limitations of claims 1, 17 and 21.

- b) **“if the activity is of interest to the subscriber unit, then remaining on the channel of the plurality of channels to receive the activity present on the channel” [1f]/“if the activity is of interest, then remaining on the channel to receive the activity; otherwise moving to the next channel in the list” [17d]/“a selector to receive activity which the comparator determines to be of interest” [21e]**

During the evidentiary hearing, Dr. Rangan testified that an activity is “of interest” (which he also referred to as “having utility” based on the plain and ordinary meaning of that term; *see* Section VIII.E.2(b), *infra*) because “the subscriber unit [is] preprogrammed to be interested in one of those groups, characteristics.” (Tr. (Rangan) at 628:8–631:17; 628:16-24 (discussing JX-0005 at 8:48-50 (cl. 7) (wherein an activity of interest is targeted to the SU))). If

[REDACTED]
[REDACTED]. (Tr. (Rangan) at 639:25–642:1 ([REDACTED]
[REDACTED]); CPX-0034C at
ll. 5169-96; CPX-0155C at ll. 5582-97; CPX-0172C at ll. 5671-702; CDX-006C.0050-51.).

Mr. Zheng, Hytera’s employee, confirmed that [REDACTED]
[REDACTED] (CX-0749C (Zheng Dep. Tr. (Oct. 9,
2017)) at 105:16–106:2.).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument that Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the ’869 Accused Products meet these limitations of claims 1, 17 and 21.

2. Claim 6 of the ’869 Patent

- a) “The method of claim 1 further comprising the step of tuning to the next channel in the list that is preprogrammed in the subscriber unit.”**

Dr. Rangan explained that [REDACTED]
[REDACTED]
[REDACTED], which Hytera did not dispute. (Tr. (Rangan) at 644:1–645:7; 645:16–
646:12; CPX-0041C at ll. 1766-88; CPX-0101C at ll. 2023-422; CDX-0006C.0056.).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence

that the '869 Accused Products meet this limitation of claim 6.

D. Domestic Industry: Technical Prong

1. The '869 DI Products Practice Claims 1, 6, 17, and 21 of the '869 Patent

Motorola has alleged that the following DI Products practice the asserted claims of the '869 patent: MOTOTRBO Base Stations (including XPR 8380; MTR3000; XPR 8400; SLR 5000 Series) and MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series) (collectively, the '869 DI Products"). (*See, e.g.*, CPBr. at xi.). In its Initial Post-Hearing and Post-Hearing Reply Briefs, Hytera did not dispute that the '869 DI Products practice these claims. (RBr. at 32-46; RRBr. at 24-27.). Therefore, any arguments pertaining to the '869 DI Products that Hytera may try to make, including on appeal, are deemed waived under Ground Rule 10.1.

Motorola's expert, Dr. Rangan, identified evidence that the '869 DI Products practice each of the limitations recited in claims 1, 6, 17, and 21. Accordingly, Motorola has proven by a preponderance of evidence that the '869 DI Products practice claims 1, 6, 17 and 21 of the '869 patent, and that the '869 DI Products satisfy the technical prong of the domestic industry requirement for the '869 patent.

a) Claims 1, 17, and 21 of the '869 Patent

- i. "A method for scanning a TDMA channel by a subscriber unit in a wireless communications landscape 100, wherein the subscriber unit is operationally connected to at least one base radio over a plurality of channels, the method comprising the steps of" [1pre]/"In a TDMA system whereby the TDMA system comprises a plurality of subscriber units and a plurality*

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of base radios, a method for scanning, the method comprising the steps of” [17pre]/ “A system for scanning a TDMA channel by a subscriber unit in a wireless communications landscape 100, wherein the subscriber unit is operationally connected to at least one base radio over a plurality of channels, the system comprising” [21pre]

Record evidence reflects that the '869 DI Products scan by [REDACTED], which Hytera did not dispute. (CX-0963C.0030 [REDACTED]); CX-0830.0077 (MOTOTRBO XPR 7550/XPR 7580 User Guide).). Based on Motorola's technical documents and source code, Motorola's expert, Dr. Rangan, explained that [REDACTED] (see CPX-0296C at ll. 2485-86, 1970-71, 2437-38, 1908-09) [REDACTED] [REDACTED] (see CPX-0311C at ll. 2921-22) discloses [REDACTED]. (Tr. (Rangan) at 694:16–697:23; CDX-0006C.0079-80.).

Because Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

Thus, the '869 DI Products practice the preambles of claims 1, 17, and 21 of the '869 patent.

- ii. *“locking onto a channel of the plurality of channels by the subscriber unit wherein a subset of the plurality of channels is preprogrammed in a list in the subscriber unit” [1a]/ “locking onto a channel preprogrammed in a list of a subscriber unit whereby the channel carries activity on one timeslot of the TDMA system” [17a]/ “a receiver for locking onto a channel of the plurality of channels wherein a subset of the plurality of channels is preprogrammed” [21a]*

Evidence adduced in this Investigation demonstrates that the '869 DI Products inspect,

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i.e., lock onto, channels preprogrammed in the [REDACTED], which Hytera did not dispute. (CX-1001C.0097, 100, 102 ([REDACTED])). Dr. Rangan opined that the source code comment in CPX-0331C, [REDACTED] [REDACTED] discloses this element. (Tr. (Rangan) at 697:24–702:17; CPX-0331C at ll. 953-61, 982, 1037, 1057; CDX-0006C.0082-83.).

Because Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven that the '869 DI Products practice these elements of claims 1, 17, and 21 of the '869 patent.

iii. “transmitting from at least one base radio a control message to the subscriber unit wherein the control message has a first information which informs the subscriber unit of activity present on the channel of the plurality of channels” [1b]

Motorola offered persuasive evidence that established that the repeaters in the '869 DI Products transmit a control message to the SU ([REDACTED]) with a first information ([REDACTED]) that indicates there is activity present on the channel. (CX-1001C at 98, 146, 245.). Dr. Rangan testified that [REDACTED] in CPX-0296C [REDACTED] [REDACTED]. (Tr. (Rangan) at 702:18–704:14; CPX-0296C at ll. 173-84, 2299-300; CDX-0006C.0085-86.).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, the '869 DI Products practice this element of claim 1 of the

'869 patent.

- iv. *“receiving and decoding the control message for the first information by the subscriber unit” [1c]; “if the first information indicates that activity is present on the channel of the plurality of channels” [1d]/“receiving an activity update message from a base radio of the plurality of base radios wherein the activity update message indicates in a first information the activity on the channel and indicates in a second information at least one characteristic of the activity on the channel” [17b]/“whereby the receiver obtains an activity update message from the channel wherein the activity update message indicates in a first information activity on the channel and indicates in a second information at least one characteristic of the activity on the channel” [21b]; “a decoder for obtaining the at least one characteristic from the activity update message” [21c]*

Motorola produced persuasive evidence that demonstrated that its '869 DI Products receive and decode the control message ([REDACTED] in CX-1001C at 62) for the first information ([REDACTED] in CX-1009C.0100, also called [REDACTED] in CX-1001C). As Dr. Rangan explained, the source code functions [REDACTED] and [REDACTED] process a control message. (Tr. (Rangan) at 704:15–706:9; CPX-0311C at ll. 2886-91; CPX-0315C at ll. 861-75; CDX-0006C.0087-88.). Dr. Rangan explained and offered his opinion that the '869 DI Products involve in a second information ([REDACTED] in CX-1009C; [REDACTED] in CPX-0331C) at least one characteristic of the activity on that channel. (Tr. (Rangan) at 706:10–709:7, 710:17-24; CX-1009C.0100; CPX-0331C at ll. 11233-36, 10417-39, 10447-60, 13388-98, 3294-96; CDX-0006C.0091-92.).

Hytera failed to offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

Based upon record evidence and the reasons explained above, the '869 DI Products

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practice these elements of claims 1, 17 and 21 of the '869 patent.

- v. *“determining whether the activity is of interest to the subscriber unit by comparing a second information in the control message with a third information preprogrammed in the subscriber unit” [1e]/ “determining whether the activity is of interest to the subscriber unit by comparing the at least one characteristic with preprogrammed third information in the subscriber unit” [17c]/“a comparator which compares the at least one characteristic with third preprogrammed information indicating at least one preprogrammed characteristic to determine whether the activity is of interest to the system” [21d]*

Based upon Motorola’s technical documents and source code, Dr. Rangan testified that if the first information ([REDACTED] in CX-1001C) indicates activity on the channel, the '869 DI Products determine whether the activity is of interest (“has utility”) to the SU by comparing a second information in the control message ([REDACTED] in CPX-0331C) with a third information preprogrammed in the SU ([REDACTED] in CPX-0331C), which Hytera did not dispute. (Tr. (Rangan) at 709:8–710:16, 711:10–713:23; CPX-0331C at l. 10455; *see also* CX-1001C.0098 ([REDACTED] [REDACTED]), 151-52; CDX-0006C.0093-94, 98-99, 101.).

Hytera did not present rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument that Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, the '869 DI Products practice these elements of claims 1, 17 and 21 of the '869 patent.

- vi. *“if the activity is of interest to the subscriber unit, then remaining on the channel of the plurality of channels to receive the activity present on the channel” [1f]/“if the activity is of interest, then remaining on the channel to receive the activity; otherwise moving to the next channel in the list” [17d]/“a selector to receive activity which the comparator determines to be of interest” [21e]*

Motorola produced compelling evidence that reflects that if the activity on the channel is of interest to the SU (e.g., [REDACTED]), the SU remains on that channel to receive the activity on the channel, which Hytera did not dispute. (CX-1001C.0152; CX-1008C.0008.). Dr. Rangan explained that source code, [REDACTED], describes remaining on such a channel. (Tr. (Rangan) at 713:14–714:24, 716:2–717:10; CPX-0331C at ll. 11315-23; CDX-0006C.0102-03.).

Motorola’s ’869 DI Products also contain a selector, that is, a processor that executes the code to receive activity. (Tr. (Rangan) at 714:25–716:1; CDX-0006C.0105; CX-1008C.0008; CX-1001C.0152.).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, the ’869 DI Products practice this element of claims 1, 17 and 21 of the ’869 patent.

- vii. *“wherein the operation of the receiver, the decoder, the comparator, and the selector are controlled by a processor” [21f]*

Using Motorola’s technical documents, Dr. Rangan testified that the processors in Motorola’s ’869 DI Products run software to control the operation of the receiver, decoder, comparator, and selector, which Hytera did not dispute. (Tr. (Rangan) at 717:11–719:4 (citing

CX-0942C.0031, 33, 65 ([REDACTED]); CX-0942C.0031 ([REDACTED]); CDX-0006C.108-09.).

Because Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

Based on the evidence presented, Motorola's '869 DI Products practice this element of claim 21 of the '869 patent.

b) Claim 6 of the '869 Patent

- i. "The method of claim 1 further comprising the step of tuning to the next channel in the list that is preprogrammed in the subscriber unit."*

Motorola's unrefuted evidence demonstrates that subscribers of the '869 DI Products [REDACTED] if the activity is of no interest. (CX-1008C at 8; CX-1009C at 100 ([REDACTED]).). Dr. Rangan testified that in such instances, the source code function [REDACTED] performs tuning to the next channel [REDACTED] in CPX-0331C. (Tr. (Rangan) at 716:2–717:10; CPX-0331C at ll. 8927, 8967-83, 12243; CDX-0006C.0106-07.).

Hytera did not present any rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

The '869 DI Products practice the additional claim element recited in claim 6 of the '869 patent.

E. Validity

1. Legal Standard: Indefiniteness

A patent specification must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.” 35 U.S.C. § 112, ¶ 2. The Federal Circuit held that a patent claim is not indefinite “so long as the claim is amenable to construction, and the claim, as construed, is not insolubly ambiguous.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). More recently, the U.S. Supreme Court determined that this standard lacks precision. *Id.* at 2130. Instead, the Supreme Court held:

we read § 112, ¶ 2 to require that a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty. The definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable. The standard we adopt accords with opinions of this Court stating that “the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter.”

Id. at 2129 (citations omitted). A party seeking to invalidate a patent claim must do so by clear and convincing evidence. *See, e.g., Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008) (citing *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1375 (Fed. Cir. 1986)).

2. None of the Asserted Claims of the ’869 Patent Are Invalid

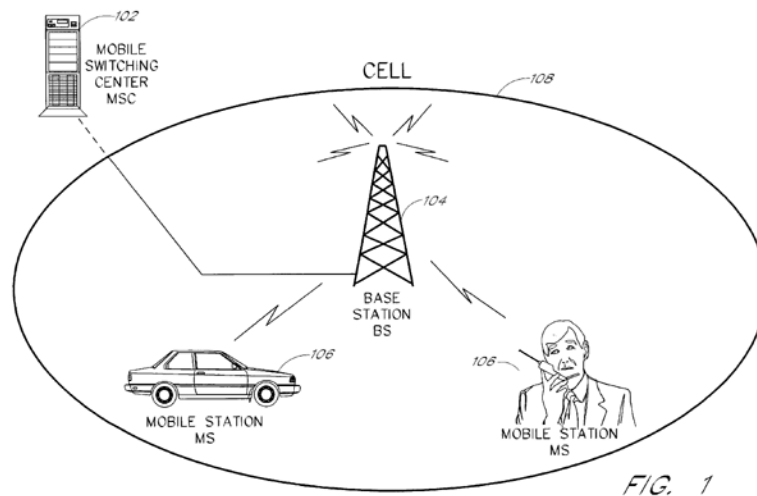
a) Claims 1, 6, 17, and 21 of the ’869 Patent Are Not Anticipated By Wan (RX-0077)

U.S. Patent No. 6,044,069 (“Wan”) issued on March 20, 2000, and lists Yongbin Wan as the sole inventor. (RX-0077.). Hytera alleged that Wan anticipates claims 1, 6, 17, and 21 of the ’869 patent. (RBr. at 35-44.). The PTO did not consider Wan during the prosecution of the ’869 patent. Motorola did not contest this. (*See* JX-0005.). Motorola also did not dispute that Wan

qualifies as prior art to the '869 patent under the relevant provisions of pre-AIA 35 U.S.C. § 102.

Wan discloses a “power management system for a mobile station” that reduces “standby mode processing by receiving and processing single time slots of a short paging channel.” (RX-0077 at Abstract.). The power management system reduces power consumption by only processing “full paging channels comprising four time slots” if the short paging channel alerts the mobile station that a pending telephone call may be directed to it. (*Id.*). Wan’s power management system is a modification to a conventional radio communication system, such as the one shown in Figure No. 12 (Figure 1 of Wan) below. (*See id.* at 6:15-19, 7:39-44.).

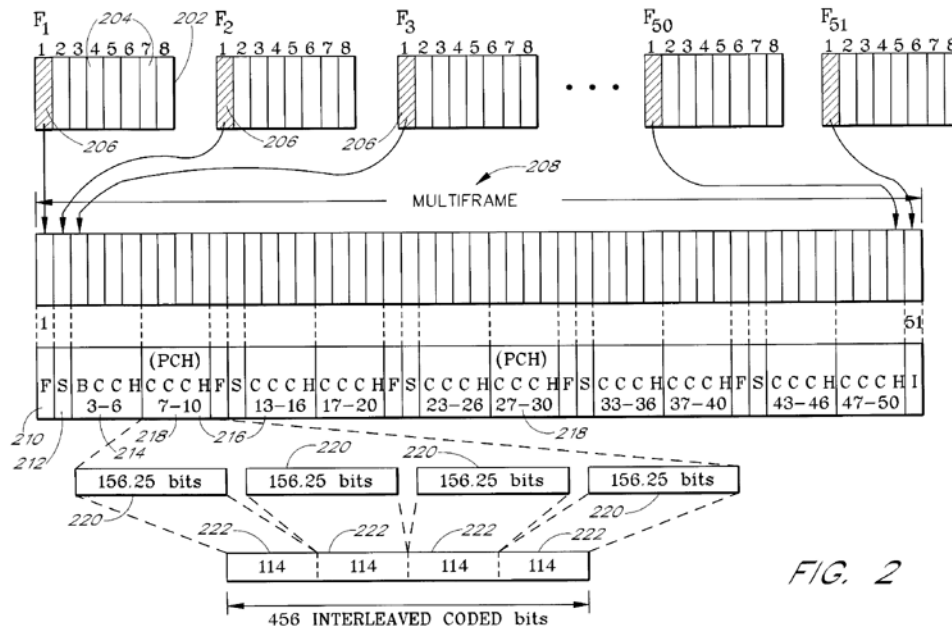
Figure No. 12: Diagram Showing Components of a Wireless Communication System



(RX-0077 at Fig. 1.).

As depicted in Figure 1 of Wan, a mobile station **106**, such as a cellular telephone, scans radio frequency channels for information broadcast by a base station **104**, and then examines the information to determine if a call is directed to it. (*Id.* at 6:54-60.). One type of information broadcast by a base station is control information, the structure of which is illustrated in Figure No. 13 (Figure 2 of Wan) below. (*Id.* at 7:39-44.).

Figure No. 13: Wireless Communication Signal Data Transmitted by Base Station and Structure in Data Frames



(RX-0077 at Fig. 2.).

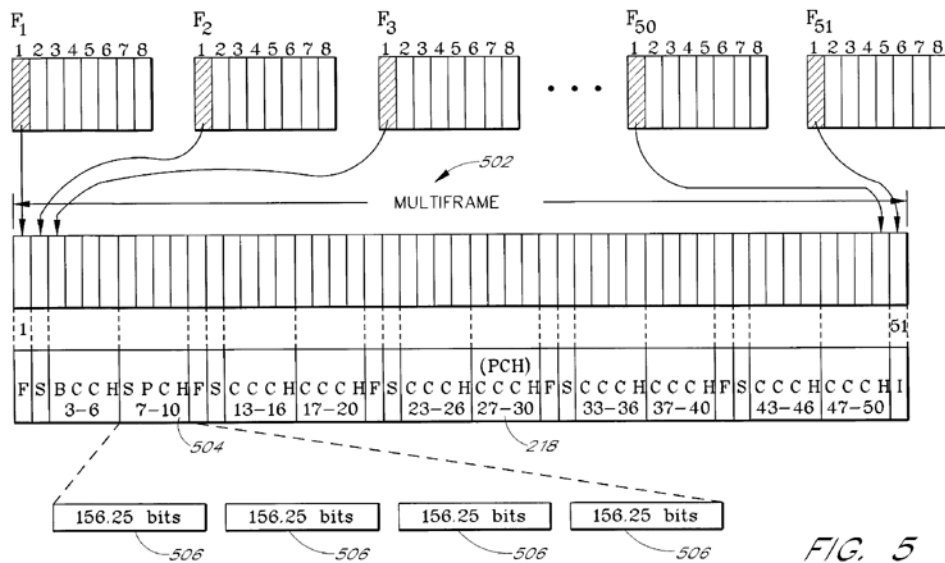
As shown at the top of Figure 2 of Wan, the control data is first structured in TDMA frames **202**, marked as F₁ through F₅₁, each with “eight time slots **204**.” (*Id.* at 7:50-51.). A time slot from each of the 51 frames (*e.g.*, the first time slot **206**) is combined to form a multiframe **208**. The multiframe can include four types of control information. (*Id.* at 7:60-66.). One type of control information is the “common control channel **216** (CCCH), which supports the establishment of a link between a mobile station **106** and a base station **104**.” (*Id.* at 8:12-15.). A CCCH may be a “paging channel **218** (PCH), which provides information indicating whether a telephone call . . . is currently pending for a particular mobile station **106**.” (*Id.* at 8:16-20.). In Figure 2 of Wan, for example, time slots 7 through 10 of multiframe **208** are labeled CCCH and (PCH) to indicate that those four time slots contain the information of a common control channel **216** that is a paging channel **218**.

According to Wan, the receiving and processing of all of the “paging channel [PCH]

information to detect telephone calls . . . consumes power” that the invention of Wan seeks to reduce by providing a new short call alert message containing one-fourth the data of conventional call detection messages. (*Id.* at 6:66-7:21.). The invention of Wan will only look for the longer PCH message if the short message alerts the cellular telephone that there may be a call directed to it. (*Id.* at 7:22-28.).

The short message described by Wan is labeled as “short page channel 504 (SPCH)” in Figure No. 14 (Figure 5 of Wan) below, within multiframe 502. (*Id.* at 9:36-42.). Figure 5 of Wan is similar to Figure 2 of Wan, except that in Figure 2, time slots 7 through 10 contain the CCCH / PCH information and, in Figure 5, those same time slots contain the SPCH information. “Each time slot 506 of the short page channel (SPCH) contains information sufficient to alert at least one mobile station 106 that there may be a telephone call . . . directed to the mobile station 106.” (*Id.* at 9:44-48.).

Figure No. 14: Diagram of a Multiframe



(RX-0077 at Fig. 5.).

Claims 1, 17, and 21 of the '869 patent require that the subscriber unit has a

preprogrammed list of channels, and that it locks into one of the channels. (JX-0005 at 8:14-17, 9:34-36, 10:16-18.). Hytera pointed to the mobile station **104** in Figure 1 of Wan as the claimed subscriber unit and “a frequency for transmitting TDMA frames” as the claimed channel that the mobile station locks into. (RBr. at 35-36.). The frequency referred to by Hytera is presumably a 200 kHz frequency as defined in a “common implementation of the GSM system.” (See RX-0077 at 7:29-34 (“Each 25-MHz range is divided into 125 radio frequency channels, each having a width of 200 kHz.”)).

Motorola asserted that Hytera did not explain which lines in Wan discloses the “preprogrammed list” of channels in the subscriber unit. (CBr. at 40.). Hytera’s Post-Hearing Brief is certainly lacking on this point. Hytera only indicated that the subscriber unit’s ability to synchronize with the base station discloses the requirement that the subscriber unit has a subset of the channels contained in a preprogrammed list. (RBr. at 36.). Hytera’s reliance on its expert, Dr. Akl’s testimony does not serve Hytera’s argument. Dr. Akl provided only a conclusion that the disclosure in Wan that “the cellular telephone scans certain frequencies (frequencies known to be used by GSM) to synchronize communication with the base station” discloses the “limitation in 1b [regarding the preprogrammed list], and the corresponding limitations in claims 17 and 21.” (*Id.* (citing Tr. (Akl) at 1072:26-33 (referring to RX-0077 at 6:49-56, *see* RDX-0003 at 149)); RRB. at 25-26.). Dr. Akl did not provide any reasoning or explanation why his conclusion was correct. Despite his and Hytera’s lack of explanation of the evidence, the evidence itself is minimally sufficient to establish that a person of ordinary skill in the art would understand that the subscriber unit would have to have a preprogrammed list of channels (frequencies) known to be used by the GSM standard in order to “scan [those] frequencies . . . to synchronize communication with base station 104.” (RX-0077 at 6:49-51.).

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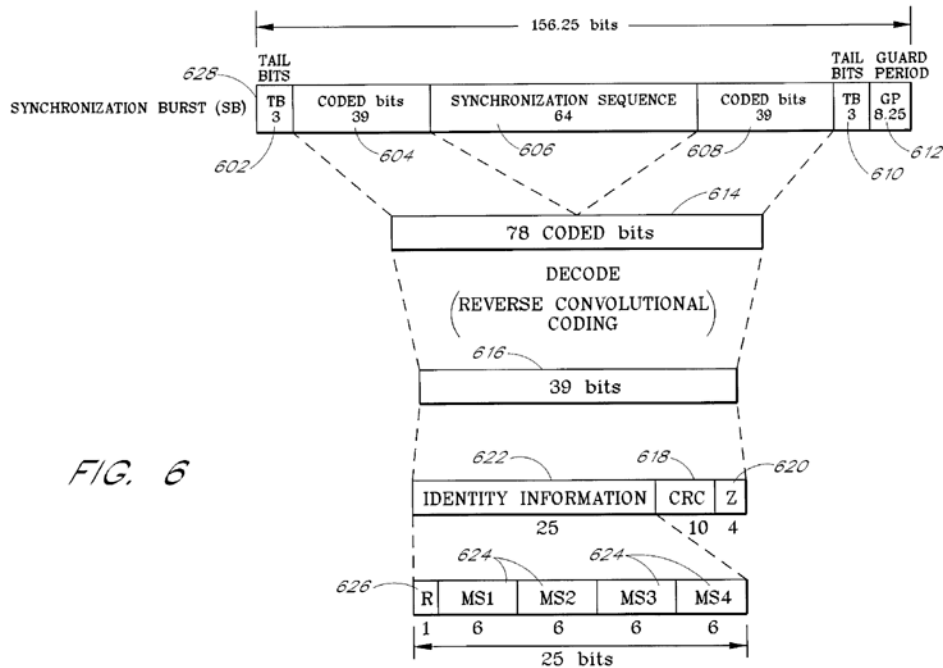
Claim 1 of the '869 patent also requires “a control message” that has “a first information which informs the subscriber unit of activity present on the channel” and “a second information” that is used to determine “whether the activity is of interest to the subscriber unit.” ('869 patent at 8:18-30.). Claims 17 and 21 similarly require “an activity update message” that contains “first information” and “second information.” (*Id.* at 9:37-45, 10:19-24.).

Hytera seemingly proposed two alternate theories of how Wan teaches the control message / activity update message, first information, and second information limitations.

Hytera's *first* theory is that the claimed “control message” / “activity update message” is the entire multiframe (**208** in Figure 2 of Wan, and **502** in Figure 5 of Wan), and the claimed “first information” is a “6-bit short page identity” in the SPCH **504**. (RBr. at 36 (citing RX-0077 at 10:41-54; Tr. (Akl) at 1078:3-8 1078:20-1079:8), 38.).

Hytera did not provide any context for the “6-bit short page identity” value that it asserted is the claimed “first information,” but context is required in order to analyze whether this SPCH value teaches the limitation. (*See* RBr. at 36-38.). As described above in relation to Figure 5 of Wan, the SPCH contains four time slots **506**, each one containing 156.25 bits of “information sufficient to alert at least one mobile station **106** that there may be a telephone call” directed to it. (RX-0077 at 9:44-49.). Figure No. 15, (Figure 6 of Wan) below, illustrates the specific portions of the SPCH message that the mobile station uses to determine that there may be a call directed to it. (*Id.* at 9:57-58.).

Figure No. 15: Diagram of Mapping of Bits of a SPCH Time Slot



(RX-0077 at Fig. 6.).

The top bar in Figure 6 of Wan shows the structure of one SPCH time slot **506** that is received by the mobile device **106**. When the mobile device receives this information, it decodes specific parts of the information to “detect the potential presence of a telephone call.” (*Id.* at 10:26-29.). Specifically, the second bar in Figure 6 of Wan shows that “the mobile station **106** combines the 39 coded bits **604** and the 39 coded bits **608** into a stream of 78 coded bits **614**.” (*Id.* at 10:26-29.). The mobile station then decodes these 78 coded bits **614** into data that contains 25 bits of “identity information **622**,” which is shown in the third and fourth bars of Figure 6 of Wan. (*Id.* at 10:29-38.). The identity information **622** is further divided into four 6-bit fields **624**, MS1 through MS4 in the bottom bar of Figure 6 of Wan, each of which “may contain an identity value corresponding to one or more mobile stations **106**.” (*Id.* at 10:38-42.).

In sum, Hytera pointed to a single 6-bit value **624** (e.g., MS1) of decoded identity

information **622** of coded bits **604/608/614** of a single time slot **506** of the short page channel (SPCH) **504** of multiframe **502** as the claimed “first information which informs the subscriber unit of activity present on the channel.”

Wan teaches that, since the identity values **624** in the SPCH can identify more than one mobile station **106**, a mobile station **106** whose identity matches with a value **624** in the SPCH will then examine the “standard paging channel (PCH) information according to standard GSM specifications to determine whether the telephone call . . . is intended for the respective mobile station **106**” or not. (*Id.* at 10:49-54, 11:7-10.). For the claimed “second information,” Hytera pointed to the “64-bit mobile identify value . . . accessed from the paging information **412** in the PCH [**218**],” which can uniquely identify a single mobile station **106**. (*Id.* at 40-41 (citing RX-0077 at 9:19-35; Tr. (Akl) at 1075:3-9, 1076:7-11, 1082:17-1083:5, 1088:9-10, 1088:23-24).).

Under the GSM standard, a mobile station receives the PCH data in four time slots as indicated in Figure 2 of Wan, above. Like a SPCH time slot **506**, a PCH time slot **220** comprises 156.25 bits of information. (RX-0077 at 8:30-32.). Unlike a SPCH time slot **506**, however, a PCH time slot **220** does not contain independently useful information. Instead, four PCH time slots **220** have to be combined and decoded together in order to extract information that is meaningful to the mobile station. (*Id.* at 8:55-58.). This is illustrated in Figure Nos. 12 and 13 (Figures 3 and 4 of Wan, respectively), below.

Figure No. 16: Diagram of Mapping of Bits in a PCH

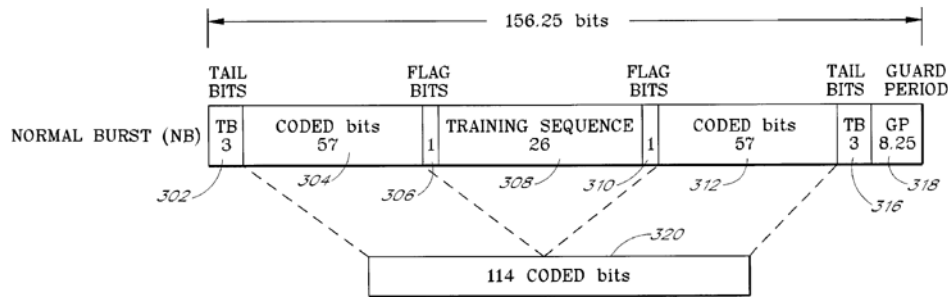


FIG. 3

(RX-0077 at Fig. 3.).

Figure 3 of Wan (Figure No. 17 below) illustrates that a single PCT time slot 220 contains coded bits 304 and 312 that are combined into coded bits 320, which is 114 bits long. (*Id.* at 8:51-55.). The coded bits 320 from each of the four time slots 220 are combined to create a total of 456 coded bits per PCH. (*Id.* at 8:55-60.).

Figure No. 17: Diagram fo Mapping of Coded Bits Comprising a Paging Channel

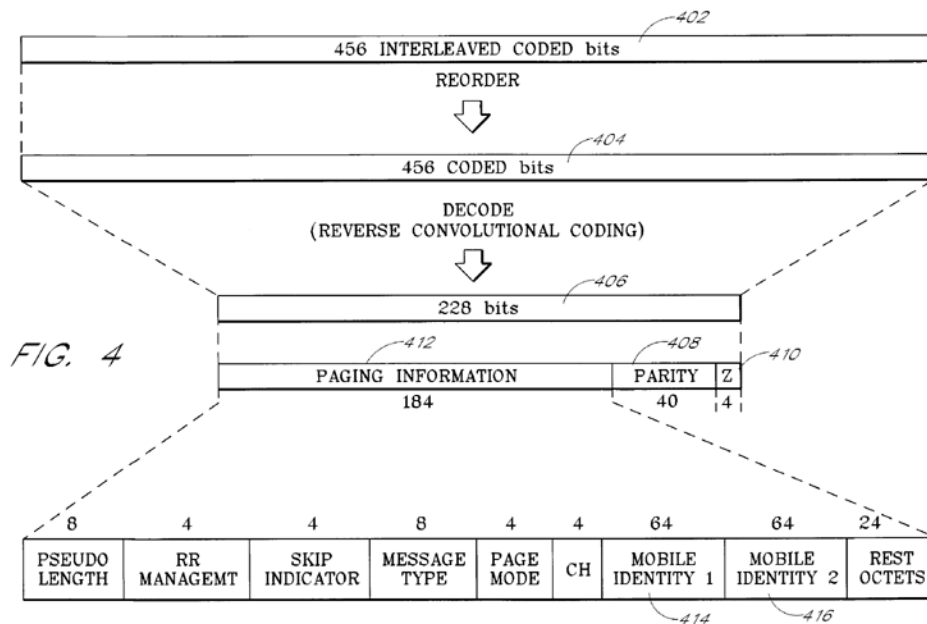


FIG. 4

(RX-0077 at Fig. 4.).

The top bars of Figure 4 of Wan, above, shows that the 456 coded PCH bits **402** arrive interleaved, are reordered into a single “bit stream comprising 456 coded bits **404**,” and then decoded into paging information **412**. (*Id.* at 9:7-22.). The bottom bar of Figure 4 of Wan shows that the decoded paging information contains mobile identity 1 **414** and mobile identity 2 **416**, each of which can contain a 64-bit identifier of a specific mobile station **106**. (*Id.* at 9:22-31.). If the mobile identity **414** or **416** matches an internally stored identification code of the mobile station **106**, the mobile station **106** determines that the telephone call was directed to it. (*Id.* at 9:32-35.).

In sum, Hytera pointed to a single 64-bit mobile identity value **414** or **416** of decoded paging information **412** of the deinterleaved 456 coded bits **402/404** that was formed by combining the coded bits **304/312/320** from all four time slots **220** of the page channel (PCH) **218** of multiframe **208** as the claimed “second information in the control message.”

Claims 1, 17, and 21 require that the first information and second information be on the same message. (*See* RBr. at 36-38.). Motorola argued that Wan does not disclose a single message that contains both the required first information and second information, under Hytera’s *first* theory, because the SPCH and PCH are separate messages. (CBr. at 40.). Motorola argued that the multiframe, which Hytera pointed to as satisfying the message limitations, is not itself a message, and that it has many distinct messages within it. (*Id.*).

The Parties did not propose the claim term “message” for construction during the *Markman* proceedings, and each party now accuses the other of using a never-before-disclosed improper definition of the term. (RBr. at 36-37; CRBr. at 16-17.). Motorola’s expert testified that a message can comprise multiple time slots, but it “has a precise beginning and end as

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defined by the standard” and the time slots that comprise the message “would be decoded together.” (Tr. (Rangan) at 1330:3-15.). Hytera countered that the ’869 patent uses the term broadly to refer to “signaling messages,” “frame synchronization messages,” “CACH messages,” “activity update messages,” “LC messages,” and “data messages.” (RBr. at 37 (citing JX-0005 at 2:67, 4:39-40, 4:49-58, 6:12-37, 6:38-60).).

The term “message” does not need construction; it has a plain and ordinary meaning in that a message is what the devices in the system would recognize as a message. For example, in the ’869 patent, a base unit sends an “activity update message” to a subscriber unit. (JX-0005 at 4:59-5:5.). The subscriber unit recognized that this is a message that provides an update on the presence and type activity of the time slots on the channel, and on the subscriber unit or units to which the activity is directed. (*Id.* at 5:6-65.).

Wan relies on the GSM standard to define what the devices in the system would recognize as messages. The GSM standard states that the “frequency correction channel **210** (FCCH)” provides the “mobile station **106** with the frequency reference of the GSM system.” (RX-0077 at 7:65-8:15.). The mobile stations (subscriber units) therefore would recognize the FCCH as a message that contains the frequency reference. Similarly, the mobile stations recognize that “synchronization channel **212** (SCH)” is a message that contains a key for demodulating information from the base station, that “broadcast control channel **214** (BCCH)” is a message that contains information about the network, and that “common control channel **216** (CCCH)” is a message that contains information on how the mobile station can establish a link with the base station. (*Id.*).

Hytera confused a message with a vehicle for carrying a message. In Wan, a multiframe is simply a vehicle, as defined by the GSM standard, for carrying different types of control

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messages. (RX-0077 at 7:39-65.). A multiframe is not a message that the base station sends to a mobile station. Instead, the base station sends a message, such as a CCCH message, to a mobile station by wrapping the message in a multiframe vehicle, as shown in Figure 2 of Wan, above.

Hytera's argument that the SPCH is the first information and the PCH is the second information within the multiframe message is incorrect. The SPCH is a message sent by the base station with the purpose of alerting the mobile stations that there may be a call on the channel. (RX-0077 at 9:44-48; *see id.* at 7:11-28 (referring to the SPCH concept as a "short page *message* (or call alert *message*) containing one-fourth the data of existing paging (call detection) *messages*") (emphasis added).). As described above, the mobile stations treat the SPCH as a message that is separate from the other messages in the multiframe vehicle. (*See* RX-0077 at 7:19-29 ("A mobile station thus receives and processes the *short page message* to detect telephone calls and page messages, *rather than* receiving and processing the existing, much *longer paging messages.*") (emphasis added).). Similarly, the PCH is a message sent by the base station to inform the mobile stations the specific mobile station to which the call is directed. (*Id.* at 10:49-53.). As described above, even though the PCH information spans four time slots, the mobile stations treat the PCH as a message that is separate from the other messages in the multiframe vehicle. (*See* RBr. at 35 ("Wan discloses . . . receiving and processing a short paging channel [SPCH] Once alerted, the mobile station receives and processes full paging channels [PCH]").).

In addition, claim 1 of the '869 patent requires that the subscriber unit (mobile station) decode "the control message for the first information." ('869 patent at 8:23-24.). The multiframe cannot be the control message, as Hytera has argued, because the multiframe as a whole is not decoded for the first information. Instead, only one timeslot within the multiframe

that corresponds to the SPCH is decoded for the first information. Other information in the multiframe, such as the PCH, remains encoded unless the subscriber unit decides to separately decode such information. (Tr. (Rangan) at 1316:17-1317:10 (“you want to decode the short paging message and then if there’s no activity, you can quickly go back to sleep . . . only if there’s activity on that short paging message do you need to decode the whole message”).).

Because the multiframe is not a “message,” Hytera has failed to establish that Wan discloses the control message of claim 1 or the activity update message of claims 17 and 21 under its *first* theory.

Hytera’s *second* theory is that the claimed “control message” / “activity update message” is the SPCH itself, with the claimed “first information [that] indicates that activity is present on the channel” being the reserve bit of the SPCH and the claimed “second information” being the 6-bit short page identity of the SPCH. (RBr. at 36-39.). For evidence of the reserve bit, Hytera only referred to the disclosure in Wan that “more than one bit maybe reserved for indicating that there is some reason to scan for and receive particular broadcast data.” (RBr. at 37 (citing RX-0077 at 13:49-52; Tr. (Akl) at 1078:12-1080:6).).

The embodiment referenced that Hytera referenced for the “reserve bit” is one where “battery power is further conserved by avoiding unnecessary processing of other logical channels such as the broadcast control channel **214** BCCH.” (RX-0077 at 13:14-21.). The BCCH **214** label refers back to Figure 2 of Wan, and is one of the “four types of control information” that the multiframe may include, according to the GSM standard. (*Id.* at 7:64-8:15 (“a broadcast control channel **214** (BCCH) which informs the mobile station **106** about specific system parameters it may need to identify the network or to gain access to the network (e.g., location area code, operator identification, information on which frequencies the neighboring cells may

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be found, different cell options, and access other parameters)”). Wan teaches that the SPCH reserve bit can include a value to indicate whether the BCCH information has changed since the last time the mobile station checked the BCCH. (*Id.* at 13:30-43.). If the value of the reserve bit has not changed, the mobile station does not need to check the content of the BCCH, which further reduces power consumption. (*Id.* at 13:43-49.).

Hytera did not establish, with either evidence or argument, that the other limitations of claims 1, 17, and 20 can be met if the reserve bit is the “first information.” The claims require that the first information indicate that activity is present on the channel. Hytera argued that the reserve bit indicates that there is activity on the channel because it tells the subscriber unit that it needs to “scan for and receive particular broadcast data.” (RBr. at 37, 39.). However, the ’869 claims also require that the subscriber unit use the second information to “determin[e] whether the activity is of interest.” However, Wan teaches that the possible activity is that the content of the BCCH has changed, which means the 6-bit short page identity of the SPCH cannot be the claimed “second information” because is not used to determine whether the content of the BCCH has changed. Instead, as described above in reference to Figure 4 of Wan, the 6-bit short page identity of the SPCH (mobile identity **414** or **416**) is used to determine whether a telephone call might be directed to that mobile station, which has nothing to do with the BCCH. (*Id.* at 9:32-35.).

Hytera argued that Wan discloses “alternative embodiments” where the reserve bit can be used for other purposes. For support, Hytera cited the following sentence of Wan:

In alternative embodiments, more than one bit may be reserved for indicating to the mobile station 106 that there is some reason to scan for and receive particular broadcast data.

(RX-0077 at 13:49-52.). This sentence of Wan is also the only sentence referenced by

Hytera's expert for the "first information" limitation. (Tr. (Akl) at 1078:14-1079:13.). Hytera concluded, without support from Wan or its expert, that "[a] person of skill would consider data on the SPCH or PCH to also be broadcast data because it goes to multiple subscriber units." (RBr. at 38.).

Hytera's conclusion does not follow from its cited portion of Wan, nor does Wan support the conclusion. As discussed above, the embodiment in Wan that discloses the reserve bit is focused on using the reserve bit to reduce how often the mobile station has to check the content of the broadcast control channel (BCCH). The sentence quoted by Hytera teaches that one bit, which can only indicate two values (a 0 or a 1), may not provide the necessary granularity, so "more than one bit maybe reserved." (RX-0077 at 13:49-52.). The sentence does not teach that the reserve bit (or bits) could be used for any other purpose other than indicating that the content of the BCCH has changed, nor does it imply that "particular broadcast data" refers to data other than that contained in the BCCH.

Because the reserve bit of the SPCH is not a "first information" if the 6-bit short page identity of the SPCH is the "second information," Hytera has failed to establish that Wan discloses the control message of claim 1 or the activity update message of claims 17 and 21 under its *second* theory.

For the foregoing reasons, Hytera has failed to prove by clear and convincing evidence that independent claims 1, 17, and 21 of the '869 patent are invalid as anticipated by Wan. *Celeritas Techs.*, 150 F.3d at 1361. Since claim 6 depends from claim 1, Wan does not anticipate claim 6. *SynQor*, 709 F.3d at 1375; *Certain Static Random Access Memories*, 2013 WL 1154018, at *10.

b) Claims 1, 17, and 21 of the '869 Patent Are Not Indefinite

Hytera argued that the terms “determining whether the activity is *of interest* to the subscriber unit” and “determine whether the activity is *of interest* to the system” in independent claims 1, 17, and 21 are indefinite, because a person of ordinary skill in the art reading the claims and the specification would not understand with reasonable certainty what it means for a subscriber unit to determine whether the activity is “of interest.” (RBr. at 44 (emphasis added)). According to Dr. Akl and Hytera’s argument “these claims do not indicate what comparing results will make the device to determine the activity is *of interest*.” (*Id.*; Tr. (Akl) at 1104:4-16 (emphasis added)). For the reasons discussed below, Hytera’s assertions are not supported by the intrinsic and extrinsic evidence.

Independent claims 1, 17, and 21 explicitly state that activity is “of interest” if it matches information preprogrammed in the SU: (i) claim 1 states that “whether the activity is of interest to the subscriber unit [is determined] by comparing a second information in the control message with a third information preprogrammed in the subscriber unit”; (ii) claim 17 states that “whether the activity is of interest to the subscriber unit [is determined] by comparing the at least one characteristic with preprogrammed third information in the subscriber unit”; and (iii) claim 21 states that “a comparator . . . compares the at least one characteristic with third preprogrammed information indicating at least one preprogrammed characteristic to determine whether the activity is of interest to the system.” (JX-0005 at 8:27-30, 9:42-45, 10:27-30; *see also* CDX-0006C.0041.).

These recitations would guide a person of ordinary skill to understand the meaning of the step of “determining” an activity is “of interest” with reasonable certainty based on whether its “second information” matches information preprogrammed in the subscriber unit (“third

information”). *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1379 (Fed. Cir. 2017) (term “visually negligible” definite where patent explained creating visually negligible indicators); *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1336 (Fed. Cir. 2010) (“hybridization” term definite where patent described how to select groups for hybridization).

Moreover, a number of the dependent claims provide specific examples of “interested activity.” For instance, claim 7 recites, “[t]he method of claim 1 wherein the activity is of interest if the control message indicates that the activity is *targeted for the subscriber unit*.” (*Id.* at 8:48-50 (emphasis added); *see also* Tr. (Rangan) at 628:18-24; CDX-0006C.0041.). Claim 22 also states that a characteristic of interest includes “identification, voice, data, group, individual, emergency, and non[-]emergency.” (JX-0005 at 10:37-40; *see also* Tr. (Rangan) at 629:2-4; CDX-0006C.0041.).

Additionally, the claims of the ’869 patent indicate what the SU does when such activity is found. For example, according to claim 1, if activity is deemed “of interest,” the SU “remain[s] on the channel.” (*Id.* at 8:31-33; *see also id.* at 9:18-20 (Claim 13 states that “if the data message is of interest,” the SU is to “remain[] on the channel . . . [for] further process[ing].”). Claim 2 dictates that “if the activity is of interest,” the SU “render[s] audio of the activity.” (*Id.* at 8:34-36.).

The specification of the ’869 patent identifies clearly described activities that are “of interest” to the SU. These activities (or transmissions) include “voice, data, group, individual, emergency, and non-emergency”. (*See, e.g., id.* at 3:40-58, 5:38-41.). The specification also confirms that if the activity is “of interest,” the SU will use it by receiving, processing, or rendering it. (*See, e.g., id.* at Abstract (“remains on the channel to receive the activity”), 6:19-21 (“the data message is further processed”), 5:41-44 (“audio is rendered”); *see also* Tr. (Rangan) at

629:9–630:16, 630:19-21; CDX-0006C.0042.). Conversely, the specification is clear that if the activity is of no interest, the SU does not receive or process one of the specific activities. (*See, e.g., id.* at 6:21-22 (if the ID is of no interest, “the scanning SU tunes to the next channel”), 6:61-65 (“If the ID field 308, 310 of the activity update message 300 does not contain an ID that is of interest to the scanning SU (Block 212), then the scanning SU moves to the next channel in the preprogrammed scan list.”); Tr. (Rangan) at 631:14-17.).

Accordingly, a person of ordinary skill in the art would not find the term “of interest” indefinite but would understand the plain and ordinary meaning to be that the claimed SU determines activity is “of interest” if it “has utility” to the SU or system. (Tr. (Rangan) at 627:8–632:16.).

Hytera’s technical documents describe the accused scan functionality and “interested activity” in an analogous manner, and therefore confirm that an activity “of interest” is not indefinite:

[REDACTED]

(CX-0076C at 20 (emphases added); *see also* Tr. (Rangan) at 632:9-16 ([REDACTED])

[REDACTED]

[REDACTED]

[REDACTED]) (emphases added).).

Clearly, Hytera understands and implements the features “of interest” because one of Hytera’s corporate witnesses, Xiaohua Zheng, Vice General Manager of Hytera DMR Division,

testified that she understood the scope of the term “of interest” and that it is not indefinite. When Ms. Zheng testified about [REDACTED] the '869 Accused Products, she stated:

[REDACTED]

(CX-0749C (Zheng Dep. Tr. (Oct. 9, 2017)) at 105:19-23 (emphasis added).).

Courts analyzing the “of interest” phrase have rejected the same argument that Hytera made that “of interest” is an indefinite term when there is a disclosure in a patent of examples of what the term “of interest” means or is understood to mean. For example, in *Personalized User Model LLP v. Google Inc.*, the court held that the challenged term (“estimating a probability $P(u/d)$ that an unseen document d is of interest to the user u ”) was definite because the specification gave examples of “documents of interest” and disclosed a method to determine whether a document is of interest. *Personalized User Model LLP v. Google Inc.* No. CIV. 09-525-LPS, 2012 WL 295048, at *23-24 (D. Del. Jan. 25, 2012). Similarly, in *IMX, Inc. v. E-Loan, Inc.*, the court concluded that the disputed term (“using identifiers which might be of interest to lenders”) was definite because the patent’s specification provided examples of information, known to a person of ordinary skill, “which might be of interest to lenders,” such as “a loan amount, property location, property appraisal.” *IMX, Inc. v. E-Loan, Inc.*, 710 F. Supp. 2d 1315, 1323-24 (S.D. Fla. 2010).

In *Personalized User Model* and *IMX* distinguished *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1350 (Fed. Cir. 2005), the sole case on which Hytera relied, the Court held that “[t]he patent provided *no guidance* as to what factors would be used to determine whether a screen was aesthetically pleasing.” *Personalized User Model*, 2012 WL 295048, at *23; *IMX*,

710 F. Supp. 2d at 1324 (emphasis added). Hytera’s reliance on *Personalized User Model LLP* is blatantly misplaced. The claim language for claims 1, 17, and 21 explains how to determine whether activity is of interest—i.e., by comparing the “second information” with the “third information.” The claim language also describes precisely what happens if the claimed comparison yields a match, which is confirmed by the specification. (JX-0005 at 8:9-33, 9:30-48; *see id.* at Abstract (“If [the activity is of interest], then the subscriber unit remains on the channel to receive the activity present on the channel.”); *id.* 6:19-21 (“the data message is further processed”), 5:41-44 (“audio is rendered”).

For the foregoing reasons, Hytera has not proven by clear and convincing evidence that the terms “determining whether the activity is of interest to the subscriber unit” and “determine whether the activity is of interest to the system” in independent claims 1, 17, and 21 are indefinite. *Nautilus, Inc.*, 134 S. Ct. at 2129; *Tech. Licensing*, 545 F.3d at 1327. Moreover, a person of ordinary skill in the art would understand the plain and ordinary meaning to be that the claimed SU determines activity is “of interest” if it “has utility” to the SU or system.

IX. U.S. PATENT NO. 7,729,701

A. Overview of Infringement and Motorola’s and Hytera’s Disputes in Brief

Complainant has alleged that the ’701 Accused Products infringe claims 1 and 11 of the ’701 patent. (CBr. at 43-49.). Of these (2) remaining disputed claims of the ’701 patent, claim 1 is an independent claim while claim 11 is a dependent claim. Both are method claims. A process or method claim is infringed only if each step of the claimed method is performed. *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008). The mere sale or importation of an apparatus capable of performing the patented method does not constitute infringement. *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 775 (Fed. Cir. 1993).

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The essence of the disputes between Motorola and Hytera are whether: (1) Hytera’s “systems” require or use a separate “controller” to operate, in which case they would not infringe; (2) whether Hytera’s use of base and mobile stations constitute “systems,” and whether Motorola’s base and mobile stations when working together constitute “systems;” (3) whether Hytera’s “timer”([REDACTED]) and some of the other Hytera system components, although named differently, are actually “re-keying;” (4) whether the Hytera base stations or “repeaters” check for a message within certain timing boundaries of time slots (Hytera stated they do not); and (5) whether when the Hytera products are “de-keyed” the time timing boundaries for time slots continue to exist (rather than forming new time slots as Hytera argued) and continue to check for transmissions within the time boundaries of the time slots. Ultimately, Hytera’s arguments with respect to each of the disputes were often neither persuasive nor supported by the weight of the record evidence.⁴⁹

B. Relevant Claim Terms

The following constructions of the claim terms recited in the asserted claims of the ’701 patent have been agreed upon by the Parties or adopted by this Court.⁵⁰

⁴⁹ Throughout this Investigation, including in its opening statement during the evidentiary hearing (Tr. at 44:1) through its Post-Hearing Reply Brief, Hytera often argued that Motorola “mischaracterized” or in some way distorted the functioning of Hytera’s products or its arguments. (*See, e.g.*, RRBr. at 27.). For the most part, Motorola’s descriptions were on point and did not distort. Hytera often lacked the evidence to support its own positions.

⁵⁰ The Parties disputed the meaning of additional claim terms recited in claims that have been terminated from this Investigation. Those terms are not included in Chart No. 10.

Chart No. 10: Constructions of Claim Terms Relevant to the '701 Patent⁵¹

Claim Term	Construction
“de-keying” (claim 1)	Base station transmitter is turned off; i.e., the base station downlink is inactive while the base station uplink remains active and available to detect the mobile station transmissions. (<i>Markman</i> Order, App’x A at Chart 1.).
“re-keying” (claims 1 and 11)	Base station transmitter is turned on; i.e., the base station downlink is activated. (<i>Id.</i>).
“re-keying and repeating the transmission, if the transmission is received with proper synchronization before the expiration of the timer” (claim 1)	Plain and ordinary meaning. (<i>Id.</i>).
“wakeup message” (claim 11)	Message that causes the base station to re-key. (<i>Id.</i>).
“conventional TDMA communication system” (claim 1)	TDMA communication system without a central controller to manage communications between the mobile station and the base station. (<i>Id.</i> at Chart 2.).
“proper synchronization” (claim 1)	Received within timing boundaries. (<i>Id.</i> at Chart 2.).

⁵¹ During the *Markman* proceedings, the Parties agreed upon the definitions of “conventional TDMA communication system” and “proper synchronization.” (See Joint CC Chart at 8.). The Parties disputed the remaining terms. (*Id.* at 8-9.).

C. The '701 Accused Products Infringe Claims 1 and 11 of the '701 Patent⁵²

1. Claim 1 of the '701 Patent

- a) **“In a conventional TDMA communications system, wherein the conventional TDMA communications system comprises at least one base station and at least one mobile station, a method of accessing a de-keyed base station comprising” [1pre]; “de-keying a base station in the conventional TDMA communications system” [1a]**

Before the *Markman* hearing, Motorola and Hytera agreed to the definition of the preamble to claim 1 as “a conventional TDMA communication system.” (*See* Chart No.10.). Dr. Wicker, Motorola’s expert testified credibly and persuasively that Hytera’s accused '701 products meet the preamble of claim 1. (Tr. (Wicker) at 370:4-7.). Dr. Wicker testified that Hytera’s accused '701 products [REDACTED]. (*Id.* at 370:8-17; CX-0063C.). He also testified that he analyzed the Hytera’s base stations, mobile stations, and software to determine if they infringe and if they constitute a “system.” (*See* Tr. (Wicker) at 369:8-10 (citing CDX-0005C.196.). According to Dr. Wicker, he looked at five (5) elements contained in the Hytera Legacy Products to determine if they infringe: (i) whether they have “a TDMA system

⁵² Motorola noted that while Hytera distinguishes its legacy products from its new products as they would both pertain to infringement of the '701 patent, Motorola observed that it did not receive any evidence from Hytera that it is selling “new” [REDACTED] in the United States. (CPBr. at 23 n.12.). The only evidence that apparently discussed “new” Hytera products that might infringe the '701 patent was that given by Andrew Yuan, a Hytera witness, who only identified [REDACTED]. (*Id.* (citing Tr. (Yuan) at 841:7-11).). Motorola added to this thin testimony that because Ms. Zheng testified that Hytera [REDACTED] (See CRBr. at 23 n.12.). Not enough evidence was produced to conclude with certainty that Hytera is importing any re-designed '701 patent infringing products into the United States. This might be an issue that Motorola will need to develop if the Commission orders a Cease and Desist Order with a Certification provision.

While Motorola included Hytera’s “new” products that possibly infringe the '701 products into its convoluted and contradictory argument on jurisdiction (*see* Section III.A.3, *infra*), there is still insufficient information about the Hytera redesigned or “new” products to make a conclusive determination whether they infringe even if the Commission has jurisdiction.

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with a mobile and base station”; (ii) whether they “de-key”; (iii) whether they have a “start timer after de-keying”; (iv) whether they “receive mobile station transmission”; and (v) whether they “re-key.” (See Wicker Tr. at 369:13-18.).

Contrary to Hytera’s belated, post-hearing argument that Motorola did not identify a “communications system,” Motorola did so identify the Legacy Hytera communication “systems” and components that infringe claim 1. (CPBr.at 44.). Hytera tried to suggest that the repeaters, mobile stations and the firmware it sells in the United States to customers are nothing more than disaggregated components. The argument strained credulity.

In its Initial Post-Hearing Brief, Hytera did not provide rebuttal evidence on this claim limitation. Therefore, any argument Hytera made belatedly, or may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

Moreover, even if Hytera has not waived its argument, the record evidence does not support Hytera’s argument. Dr. Wicker found that Hytera’s Legacy Products consist of a communications system comprised of repeaters, mobile stations, and system diagnostics that [REDACTED]. (Id. at 370:4-372:5; see also CX-0063C.91-131.). Additionally, Dr. Wicker was asked: [REDACTED]

[REDACTED] (Tr. (Wicker at 371:6-9.). Dr. Wicker referenced Hytera’s own documentation that refers [REDACTED] (Id. at 372:1:5 (citing CX-0063C at 11, 14).).

Hytera’s mobile [REDACTED] [REDACTED]. (CBr. at 44 (citing 370:18-371:15); see also Tr. (Wicker) at 370:20-371:2: ([REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]).). In other words, there is [REDACTED].⁵³

⁵³ Hytera repeated in its Post-Hearing Brief and in its Post-Hearing Reply Brief that Dr. Wicker gave a new meaning to the term “central controller,” not previously disclosed or construed and also narrowed its meaning in violation of the Court’s *Markman* construction. (RBr. at 49; RRBBr. at 27.). Hytera also argued that Motorola “ignored” the claim construction. (RRBr. at 27.). I disagree with Hytera’s arguments and with its attempts to distort the meaning of “central controller” as contained in the language of the ’701 patent itself. As noted above in the text of the ’701 patent, and as repeated here for emphasis, the ’701 patent’s description of a “conventional wireless communication system” includes: “In such an environment and as is known in the art, the wireless communication system is termed ‘conventional’ to denote the lack of a central controller to manage the communications between the MSs [mobile stations] and the base stations.” (See JX-0007 at 1:13-28.). See, e.g., *Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 (Fed. Cir. 2013) (“[A] claim interpretation that excludes a preferred embodiment . . . is rarely, if ever, correct.”). Aside from Black letter patent law that to read out of the embodiment a “central controller” as a separate component distinct from the base and mobile stations is “rarely . . . correct,” Hytera did not identify a single piece of evidence to show how and where its accused products contained a separate, “central controller.” One of the purposes of the ’701 patent is to eliminate the need for a separate, central controller.

Figure No. 18: Hytera's DMR System Planner



(CDX-0005C-199 (citing CX-0063C.0131)).

Additionally, Motorola identified several of Hytera's DMR TDM "systems" in equipment Hytera deploys in the United States. These included a Hytera case study showing its DMR systems with PD782 subscribers and RD982 repeaters at St. Vincent's Hospital in Alabama, and another such system using PD682 and PD687 subscribers and RD982 repeaters in a system at the Appleton Center in Wisconsin. (CBr. at 43 (citing CX-1841 and CX-1843; Tr. (Wicker) at 370:8-371:15)). As Motorola noted, [REDACTED] [REDACTED]. (CBr. at 43-44 (citing CX-0745C (Guan Dep. Tr.) at 65:2-9; 208-17-21; 213-23-214:9; CX-0747; (Guller Dep. Tr.) at 244:22-245:4)). Dr. Akl also acknowledged that Hytera's repeaters were used with subscribers. However, he provided no other explanation and did not describe or cite to any evidence that Hytera's components working together did not comprise "systems" of communications. (*See* Tr.

(Akl) at 1169:25-1172:11; *see also* CX-1843; CX-1841). [REDACTED]

[REDACTED]. (*See* Tr. (Wicker) at 370:18-371:15.).

Hytera argued belatedly, post-hearing, that because the Court’s construction of the preamble, and that where the “controller” was located was broad and not limited to any specific form of management, somehow, [REDACTED], and therefore they are somehow non-infringing. (RBr. at 49 (citing Tr. (Akl) at 930:9-931:23).). This makes no sense because the ’701 patent’s description of a “conventional wireless communication system” includes the following language:

In such an environment and as is known in the art, the wireless communication system is termed “conventional” to denote the lack of a central controller to manage the communications between the MSs [mobile stations] and the base stations.

(*See* JX-0007 at 1:13-28.).

The ’701 patent specification clearly calls for a *separate* central controller component in addition to a base station and mobile station; otherwise, the term “central controller” would be surplusage and would read out an embodiment. *See, e.g., Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 (Fed. Cir. 2013) (“[A] claim interpretation that excludes a preferred embodiment . . . is rarely, if ever, correct.”).

Moreover, Hytera did not make the argument in its Pre-Hearing Brief, i.e., that [REDACTED] let alone provide facts to support its argument. Indeed, Hytera did not cite to any evidence in its Pre-Hearing Brief either with respect to the limitations recited in claim 1 let alone to the patent specification and intrinsic evidence. At best, Hytera’s Pre-Hearing Brief contained nothing more than short, conclusory statements with no

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explanations or explication. (RPBr. 48 and 49; *see also* CRBr.at 23 (citing Tr. (Zheng) at 883:24-884:12; Tr. (Akl) at 930:8-931:23).).

Therefore, because it lacked any support for its argument, which was raised late, Hytera waived its argument on this issue, including on appeal, pursuant to Ground Rule 10.1.

With respect to the “de-keying” step of claim 1, while Hytera claimed in its Pre-Hearing Brief that none of the ’701 Accused Products contained a “de-keying” step but offered no evidence pre-hearing, it dropped completely that argument by the time it filed its Post-Hearing Brief. (RPBr. at 49; RBr. at 46-49.). Therefore, Hytera waived or abandoned its argument with respect to the “de-keying” step, including for appellate purposes, under Ground Rule 10.1.

Moreover, even assuming *arguendo* and in the alternative that Hytera did not waive its argument, contrary to Hytera’s assertion, Dr. Wicker identified the “de-keying” step in Hytera’s Legacy Products through Hytera’s source code and other documents (i.e. where “de-keying” is construed as when a base station transmitter is turned off, or the downlink is inactive, while the base station uplink remains active and available to detect the mobile station transmissions). (*See* RPBr. at 49; *see also* CPBr 44.).

Dr. Wicker referenced [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. (Tr. (Wicker) at 373:5-24
(citing CX-0314 at 30, 33).) [REDACTED]
[REDACTED] (Tr. (Wicker) at 373:10-20.) [REDACTED]
[REDACTED] (*Id.* at 373:20-374:3.) [REDACTED]
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (See CPBr. at 44 (citing CPX-0040C; CPX-0075C; CPX-0122C; CPX-0132C; CPX-0171C; CPX-0172C; CPX-0231C; CPX-0232C; CX-0750C (Zheng Dep. Tr.) at 210:12-15, 211:12-18, 218:9-22, 214:4-19; CX-0746C (Chia Dep. Tr.) at 28:23-29:4; CX-0747C (Guller Dep. Tr.) at 150:22-23,244:22-245:4; CX-0745C (Guan Dep. Tr.) at 208:9-24, 213:16-214:9); *see also* CBr. at 45; Tr. (Wicker) at 373:5-374:3.).

Hytera's Legacy Products include additional details that describe how the repeater deals with "time slots," and the location of timing boundaries. According to one of Hytera's documents, [REDACTED]

[REDACTED]. (Tr. (Wicker) at 374:6-11). [REDACTED]

[REDACTED]

[REDACTED]. (*Id.* at 374:12-16.).

Additionally, Dr. Wicker relied upon testimony of one of Hytera's engineers, Ms. Zheng, as well as additional Hytera documentation, CX-0063 at 120 and 131, and Hytera [REDACTED]

[REDACTED] to support his conclusion that Hytera's [REDACTED]

[REDACTED]

[REDACTED]. (Tr. (Wicker) at 374:19-375:25 (citing Ms.

Zheng's testimony: [REDACTED]

[REDACTED]), 375:3-9

(citing CPX-0172C, ll. 1800-04).).

As Dr. Wicker explained, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (Tr. (Wicker) at 375:3-376:6.). In other words, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. (See CBr. at 45 (citing Tr. (Wicker) at 377:18-379:4; CPX-0172C at ll. 730-843; CX-0750 (Zheng Dep. Tr.) at 214:4-9, 218:17-22, 220:2-9; see also CX-0746C (Chia Dep. Tr.) at 28:23-29:4.).

Hytera did not provide a scintilla a of evidence in its Pre-Hearing Brief to support its conclusory assertion that its Legacy Products do not “enter such a state,” referencing de-keying. (RPBr. at 49.). Hytera’s Post-Hearing Brief also did not specifically address the “de-keying” state other than to assert that Motorola never identified the products that actually “de-keyed” or “re-keyed” as being legacy products. While Hytera’s expert Dr. Akl did not agree the “de-keying” step occurs in Hytera’s legacy products, because he claimed that Motorola did not prove that the uplink remains active, Dr. Wicker disagreed. Dr. Wicker’s and Motorola’s position correctly noted that the term “uplink” or what it means for an uplink to be active was not part of the *Markman* Order construction. (See Tr. (Wicker) at 376:10-377:10.). As Dr. Wicker noted correctly, the *Markman* Order states: “All the intrinsic evidence confirms that the applicants provided two consistent alternative descriptions of de-keying: (1) ‘base station transmitter is turned off,’ and (2) ‘the base station downlink is inactive while the base station uplink remains active and available to detect the mobile station transmissions.’” (*Id.*; see also *Markman* Order, Appx. A at 28.).

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So, Dr. Wicker's explanation, upon which Motorola relied, with respect to why Hytera's legacy products meet the Markman definition, is correct.

Hytera's argument that Motorola relied almost exclusively upon a third-party (Hytera's distributor) for information about how Hytera's repeaters and mobile stations worked in the United States is clearly incorrect and mis-states the scope of the evidence that Motorola provided and to which Dr. Wicker testified and which Hytera's own witnesses confirmed. (RPBr. at 50, 51; *see also* this Section, above.).

Hytera also made the late argument for the first time in its Post-Hearing Brief that Hytera did not know of the existence of the '701 patent before March 2017. Because that argument was not made pre-hearing, it was waived under Ground Rule 10.1. Even without the waiver, Motorola demonstrated with sufficient evidence that Hytera's products meet the preamble 1(a) and the limitation recited in claim 1(b). Moreover, Section XI, which discusses indirect infringement, describes evidence which demonstrates compellingly that Hytera employees were not only aware of the '701 patent before 2017, but also copied some of the features in their DMR repeaters.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that Hytera's Legacy Products meet and practice the preamble of claim 1 together with "de-keying a base station in the conventional TDMA communications system" as taught by the '701 patent.

b) "starting a timer in the base station when the base station de-keys" [1b]

As described above in Section IX.B.3(a), in the Hytera DMR legacy systems, Hytera's



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[REDACTED]. (CBr. at 45 (citing Tr. (Wicker) at 372:6-376:12; CX-0314C.30; CX-0063C.120, 131; CPX-0172C at ll. 730-843).). As Dr. Wicker described credibly and compellingly, [REDACTED]

[REDACTED]. (*Id.* (citing Tr. (Wicker) at 377:18-379:4; CPX-0172C at ll. 730-843).). [REDACTED]

[REDACTED]. (*Id.* (citing CX-0750C (Zheng Dep. Tr.) at 214:4-9, 218:17-22, 220:2-9; *see also* CX-0746C (Chia Dep. Tr.) at 28:23-29:4; *see also* CPX-0040C; CPX-0075C; CPX-0122C; CPX-0132C; CPX-0171; CPX-0172C; CPX-0231C; CPX-0232C).). The evidence that Dr. Wicker cited and described compellingly supports a finding that Hytera’s Legacy Products meet claim 1(b) of the ’701 patent.

Until its Post-Hearing Brief, Hytera did not explicitly provide its own evidence to rebut Motorola’s arguments and evidence. Hytera’s Pre-Hearing Brief is devoid of evidentiary support, documentary or testimonial. (RPBr. at 48-50.).

Therefore, Hytera’s failure to provide argument supported by evidence with respect to the “de-keying” step in its Pre-Hearing Brief constitutes a waiver, including on appeal, under Ground Rules 7.2 and 10.1.

Even assuming *arguendo* that Hytera’s waiver is set aside, in its Post-Hearing Brief, Hytera failed to counter evidence that Motorola offered of the “de-keying” and “re-keying” states, and of starting a timer in Hytera’s Legacy Products. (RBr. at 46-47.). Hytera simply criticized Motorola’s arguments. Hytera blatantly disregarded the [REDACTED], [REDACTED], and how that works in Hytera’s Legacy Products. (*Id.*). With minimal evidence, Hytera claimed

that its Legacy Products [REDACTED]

[REDACTED] (RBr.at 47-48 (citing RPX-0408C; Tr. (Zheng) at 879:1-881:25)). However, given Dr. Wicker's very clear testimony, this made little sense. It certainly was insufficient, and far too late to undermine Motorola's evidence and explanations. Moreover, Hytera's own witnesses, Ms. Zheng and Mr. Chia, appear undermined by Hytera's belated arguments while confirming Dr. Wicker's testimony and Motorola's arguments. (See CBr. at 45 (citing Tr. (Wicker) at 377:18-379:4; CPX-0172C at 11, 730-843; CX-0750 (Zheng Dep. Tr.) at 214:4-9, 218:17-22, 220:2-9; CX-0746C (Chia Dep. Tr.) at 28:23-29:4); *see also* Tr. (Wicker) at 378:5-6 ("Mr. Chia testified to the same effect. 'When you de-key, there's a timer.'"), 378:1-381:25; CPX-0172C.).

Finally, contrary to Hytera's claim that Motorola failed to identify "any component of the products that are a material part of the invention," to the extent that claim applies to the '701 patent, among all of the other aspects of the system which Dr. Wicker identified (almost without rebuttal) were "de-keying/re-keying." Dr. Wicker confirmed that "de-keying" was a material part of Hytera's base stations through Hytera's repeater software." (CRBr. at 41-42 (citing RBr. at 50; Tr. (Wicker) at 426:18-223; *Cisco Sys., Inc. v. Int'l Trade Comm'n*, 873 F.3d 1354 (Fed. Cir. 2017); *i4i Ltd. P'ship v. Microsoft Corp.*, 670 F. Supp. 2d 568, 580 (E.D. Tex. 2009) (finding that software can constitute a "component").).

For the reasons discussed above, Motorola has proven by a preponderance of evidence that Hytera's Legacy Products meet claim limitations 1(a) and 1(b) of the '701 patent.

- c) **“receiving a transmission from a mobile station” [1c]; “re-keying and repeating the transmission, if the transmission is received with proper synchronization before expiration of the timer” [1d]**

Hytera’s Legacy Products meet claim elements 1(c) and 1(d) of the ’701 patent. Hytera did not dispute Dr. Wicker’s testimony that [REDACTED]. (See RBr. at 47-49; CBr. at 46; Tr. (Wicker) at 379:5-380:16 (citing Hytera source code (CPX-0172C at ll. 730-843)). As Dr. Wicker testified, and as supported by deposition testimony from Ms. Zheng, one of Hytera’s engineers, [REDACTED]. (See Tr. (Wicker) at 381:12-383:24, 385:7-387:19; see also CX-0750C (Zheng Dep.) at 226:21-227:4, 228:19-22, 229:15-17, 230:14-20.). As Dr. Wicker described, again using Hytera source-code and other Hytera documents, [REDACTED]. (Tr. (Wicker) at 382:7-11, 387:21-389:1; see also CX-0750C (Zheng Dep.) at 222:12-20, 222:24-223:3.). Figure No. 19, below, depicts some of the source code that Hytera’s repeaters use during the re-keying process.

Figure No. 19: Hytera DMR's Re-Keying Process



(CDX-0005C-216.).

In other words, [REDACTED]

[REDACTED]. (See Tr. (Wicker) at 380:1-5.). [REDACTED]

[REDACTED]. (*Id.*; see also *id.* at 380:17-24.).

As part of the de-keying and re-keying process, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

(CBr. at 46 (citing CPX-170C at ll. 1348-1537; CPX-100C at ll. 516-570, 1020-1048, 4478-

⁵⁴ A GPIO is a general input/output digital signal pin on an integrated circuit or electronic circuit board whose behavior is controllable (i.e. whether input or output), by the user at run time. “[I]t’s an undefined set of pins that you can use for whatever purpose you wish, or most whatever purpose you wish.” (See Tr. (Wicker) at 383:16-24.).

4681; CPX-359C at ll.207-338.).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. (CBr. at 46 (citing RPX-0408C; RPX-0409C at ll. 1644-1734).).

[REDACTED]

[REDACTED]

[REDACTED]. (CBr. at 46 (citing CPX-0172C ([REDACTED]

[REDACTED]

[REDACTED]).

The key dispute between Hytera’s and Motorola’s experts is whether Hytera’s Legacy Products [REDACTED]

[REDACTED]. (RPBr. at 49; CPBr. at 45-46.). Hytera argued that its Legacy Products [REDACTED]

[REDACTED]

[REDACTED]. (RPBr. at 48 (citing JX-0007 at Fig. 3, 5:48-50, 5:61-6:7).).

As with the other claim 1 elements of the ’701 patent, Hytera did not support its argument in its Pre-Hearing Brief with evidence. (RPBr. at 47, 49-50.). Therefore, any argument Hytera may try to make on these issues, including on appeal, are deemed waived under Ground Rules 7.2 and 10.1.

Nonetheless, Motorola demonstrated that Hytera’s belated, post-hearing explanation of “proper synchronization” was incorrect. (RBr. at. 47.).

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In its Post-Hearing Brief, Hytera argued that Dr. Wicker found [redacted] [redacted] (RBr. at 47.). According to Hytera’s thesis, when its Legacy Products [redacted] (Tr. (Wicker) at 376:8-378:6)), [redacted] [redacted] (RBr. at 47 (citing Tr. (Zheng) at 879:20-881:13; RPX-0408C)). [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] (Id. (citing Tr. (Zheng) at 879:1-881:25); see also Tr. (Akl) at 932:4-933:23.).

Aside from having waived this argument by not raising it pre-hearing, and from admitting that its Legacy Products “de-key,” Hytera’s position and arguments are wrong for other reasons, as Motorola correctly argued. First, Ms. Zheng confirmed that [redacted]

[redacted] . (Tr. (Zheng) at 879:2-10.). [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] . (See CBr. at 48.). Moreover, as Dr. Wicker testified, [redacted] [redacted] [redacted] [redacted] [redacted] .

(See Tr. (Akl) at 1181:1-8.). In this case, also, Dr. Wicker confirmed that [redacted] [redacted] [redacted] [redacted]

[REDACTED]. (See Wicker Tr. 385:7-386:8, 507:1-509:11, 536:8-25.).

For the reasons discussed above, Motorola has proven by a preponderance of evidence that Hytera's Legacy Products meet claim elements 1(c) and 1(d) of the '701 patent.

2. Claim 11 of the '701 Patent

- a) **“The method of claim 1 further comprising requiring a wakeup message from the mobile station before re-keying the base station at expiration of the timer.”**

As described above, with the exception of the SLR 8000 series, Hytera's Legacy Products practice the method described in claim 1. Dr. Wicker explained that the

[REDACTED]
[REDACTED]
[REDACTED]. (CBr. at 48 (citing Tr. (Wicker) at 389:7-390:8; CPX-0172C at ll. 6441-6538.). [REDACTED]

[REDACTED]
[REDACTED]. (CBr. at 48, 49 (citing Tr. (Wicker) at 390:9-391:13; CPX-0172C at ll. 6441-6538; CPX-0154C; CPX-0100C at ll. 516-570, 1020-1048, 4478-4681).). According to Dr. Wicker's virtually un rebutted testimony, [REDACTED]

[REDACTED]
[REDACTED]. (See Chart No. 10.).

Hytera's sole claim in its Pre-Hearing Brief with respect to claim 11 of the '701 patent is as follows: “Motorola has not shown [REDACTED]
[REDACTED] (RPBr. at 50.). Hytera did not cite to *any* evidence from any source to explain its statement. Moreover, during the evidentiary hearing, the only testimony that Hytera's expert Dr. Akl gave was that because claim 11 depends from claim 1,

and claim 1 is not infringed, claim 11 is not infringed. (*See* Tr. (Akl) at 936:3-8.).

Hytera's belated argument that its Legacy Products do not infringe claims 11 and claim 1 of the '701 patent because they do not employ "rekeying and repeating the transmission, if the transmission is received with proper synchronization" and before the expiration of the timer, was not made previously either in its Pre-Hearing Brief, or through evidence given during the evidentiary hearing. Therefore, Hytera waived that argument, including for purposes of appeal, under Ground Rules 7.2 and 10.1.

However, even assuming *arguendo* that the waiver is set aside, Hytera offered no evidence during the evidentiary hearing to support its argument that its Legacy Products do not infringe claim 11 of the '701 patent. Instead, even in its Post-Hearing Brief, Hytera relied on attorney argument rather than on evidence.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that Hytera's Legacy Products meet the limitation recited in claim 11.

D. Domestic Industry: Technical Prong

Motorola identified its domestic industry products as including: the MOTOTRBO Base Stations (including the XPR 8380; MTR3000; XPR 8400; SLR 5000 Series; SLR 8000) and the MOTOTRBO Mobile Stations (including the XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series (collectively, "the '701 DI Products"). (*See, e.g.*, CPBr. at xi.).

Motorola provided evidence that these products are loaded with MOTOTRBO version 2.7, which for repeaters contains [REDACTED] and practice the

patented methods during their normal operation. (CBr. at 49.). Moreover, one of Motorola's witnesses, Mr. Tom Bohn, testified without rebuttal from Hytera that Motorola and its customers use the identified '701 DI Products in the United States. (*Id.* (citing Tr. (Bohn) at 124:20-125:9).⁵⁵ Both generations of Motorola's hardware repeaters implement the '701 patent. (Tr. (Bohn) at 118:17-20; CX-0021C.). Moreover, Mr. Bohn testified that he was involved in incorporating features and functionality of the '701 patent into Motorola's repeaters. He was also involved in testing the same products. (Tr. (Bohn) at 121:14-122:3, 125:3-9; CX-0003C.). Hytera did not dispute that these identified Motorola products practice the '701 patent.

1. The '701 DI Products Practice Claims 1 and 11 of the '701 Patent

a) Claim 1 of the '701 Patent

- i. "In a conventional TDMA communications system, wherein the conventional TDMA communications system comprises at least one base station and at least one mobile station, a method of accessing a de-keyed base station comprising" [1pre]*

Hytera asserted in its Pre-Hearing Brief that Motorola failed to show that Motorola's related domestic industry products "de-key [] a base station in the conventional TDMA communications system (element 1[b] under either party's construction." (*See* RPBr. at 51.). Similarly, Hytera contended that the same was true with respect to all of the claim 1 elements that include the term "re-key" because Hytera claimed that Motorola "did not show [REDACTED] [REDACTED] (*Id.*). Necessarily, Hytera's own argument included

⁵⁵ When he testified during the evidentiary hearing on January 29, 2018, Mr. Tom Bohn was employed by Motorola Solutions as a system design engineer for Motorola's MOTOTRBO product line. He also worked with standardization groups for the protocol that MOTOTRBO uses, including ETSI, and the DMR Association for Interoperability. (*See* Tr. (Bohn) at 103:15-23.). He received an MS degree in engineering from Marquette University before he joined Motorola Solutions. He is an inventor on some 30 patents, including the '701 patent. (*Id.* at 110:14-19, 116:15-18.).

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elements 1(c) and 1(d) because those elements also involve “re-keying.” (*Id.*). However, since Motorola’s construction was adopted for claim 1 and Hytera’s constructions were rejected, Hytera’s construction did not match with the Court’s claim construction. (*See Markman Order, App’x A at 28-29; see also Chart No. 10.*)

In addition to not citing to any evidence (or case law) in its Pre-Hearing Brief to support its bare-bones assertion, Hytera’s Initial Post-Hearing Brief does not address Motorola’s technical domestic industry with respect to the ’701 patent. (RBr. at 46-51.). Therefore, under Ground Rules 7.2 and 10.1, Hytera abandoned or waived its right to contest any of Motorola’s technical domestic industry assertions and proof that the preamble of claim 1 and claim elements 1(a)-1(d) practice the ’701 patent, including for purposes of appeal.

Nonetheless, even without Hytera’s waiver, Motorola has met its burden of proof that its domestic industry products practice at least one or more claims of the ’701 patent, including the preamble of claim 1. Motorola produced enough record testimonial and documentary evidence to prove that its DI products use TDMA digital technology, and that the mobile stations with the base stations constitute a “system” which can operate without a central controller, consistent with the claim constructions. (*See Chart No. 10; see also CPBr. at 49 (citing CX-1281.11; see also CBr. (citing Tr. (Wicker) at 427:22-429:24).*). As Dr. Wicker testified virtually without rebuttal, Motorola’s identified DI products “necessarily” practice the ’701 patent because “[i]f you are operating the base station receiver, it will be doing the ’701 patent invention.” (*See Tr. (Wicker) at 427:2-11.*). Motorola comprehensively identified all of the receivers, mobile stations, that is the MOTOTRBO products, that it claimed practice the ’701 patent. (*See id. at 427:8-429:25 (citing CX-1280 at 22, 216).*).

For the foregoing reasons, Motorola has proven by a preponderance of evidence that

Motorola's DI Products practice the preamble of claim 1 of the '701 patent.

- ii. *“de-keying a base station in the conventional TDMA communications system” [1a]; “starting a timer in the base station when the base station de-keys” [1b]*

As with the preamble of claim 1, Hytera's assertion in its Pre-Hearing Brief that Motorola's identified domestic industry products that Motorola alleged practice claim elements 1(a) and 1(b) of the '701 patent was abandoned or waived under Ground Rules 7.2 and 10.1. In addition to Hytera's failure to cite to any evidence in its Pre-Hearing Brief, Hytera also failed to rebut specifically Motorola's evidence in Hytera's Initial Post-Hearing Brief. (RBr. at 46-51.). Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rules 7.2 and 10.1.

Nonetheless, even without Hytera's waiver, Motorola met its burden of proof that its DI products practice claim 1(a) and (b) limitations because Motorola's DMR, MOTOTRBO repeaters “de-key” [REDACTED]

[REDACTED]. However, [REDACTED]. (CBr. at 50 (citing Tr. (Wicker) at 430:1-431:17; CX-1011C.41, 222; CPX-0324C at ll. 842, 2567-2752; CPX-0323C at 11.561-67, 84).).

Dr. Wicker referenced the [REDACTED], CX-1011C at 41, 22, and Motorola source code to describe

how the base station receiver [REDACTED], thus satisfying the claim element of “de-keying.” (Tr. (Wicker) at 430:1-12). According to [REDACTED]

[REDACTED] (Tr. (Wicker) at 430:1-17.). According to Dr. Wicker's

review of Motorola source code, there is [REDACTED] where the base station

[REDACTED]

[REDACTED] (*Id.* at 431:2:9 (citing CPX-0324C at ll. 2567-2572; CPX-0323C at ll. 561-567, 842).).

With respect to claim element 1(b), “starting a timer,” Dr. Wicker pointed again to Motorola’s [REDACTED], which he quoted as stating [REDACTED] [REDACTED] (Tr. (Wicker) at 431:18-432:8; CX-1011C. 221-225; CX-1001C.2015-210; *see also* CX-1009C.73-75; CPX-0324C ([REDACTED]); CPX-0323C ([REDACTED]); CPX-0332C ([REDACTED]); CPX-0324C at l. 828; CPX-0323C at ll. 361, 1482-1495).). A [REDACTED]. (Tr. (Wicker) at 432:5-8 (citing CPX-0324C at ll. 1482-1495).).

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the ’701 DI Products practice claim limitations 1(a) and 1(b).

iii. “receiving a transmission from a mobile station” [1c]; “re-keying and repeating the transmission, if the transmission is received with proper synchronization before expiration of the timer” [1d]

As with the preamble of claim 1 and claim elements 1(a)-1(b), Hytera’s assertion in its Pre-Hearing Brief that Motorola’s domestic industry products do not practice claim elements 1(c) and 1(d) of the ’701 patent was abandoned or waived under Ground Rules 7.2 and 10.1, including for purposes of appeal. Just as Hytera failed to provide any evidence to support its assertion in its Pre-Hearing Brief, Hytera also failed to rebut the compelling evidence Motorola produced to support its position that its domestic industry products do practice the claim elements of the ’701 patent. (RBr. at 46-51.).

Nonetheless, even without Hytera’s waiver, Motorola met its burden of proof that its DI

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products practice claim 1 limitations 1(c) and 1(d) of the '701 patent.

Based upon a combination of documents, Motorola source code, and Dr. Wicker's testimony, it is evident that Motorola's '701 patent base stations can receive one or more transmissions from mobile stations even while they are de-keyed. (CPBr. at 52; CBr. at 50.).

According to Dr. Wicker's virtually un rebutted testimony, and relying upon the [REDACTED]

[REDACTED]

[REDACTED] (See Tr. (Wicker) at 432:8:22 (quoting CX-1011C at 222-224); see

also CBr. at 50 (when Motorola's MOTOTRBO repeaters receive transmissions, they [REDACTED]

[REDACTED] and [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]) (citing CX-

1011C.222-224; Tr. (Wicker) at 432:9-22, 432:23-436:22; CPX-0324C at ll. 1165, 1263-1276,

1332, 3197-3245; CPX-0332C; CPX-0335C; CPX-0333C, CPX-0336C; CPX-0316C at ll. 492-

918; CPX-0329C at ll. 2343-2479).).

As Dr. Wicker explained the quoted passages from source code or the [REDACTED],

after the base station has de-keyed, and while the base station's [REDACTED] timer is running, the

base station will awake and begin repeating SU-sourced transmissions when the syncing is

occurring [REDACTED] (which is synchronized), and then it will repeat, and the

base station will re-key within the proper timing slot, that is before the expiration of the timer.

(See Tr. (Wicker) at 433:5-435:25.). In part, what Dr. Wicker explained was that proper

synchronization of a transmission can occur during a "window" of timing, and that transmission

was depicted as occurring [REDACTED] to show it was within the proper

timing and synchronization. (*Id.* at 435:8-436:22.).

For the “re-keying” step and claim element 1(d), Dr. Wicker described the depiction of a transmission coming into a base station, which shows that the Motorola products use a [REDACTED] to indicate whether there is [REDACTED] (or as Motorola described it in its Post-Hearing Brief, [REDACTED] [REDACTED]. (CBr. at 51 (citations omitted)). If the [REDACTED] is still running, according to source code, [REDACTED] [REDACTED]. (Tr. (Wicker) at 436:3-22.). So, a transmission has been synchronized to slot 1 or 2, and “[i]f the reactivation timer is still running, [REDACTED], re-key the base station” and when the base station is re-keyed, [REDACTED] [REDACTED] (Tr. (Wicker) at 436:3-22 (citing Motorola source code at CPX-0324C at ll. 1165, 1263-1276, 1332, 3197-3245; CPX-0332C; CPX-0336; CPX-0335C; CPX-0336C; CPX-0316C at ll. 492-918; CPX-0329C at ll. 2343-2479)).

Accordingly, Motorola has proven by a preponderance of evidence that its DI Products practice claim elements 1(c) and 1(d) of the ’701 patent.

b) Claim 11 of the ’701 Patent

- i. “The method of claim 1 further comprising requiring a wakeup message from the mobile station before re-keying the base station at expiration of the timer.”*

As discussed in Section IX.C.1(a), above, Motorola’s MOTOTRBO repeaters and mobile stations practice the method of claim 1. As part of that operation, as also described under the de-keying process, the repeaters initiate a timer after re-keying. (Section IX.C.1(a), *supra.*). After that post-de-key timer has lapsed, claim 11 of the ’701 patent requires a wakeup message from the mobile station before re-keying the base station.

As Dr. Wicker described, Motorola's MOTOTRBO repeaters practice claim 11 by requiring a wakeup message to re-key. As he described it: [REDACTED]

[REDACTED]

[REDACTED] (See Tr. (Wicker) at 437:2-8; see also CBr. at 51 (citing CX-1011C.225 ([REDACTED])); see also CPX-0324C at ll. 829, 3206-3881 ([REDACTED])).

Consistent with the *Markman* construction of a wakeup message as a "message that causes the base station to "re-key," Dr. Wicker again identified [REDACTED], CX-1011C at 225, which states: "while the base station receiver's [REDACTED] timer is not running, the base station receiver will only key in response to a valid [REDACTED]" (Tr. (Wicker) at 437:8:25; see also CBr. at 51 (citing CX-1011C.225)).

For the foregoing reasons, Motorola has proven by a preponderance of evidence that its DI MOTOTRBO products practice claim 11 of the '701 patent.

E. Validity

1. Legal Standard: Obviousness

Pursuant to 35 U.S.C. § 103(a), a patent is valid unless "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made" to a person having ordinary skill in the art. 35 U.S.C. § 103(a). The ultimate question of obviousness is a question of law, but "it is well understood that there are factual issues underlying the ultimate obviousness decision." *Richardson-Vicks*, 122 F.3d 1476, 1479 (Fed. Cir. 1997) (citing *Graham v. John Deere Co. of*

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Kansas City, 383 U.S. 1, 17 (1966)).

After claim construction, “[t]he second step in an obviousness inquiry is to determine whether the claimed invention would have been obvious as a legal matter, based on underlying factual inquiries including: (1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) secondary considerations of non-obviousness.” *Smiths Indus. Med. Sys., Inc. v. Vital Signs, Inc.*, 183 F.3d 1347, 1354 (Fed. Cir. 1999) (citing *Graham*, 383 U.S. at 17). The existence of secondary considerations of non-obviousness does not control the obviousness determination; a court must consider “the totality of the evidence” before reaching a decision on obviousness. *Richardson-Vicks*, 122 F.3d at 1483.

The Supreme Court clarified the obviousness inquiry in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 389 (2007). The Supreme Court said:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* and *Anderson’s-Black Rock* are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Following these principles may be more difficult in other cases than it is here because the claimed subject matter may involve more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement. Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

* * *

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The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents. The diversity of inventive pursuits and of modern technology counsels against limiting the analysis in this way. In many fields it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends. Granting patent protection to advances that would occur in the ordinary course without real innovation retards progress and may, in the case of patents combining previously known elements, deprive prior inventions of their value or utility.

KSR, 550 U.S. at 417-19.

The Federal Circuit has since held that when a patent challenger contends that a patent is invalid for obviousness based on a combination of several prior art references, “the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, and would have had a reasonable expectation of success in doing so.”

PharmaStem Therapeutics, Inc. v. ViaCell, Inc., 491 F.3d 1342, 1360 (Fed. Cir. 2007) (citations omitted).

The TSM⁵⁶ test, flexibly applied, merely assures that the obviousness test proceeds on the basis of evidence--teachings, suggestions (a tellingly broad term), or motivations (an equally broad term)--that arise before the time of invention as the statute requires. As *KSR* requires, those teachings, suggestions, or motivations need not always be written references but may be found within the knowledge and creativity of ordinarily skilled artisans.

Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc., 520 F.3d 1358, 1365 (Fed. Cir. 2008).

⁵⁶ TSM is an acronym that stands for teaching, suggestion, motivation.

2. None of the Asserted Claims of the '701 Patent Are Invalid

a) Samsung (RX-0036) in Combination with Kansal (RX-0039) or Rosen (RX-0037) Does Not Render Obvious Claims 1 and 11 of the '701 Patent

Hytera asserted that various combinations of three (3) prior art references render obvious claims 1 and 11 of the '701 patent. The first reference is International Patent Application PCT/KR99/00040, published on July 29, 1999, as International Publication WO 99/38278 ("Samsung"). It lists Samsung Electronics Co., Ltd. as the applicant. (RX-0036.). The second reference is U.S. Patent Application No. 10/075,821, published on November 21, 2002 as U.S. Publication No. 2002/0172169 ("Rosen"). It lists Eric Rosen and Mark Maggenti as inventors. (RX-0037.). The final reference is U.S. Patent Application No. 10/627,092, published on February 17, 2005 as U.S. Publication No. 2005/0037727 ("Kansal"). It lists Vivek Kansal and Ramabadrans S. Raghavan as inventors. (RX-0039.).

Hytera alleged that: (1) Samsung in combination with Rosen or *vice versa*; and (2) Samsung in combination with Kansal or *vice versa*, renders obvious independent claim 1 and dependent claim 11 of the '701 patent. (RBr. at 51.). There is no dispute that Samsung, Kansal, and Rosen qualify as prior art to the '701 patent under the relevant provisions of pre-AIA 35 U.S.C. § 102. There is also no evidence that the PTO considered Samsung, Rosen, or Kansal during the prosecution of the '701 patent. (*See* JX-0007.).

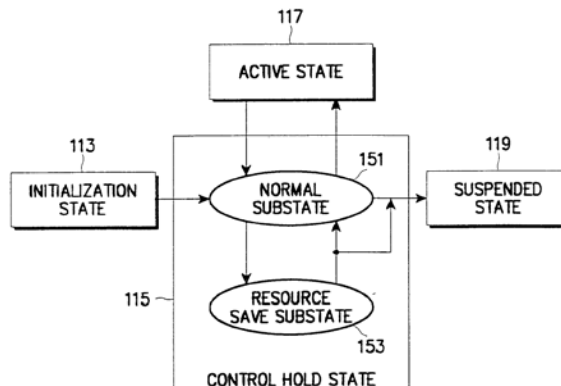
None of these prior art references disclose a "time division multiple access" ("TDMA") system, as required by claim 1 of the '701 patent. (*See* JX-0007 at 7:32-33 (requires a "conventional TDMA communications system" with at least one base station and at least one mobile station).). Hytera acknowledged that Samsung does not disclose a TDMA system and, instead, discloses a "code division multiple access" ("CDMA") system, which uses codes (not

timeslots) to synchronize communication. (CBr. at 51-52 (citing RX-0036 at 3); RBr. at 54.). Rosen and Kansal, on the other hand, disclose TDMA systems. (RBr. at 60-61.).

Hytera said it relied on Samsung only for its disclosure of a “the two-phase de-keying method,” which Hytera argued can be implemented in the TDMA system disclosed in Rosen or Kansal. (*Id.*; JX-0007 at 7:37 (“de-keying a base station” limitation of claim 1).). The term “de-keying” was construed as an action in which the “base station transmitter is turned off; i.e., the base station downlink is inactive while the base station uplink remains active and available to detect the mobile station transmissions.” (*Markman* Order, App’x A at 23.).

According to Hytera, the purpose of the two-phase de-keying method in Samsung is to increase channel efficiency and data communication. (RX-0036 at Abstract; Tr. (Akl) at 940:16-24.). As shown in Figure No. 20 (Figure 2 of Samsung), below, the base station in Samsung has an active state **117** “in which user data is transmitted through a dedicated traffic channel and a control message is transmitted through a dedicated control channel” as well as a control hold state **115** in which the dedicated traffic channel is released and the dedicated control channel is maintained. (Tr. (Akl) at 948:14-949:7; *see* RDX-0002 at 28 (excerpting RX-0036 at 3:4-7).). Hytera’s expert testified that the base station downlink is “inactive” in the control hold state, such that the base station is de-keyed as required by the claims, because the base station releases the dedicated *traffic channel* in this state, while maintaining the control channel. (Tr. (Akl) at 948:14-949:7.). Yet, as discussed below, releasing only the traffic channel is not enough to satisfy the “de-keying a base station” limitation.

Figure No. 20: State Transition Diagram Differentiating the Active and Control Hold States



(RX-0036 at Fig. 2.).

Motorola's expert, Dr. Wicker, rebutted Hytera's description of the evidence of "de-keying" that Hytera argued was contained in Samsung. Dr. Wicker testified that the base station in Samsung's CDMA cellular system is not de-keyed when it enters the "control hold" state because, even though the traffic channel downlink of the base station may be inactive, the base station maintains a dedicated control channel with the mobile station (e.g., a cellular phone). (Tr. (Wicker) at 1259:7-1260:8; RX-0036 at 10:18-21 ("in the control hold state **115**, the dedicated control channel and the pilot channel are maintained bi[-]directionally").). Dr. Wicker explained that this control channel allows the cellular phone to ring on an incoming call, to synchronize with the base station, and to place calls. (*Id.* at 1258:5-1259:22.).

With respect to the Samsung reference, Motorola and Hytera disputed whether the "de-keying" limitation in claims 1 and 11 of the '701 patent requires both the traffic and control downlinks of the base station to be inactive or, alternatively, is satisfied by the inactivity of just the traffic downlink.

According to the '701 patent, an inactive base station downlink requires that the mobile station cannot use the base station for communications until: (1) the base station re-keys with the

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mobile station; and (2) the mobile station synchronizes with the base station.⁵⁷ (JX-0007 at 1:37-51.). However, in the control hold state of Samsung, the existence of the active control channel of Samsung's base station indicates that the base station has *not* de-keyed. Indeed, as Dr. Wicker testified, in the control hold state, the active control channel keeps the mobile station synchronized with the base station. (Tr. (Wicker) at 1258:5-1259:22.). In other words, in the control hold state, the base station downlink remains active and has not become inactive.

The '701 patent discloses as much. It states that control signaling, of the variety that occurs over the control channel connecting Samsung's base and mobile stations, can be achieved only after synchronization between the base station and mobile station, which occurs during or after the re-keying process. (JX-0007 at 1:32-36; RX-0036 at 3:4-7 ("a control message is transmitted through a dedicated control channel").). There is no indication in Samsung that when a base station operates in the control hold state, the base station and a mobile station need to re-key and re-synchronize before the mobile and base stations can use the dedicated control channel. There is no indication in Samsung that when a base station operates in the control hold state, the mobile and base stations are unsynchronized. Therefore, on its face, Samsung discloses a base station that is not de-keyed when it enters the control hold state, as required by claim 1.

Hytera had the burden to prove that a person of ordinary skill in the art would understand

⁵⁷ Hytera argued that in the '701 patent, "the 'downlink' refers to the channels with the timeslots that carry data," i.e., the traffic channels and not the control channels. (RBr. at 55 (citing JX-0007 at 1:33-41).). The cited portion of the '701 patent appears to contradict Hytera's argument. Hytera did not cite to any testimony in its Post-Hearing Brief that might explain its position on this issue. Therefore, the cursory statement is dismissed as attorney argument unsupported by evidence, and is waived, including for purposes of appeal, pursuant to Ground Rule 10.1.

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the Samsung base station to be de-keyed when it enters the control hold state (i.e., when the traffic channel is released while the control channel remains active). However, none of Hytera's witnesses presented any such testimony.⁵⁸ Instead, Hytera asked its expert, Dr. Akl, whether a person of ordinary skill in the art would understand that "releasing the channels" means that the downlink is inactive, to which he responded in the affirmative. (Tr. (Akl) at 953:6-13.).

While Dr. Akl's testimony might provide some value under a different set of facts, it is inapplicable here. Samsung does not disclose "releasing the channels," which suggests that both the traffic and control channels are rendered inactive. Instead, Samsung discloses deactivating the traffic channel while retaining an active control channel. Thus, Dr. Akl's testimony on "releasing the channels" is not persuasive. Samsung lacks disclosure of the "de-keying a base station" limitation.

Accordingly, Hytera has not met its burden by clear and convincing evidence that a person of ordinary skill in the art would understand that Samsung discloses the "de-keying a base station" limitation of claims 1 and 11.

In addition to "de-keying a base station," claim 1 requires that the mobile station "repeat[s] the transmission" after the base station and mobile station re-key "if the transmission is received with *proper synchronization* before the expiration of the timer." (JX-0001 at 7:42-44 (emphasis added).). The Parties agreed that "proper synchronization" means "received within timing boundaries." (*Markman* Order, Chart 2 at 1.). However, Hytera's expert, Dr. Akl, did not provide testimony on whether Samsung disclosed timing boundaries. (See Tr. (Akl) at 970:22-

⁵⁸ Some of the relevant testimony of Hytera's expert, Dr. Akl, was stricken and, therefore, was not considered. (See Order No. 47, App'x A at 26-32; cf. RBr. at 55 (citing Tr. (Akl) at 951:13-953:13).).

971:16 (citing to RX-0036 at 11:21-12:12).). Instead, he testified that, in Samsung, the data from the mobile station “needs to be generated within a set time T_{save}.” (*Id.*). Yet, T_{save} “is a resource save substrate maintaining time,” and on its face has nothing to do with the synchronization of transmissions. (RX-0036 at 14:4-5.). Therefore, Hytera failed to provide expert testimony that the “proper synchronization” limitation is present in Samsung.

Moreover, absent expert testimony, it is not readily apparent that Samsung discloses the “proper synchronization” limitation.⁵⁹ The section of Samsung to which Dr. Akl cited for the “proper synchronization” limitation discusses synchronizing the “dedicated control channel” with the “pilot channel” and generating the “data to be transmitted . . . within the set time T_{save} in the resource save substate,” in order for the base station to transition to “normal substate.” (RX-0036 at 11:21-12:12.). In other words, the cited section of Samsung discusses generating data before the expiration of a timer instead of *receiving* data before the expiration of the timer. The cited section of Samsung also discusses synchronization separately from generating or receiving data and fails to tie synchronization to timing boundaries. (*Id.*).

Consequently, Hytera has not met its burden of proof by clear and convincing evidence that a person of ordinary skill in the art would understand that Samsung discloses receiving a transmission “with proper synchronization” as required by claim 1.

With respect to the Rosen reference, Hytera failed to identify in Rosen the “de-keying of

⁵⁹ Motorola asserted that receiving data “within timing boundaries” cannot occur in a CDMA system such as Samsung, which uses codes, as opposed to a TDMA system which uses timeslots. (CBr. at 52.). However, Motorola did not provide any evidence for its assertion that “within timing boundaries” refers to TDMA timeslots. Thus, its assertion is attorney argument that is given minimal weight.

a base station” limitation missing from Samsung. While Hytera asserted that Rosen “describes a two-stage de-keying method” in the mobile station and “suggests the method could take place in the base station,” Hytera acknowledged that it is not relying on Rosen for disclosing the “de-keying of a base station” limitation. Instead, Hytera relied on Samsung to “explain[] how to” implement the method described in Rosen in a base station.⁶⁰ (*Id.* at 54, 61-62.). Yet, for the reasons set forth above, Samsung does not disclose “de-keying of a base station.” Consequently, Hytera did not meet its burden to prove by clear and convincing evidence that Rosen in combination with Samsung, or *vice versa*, renders obvious the asserted claims of the ’701 patent.

With respect to Kansal, Hytera acknowledged that Kansal does not teach the “re-keying and repeating the transmission if the transmission is received with proper synchronization before the expiration of the timer” limitation of claim 1. (*Id.* at 58-59.). Hytera relied on Samsung to disclose this limitation, asserting that it would have been obvious to combine the Kansal system with the teachings of Samsung that describe the types of transmissions that trigger the re-keying of the base station. (*Id.* at 61-62.). However, for the reasons described above, Samsung does not disclose the “with proper synchronization” limitation. Consequently, Hytera did not meet its burden to prove by clear and convincing evidence that Kansal in combination with Samsung, or *vice versa*, discloses all of the limitations of the asserted claims of the ’701 patent.

Hytera alleged that a person of ordinary skill in the art would have been motivated to

⁶⁰ Hytera argued that “the language of Rosen itself” might obviate claims 1 and 11 of the ’701 patent. (RBr. at 61-62.). However, Hytera did not present Rosen as a single reference to support its obviousness argument. To the extent Hytera indicated as much for the first time in their Post-Hearing Brief, Hytera waived that argument under Ground Rule 10.1, including for purposes of appeal. (*See* RBr. at 51; Joint Outline of Issues, at 12-13 (Mar. 13, 2018) (EDIS Doc. ID 638832); RPBr. at 52 (Dec. 15, 2017).).

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combine the Samsung, Rosen and Kansal references because they all involve base station and mobile station communications; and some of them describe idle or sleep states. (RBr. at 62.). However, the underlying purpose of the '701 patent is to prevent lost transmissions as a result of regulatory de-keying, which is a problem specific to TDMA base stations. (JX-0001 at 1:52-2:15; 4:20-34.). Therefore, a person of ordinary skill in the art would not consult CDMA⁶¹ references (like Samsung) or mobile station (not base station) references (like Rosen).

Moreover, while Hytera claimed that Samsung, Rosen and Kansal all are directed to power management, the references are each directed at entirely different power management problems. Samsung is focused on conserving mobile power (RX-0036.3), while Kansal is focused on unnecessarily wasted base station power (RX-0039 at ¶¶ 7-8), and Rosen focuses primarily on PTT (push to talk)⁶² latency (which can be affected by power saving techniques) (RX-0037 ¶¶ at 6, 8.). Moreover, even under Hytera's characterization of the purposes of the three (3) references, Samsung, Rosen and Kansal, Hytera failed to explain why or how a person of ordinary skill would have combined these references together—or whether it is even possible to combine these disparate systems together—to render the '701 patent claims obvious.

PharmaStem Therapeutics, 491 F.3d at 1360.

⁶¹ The repeater in CDMA, or Code Division Multiple Access, mobile communication systems are never “de-keyed.” The repeater always maintains active channels on its forward link (or downlink). (RX-0036.8-9, 12, 14; Tr. (Wicker) at 1258:5-1260:8.).

⁶² A PTT function is a means of instantaneous communication commonly employed in wireless cellular phone services that uses a button to switch a device from reception mode to transmission mode. (RX-0037 at [0029].); Tr. (Wicker) at 323:1-18.). The operation of phones used in this way is similar to “walkie talkie” use.

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For the foregoing reasons, Hytera has failed to prove by clear and convincing evidence that claims 1 and 11 of the '701 patent are rendered obvious by Samsung in view of Rosen or *vice versa*, or by Samsung in view of Kansal or *vice versa*. Because Hytera's evidence is insufficient to demonstrate that claims 1 and 11 of the '701 patent are invalid under 35 U.S.C. § 103, an analysis of the secondary considerations of non-obviousness is unnecessary.⁶³ *See, e.g., Certain Video Game Sys. and Wireless Controllers and Components Thereof*, Inv. No. 337-TA-770, Remand Initial Determination, 2013 WL 2413602, at *13 n.7 (U.S.I.T.C. May 7, 2013) (not addressing the complainant's arguments with respect to secondary considerations of non-obviousness because the asserted patent was not found to be invalid as obvious); *Alza Corp. v. Mylan Labs., Inc.*, 391 F.3d 1365, 1373 n.9 (Fed. Cir. 2004) (same).

X. U.S. PATENT NO. 8,279,991

A. Overview of Infringement⁶⁴ and Motorola's and Hytera's Disputes in Brief

Motorola has alleged that the '991 Accused Products infringe claims 7 and 8 of the '991 patent. (CBr. at 55-60.). As set forth in the claim-by-claim analysis below, Motorola presented evidence that the '991 Accused Products [REDACTED]

[REDACTED]

[REDACTED]. (CBr. at 87.).

⁶³ In addition to a finding of that Hytera failed to show a *prima facie* case of obviousness of the '701 patent, Motorola argued that only Hytera's copying constitutes an indicium of non-obviousness.

⁶⁴ Hytera alleged that the '991 patent is licensed. (RBr. at 84.). Hytera was precluded from introducing evidence on its license defense during the evidentiary hearing. (*See* Order No. 38 at 9 (Jan. 26, 2018).). Hytera filed a proffer on its license defense, which was accepted during the evidentiary hearing on January 30, 2018. (RX-0446C; Tr. at 267:5-23.). Hytera's Proffer is not discussed in this decision because the evidence and the issue were precluded by pre-hearing Order, and Hytera's own waiver.

Hytera’s rebuttal arguments either are incomplete, as applied to the ’991 Accused Products operating only in Pseudo Trunk mode, or Hytera waived them, including for purposes of appeal, under Ground Rule 10.1, because they were untimely. (*See* G.R. 10.1.).

Notwithstanding Hytera’s waiver of its arguments, Motorola has proven by a preponderance of evidence that the ’991 Accused Products infringe claims 7 and 8 of the ’991 patent.

B. Relevant Claim Terms

The following constructions of the claim terms recited in the asserted claims of the ’991 patent have been agreed upon by the Parties or adopted by this Court.⁶⁵

Chart No. 11: Constructions of Claim Terms Relevant to the ’991 Patent⁶⁶

Claim Term	Construction
“the other timeslots” (claim 7)	One or more timeslots other than a desired timeslot. (<i>Markman</i> Order, App’x A at Chart 1.).
“selecting a synchronization pattern selected from the second set of synchronization patterns” (claim 7)	At the time of the <i>Markman</i> Hearing, Hytera argued that this term was indefinite. (<i>Id.</i>). Consequently, I postponed construing the term until the evidentiary hearing. (<i>Id.</i> at 16 n.2.). Hytera has since waived this indefiniteness argument by not raising it in post-hearing briefing. (<i>See</i> RBr. at 63-83; Ground Rule 10.1.).
“knowing” (claim 7)	Plain and ordinary meaning. (<i>Id.</i> at Chart 2.).

⁶⁵ The Parties disputed the meaning of additional claim terms recited in claims that have been terminated from this Investigation. Those terms are not included in Chart No. 11.

⁶⁶ During the *Markman* proceedings, both of these claim terms were in dispute. (*See* Joint CC Chart at 10.).

testified that [REDACTED]

[REDACTED] (Tr. (Zheng) at 907:8-908:2.). [REDACTED]. (CX-1662C; CX-2092C (screenshot of CX-1662C)). (*Id.* at 904:12-906:19 (discussing the email chain), 908:8-909:6 (testifying that [REDACTED] [REDACTED]); CX-1546C ([REDACTED]); CX-1654C; CX-2093C (screenshot of CX-1654C); CX-1651C; Tr. (Yuan) at 858:2-4.).

1. Claim 7 of the '991 Patent

a) “In a time division multiple access (TDMA) system having a plurality of timeslots, a method comprises the steps of”

Motorola adduced evidence in this Investigation that the '991 Accused Products satisfy the preamble of claim 7. In particular, [REDACTED]. (Tr. (Wicker) at 309:25-310:20; CX-1404C.19 ([REDACTED]); CX-1316C.59 ([REDACTED] [REDACTED])).

In its Initial Post-Hearing Brief and Post-Hearing Reply Brief, Hytera did not dispute that the '991 Accused Products meet the preamble of claim 7. (RBr. at 46-63; RRBr. at 27-36.). Thus, any arguments pertaining to this issue are deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 Accused Products meet the preamble of claim 7.

- b) **“knowing a first set of synchronization patterns associated with a desired timeslot and a second set of synchronization patterns associated with each of the other timeslots in the TDMA system, wherein the first set of synchronization patterns is mutually exclusive from the second set of synchronization patterns, and each set comprising at least two different synchronization patterns as a function of at least one of a payload type and a source of the transmission”**

Motorola offered evidence that the '991 Accused Products satisfy this limitation. When the '991 Accused Products [REDACTED]

[REDACTED] (CX-1404C.19.). [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED].

Id. (listing synchronization patterns). [REDACTED]
[REDACTED]. (Tr. (Wicker) at 312:5-313:4; *see also* CX-0749C (Zheng Dep. Tr.) at 77:15-20 ([REDACTED])
[REDACTED]
[REDACTED]).

Hytera's source code and witnesses affirm this understanding. Hytera's [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. (See CPX-0032C at ll. 438-447; Tr. (Wicker) at 314:2-316:9).

Hytera's employee, Ms. Zheng, agreed that [REDACTED]

[REDACTED]. (Tr. (Zheng) at 876:15-25 (discussing RPX-0335C:

[REDACTED]); CX-0749C (Zheng Dep.) at 79:11-23 ([REDACTED]

[REDACTED]).

In rebuttal, Hytera focused on how the '991 Accused Products operate in [REDACTED]
[REDACTED]. In particular, Hytera asserted in conclusory fashion that [REDACTED]
[REDACTED] (Tr. (Akl) at 1107:7-9.). Yet, while this may
or may not prove true, it is not the complete story. The critical information that Hytera failed to
address is that, as Motorola has shown, the '991 Accused Products [REDACTED]

[REDACTED]. (CX-1404C.19; CX-1403C; Tr. (Zheng) at 876:10-14 (admitting that [REDACTED]
[REDACTED]
[REDACTED]); Tr. (Akl) at 1107:7-1109:14 (not disputing the documents and testimony confirming
that [REDACTED]).

Thus, for the reasons discussed above, Motorola has proven by a preponderance of
evidence that the '991 Accused Products meet this limitation of claim 7.

c) “preparing to transmit a particular payload type in a timeslot”

Motorola presented evidence that the '991 Accused Products satisfy this limitation. The
'991 Accused Products [REDACTED]
[REDACTED]. (Tr. (Wicker) at 321:7-16 ([REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. (CX-1402C.18-19 ([REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]).

This is confirmed by Hytera’s source code for the ’991 Accused Products. In particular,

[REDACTED]
[REDACTED]
[REDACTED]. (CPX-0159C at ll. 1813-1842 (SlotStateCtr()); Tr. (Wicker) at 322:3-323:5.).

Moreover, Motorola offered evidence that [REDACTED]

[REDACTED]. As Dr. Wicker explained, [REDACTED]
[REDACTED] (Tr. (Wicker) at 323:6-22; CPX-0236C at ll. 3219-3253 ([REDACTED]
[REDACTED]
[REDACTED]).

Hytera did not contest the “preparing” limitation at the evidentiary hearing (despite doing so in its Pre-Hearing Brief). Instead, Hytera raised new rebuttal arguments for the first time in its Post-Hearing Brief. These new arguments include that limitation 7(b) requires [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]. (RBr. at 65-66.). Pursuant to Ground Rules 1.14 and 10.1,

these arguments are waived.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 Accused Products meet this limitation of claim 7.

d) “determining whether the timeslot is a current desired timeslot for the TDMA system”

Motorola offered evidence that the '991 Accused Products satisfy this limitation. The '991 Accused Products [REDACTED]

[REDACTED]. For example, [REDACTED]
[REDACTED]

[REDACTED]

[REDACTED]. (Tr. (Wicker) at 324:5-23 (discussing [REDACTED]

[REDACTED]); CX-0002C.23, 24 ([REDACTED]

[REDACTED]

[REDACTED]. (*Id.*) [REDACTED]

[REDACTED]

[REDACTED]. (*Id.*) [REDACTED]

[REDACTED]

[REDACTED] (CPX-0152C at ll. 4026-4043 ([REDACTED])); Tr.

(Wicker) at 325:6-326:4.). Hytera employee Ms. Zheng confirmed this: [REDACTED]

[REDACTED] (CX-0749C (Zheng Dep.

Tr.) at 72:8-12.).

Hytera disputed that the Accused '991 Products perform the “determining” step. (RBr. at 66.). Yet, Hytera provided no evidence in its Pre-Hearing Brief in support of this argument.

(RPBr. at 63.). Additionally, Hytera’s expert witness, Dr. Akl, offered a conclusory opinion with respect to this limitation at the evidentiary hearing:

So looking at element 7b and 7d, you require -- first I have two positions, two opinions. One is the claim requires to have a desired timeslot, a current desired timeslot. [REDACTED]. This is, for example, in 7d, “determining whether the timeslot is the current desired timeslot.”

[REDACTED]

(Tr. (Akl) at 1106:19-1107:6.).

Consequently, pursuant to Ground Rule 7.2, Hytera’s rebuttal arguments with respect to this limitation are waived.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the ’991 Accused Products meet this limitation of claim 7.

- e) **“if the timeslot is the current desired timeslot, selecting a synchronization pattern selected from the first set of synchronization patterns based on the one of the particular payload type and a particular source of the transmission; otherwise selecting a synchronization pattern selected from the second set of synchronization patterns based on the one of the particular payload type and the particular source of the transmission”**

Motorola adduced evidence that the ’991 Accused Products satisfy this limitation. For example, the ’991 Accused Products [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (CX-1404C.19; Tr. (Wicker) at 328:7-

13.). [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] (*Id.*).

In its Initial Post-Hearing Brief, Hytera did not offer rebuttal evidence on this claim limitation. Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 Accused Products meet this limitation of claim 7.

f) “transmitting a burst in the timeslot having embedded the synchronization pattern that was selected”

Motorola offered evidence that the '991 Accused Products satisfy this limitation. The '991 Accused Products [REDACTED]
[REDACTED]. (CX-0381C.40-41; Tr. (Wicker) at 330:18-331:24.).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 Accused Products meet this limitation of claim 7 and that the '991 Accused Products infringe claim 7.

2. Claim 8 of the '991 Patent

a) “The method of claim 7 wherein the current desired timeslot at a first time is different than the current desired timeslot at a second time.”

Motorola presented evidence that the '991 Accused Products satisfy this claim. In

addition to the evidence offered above with respect to claim 7, [REDACTED]

[REDACTED]. (CX-0002C.23 ([REDACTED])

[REDACTED] (Tr. (Wicker) at 332:20-333:8). Hytera's source code confirms this. (CPX-0152C at ll. 4026-4043.).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Thus, any argument on this issue is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 Accused Products meet the additional limitation recited in claim 8.

D. Domestic Industry: Technical Prong

1. The '991 DI Products Practice Claims 12 and 16 of the '991 Patent

Motorola has alleged and provided evidence that the following DI Products practice the asserted claims of the '991 patent: MOTOTRBO Mobile Stations (including XPR 7000 Series; XPR 7000e Series; SL 7000e Series; SL 7000 Series; XPR 5000e Series; XPR 5000 Series; XPR 3000e Series; XPR 3000 Series; XPR 2500 Series; SL 300 Series; CP200D; CM Series; XPR 4000 Series; XPR 6000 Series; SL8000 Series; SL500 Series) (collectively, "the '991 DI Products"). (*See, e.g.*, CPBr. at xi.). In its Initial Post-Hearing and Post-Hearing Reply Briefs, Hytera did not dispute that the '991 DI Products practice these claims. (RBr. at 63-83; RRBr. at 36-42.). Thus, any of Hytera's arguments pertaining to the '991 DI Products are deemed waived under Ground Rule 10.1.

Accordingly, Motorola has proven by a preponderance of evidence that the '991 DI

Products practice claims 12 and 16 of the '991 patent, and that the '991 DI Products satisfy the technical prong of the domestic industry requirement.

a) Claim 12 of the '991 Patent

i. “In a time division multiple access (TDMA) system having a plurality of timeslots, a method comprises the steps of”

Motorola provided persuasive evidence that the '991 DI Products satisfy the preamble of claim 12 of the '991 patent. (Tr. (Wicker) at 348:13-349:8 (discussing [REDACTED]); CX-1011C.1898 ([REDACTED]); CX-0969C.3 ([REDACTED])).

Because Hytera did not offer rebuttal evidence in its Initial Post-Hearing Brief, any argument on this issue, including for appellate purposes, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy the preamble of claim 12 of the '991 patent.

ii. “selecting a channel having a desired frequency and a desired timeslot, wherein each timeslot has a set of synchronization patterns associated therewith, each set of synchronization patterns are mutually exclusive of each other, and each set of synchronization patterns comprises at least two different synchronization patterns as a function of at least one of a payload type and a source of the transmission”

Motorola provided persuasive evidence in this Investigation that proved that the '991 DI Products satisfy this limitation of claim 12 of the '991 patent. The '991 DI Products have a desired frequency and a desired timeslot [REDACTED], and two sets of mutually exclusive sync patterns (each with a sync pattern for a particular payload type)

associated with each of the two timeslots. (Tr. (Wicker) at 350:4-351:23 (discussing [REDACTED]
[REDACTED]); CX-
1011C.1901 ([REDACTED]
[REDACTED]), 1907 ([REDACTED]
[REDACTED]).

Because Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 12 of the '991 patent.

iii. "tuning to the desired frequency"

Motorola presented persuasive evidence that its '991 DI Products satisfy this limitation of claim 12 of the '991 patent. The '991 DI Products tune to the desired frequency to transmit. (Tr. (Wicker) at 352:3-15.). Motorola's documents provided confirmation. (CX-1011C.1929 ([REDACTED]
[REDACTED]
[REDACTED])).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 12 of the '991 patent.

iv. “searching for synchronization patterns associated with each of the plurality of timeslots on the desired frequency”

Motorola provided persuasive evidence that the '991 DI Products satisfy this limitation of claim 12 of the '991 patent. Motorola's technical documentation, CX-1011C, explicitly states that [REDACTED] [REDACTED] (CX-1011C.1911; CX-1011C also notes that [REDACTED] [REDACTED]). The '991 DI Products [REDACTED] [REDACTED]. (Tr. (Wicker) at 352:24-354:12 (analyzing CX-1011C.1899, 1904, 1911 and [REDACTED])).

In its Initial Post-Hearing Brief, Hytera did not offer rebuttal evidence on this claim limitation. Therefore, Hytera has waived any argument on this issue, including on appeal, under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 12 of the '991 patent.

v. “if one of the synchronization patterns is detected on the desired frequency, synchronizing to a timeslot that is associated with the synchronization pattern that was detected; and

Motorola provided persuasive evidence that the '991 DI Products satisfy this limitation of claim 12 of the '991 patent. The '991 DI Products practice this element by synchronizing to a timeslot associated with the detected sync pattern. (Tr. (Wicker) at 354:20-355:13; CX-1011C.1904, 1907 ([REDACTED])).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing

Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 12 of the '991 patent.

- vi. “if the desired timeslot does not match the timeslot that is associated with the synchronization pattern that was detected, adjusting timing to decode the desired timeslot”*

Motorola presented persuasive evidence that the '991 DI Products satisfy this limitation of claim 12 of the '991 patent. As Dr. Wicker explained, CX-1011C shows that the '991 DI Products meet this element [REDACTED]. (Tr. (Wicker) at 355:2-356:14 (CX-1011C.1905 showing [REDACTED])).

Because Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, Hytera has waived any argument it may try to make on this issue, including on appeal, under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 12, and thus that the '991 DI Products practice claim 12 of the '991 patent.

b) Claim 16 of the '991 Patent

- i. “In a time division multiple access (TDMA) system having a plurality of timeslots, a method of attempting to initiate a transmission on a desired frequency and a desired timeslot, the method comprising the steps of”*

Motorola presented persuasive evidence that the '991 DI Products satisfy the preamble of claim 16 of the '991 patent. The '991 DI Products operate in a TDMA system with multiple

time slots and [REDACTED]. (Tr. (Wicker) at 357:11-358:1; CX-1011C.1898.).

Because Hytera did not offer rebuttal evidence in its Initial Post-Hearing Brief, Hytera has waived any argument it may have on this issue, including on appeal, under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy the preamble of claim 16 of the '991 patent.

ii. “detecting a carrier presence on the desired frequency”

Motorola provided persuasive evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent. The '991 DI Products detect a carrier presence on the desired frequency. (Tr. (Wicker) at 358:2-12; CX-1011C.1907 ([REDACTED])).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the reasons discussed above, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent.

iii. “searching for synchronization patterns associated with each of the plurality of timeslots on the desired frequency, wherein each of the plurality of timeslots on the desired frequency has a set of synchronization patterns associated therewith, and each set of synchronization patterns are mutually exclusive of each other”

Motorola provided persuasive evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent. The '991 DI Products [REDACTED] [REDACTED]. (Tr. (Wicker) at 358:13-360:3; CX-1011C.1899 ([REDACTED])).

[REDACTED], 1911 ([REDACTED]).
[REDACTED]).

In its Initial Post-Hearing Brief, Hytera did not offer rebuttal evidence on this claim limitation. Therefore, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For these reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent.

- iv. “if one of the synchronization patterns associated with the desired timeslot is detected on the desired frequency, denying the transmission”*

Motorola provided persuasive evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent. In the '991 DI Products, [REDACTED]
[REDACTED]. (CX-1011C.1905 ([REDACTED]
[REDACTED]); Tr. (Wicker) at 360:16-361:2.).

Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief. Therefore, any argument may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent.

- v. “if none of the synchronization patterns associated with any of the plurality of timeslots are detected on the desired frequency, denying the transmission; and”*

Motorola provided persuasive evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent. In the '991 DI Products, [REDACTED]

[REDACTED]. (CX-1011C.1905 ([REDACTED]
[REDACTED]); Tr.

(Wicker) at 361:3-16.).

Because Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For these reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent.

- vi. ***“if none of the synchronization patterns associated with the desired timeslot are detected on the desired frequency, but at least one of the synchronization patterns associated with any of the other timeslots is detected on the desired frequency, synchronizing to a timeslot associated with one of the synchronization patterns that was detected, and adjusting timing in order to transmit the transmission in the desired timeslot using one of the synchronization patterns associated with the desired timeslot”***

Motorola provided persuasive evidence that the '991 DI Products satisfy this limitation of claim 16 of the '991 patent. In the '991 DI Products, [REDACTED]

[REDACTED]. (CX-1011C.1906 ([REDACTED]

[REDACTED]

[REDACTED]), 1907 ([REDACTED]); Tr. (Wicker) at 362:21- 363:4.).

Because Hytera did not offer rebuttal evidence on this claim limitation in its Initial Post-Hearing Brief, any argument Hytera may try to make on this issue, including on appeal, is deemed waived under Ground Rule 10.1.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that the '991 DI Products satisfy this limitation of claim 16, and thus that the '991 DI Products practice claim 16 of the '991 patent.

E. Validity

1. None of the Asserted Claims of the '991 Patent Are Invalid

a) ETSI (RX-0059) Does Not Anticipate Claims 7 and 8 of the '991 Patent

ETSI TS 102 361-1 v1.1.1 (2005-04) ("ETSI") was published at least as early as 2005. (RX-0059.). Hytera alleged that ETSI anticipates claims 7 and 8 of the '991 patent. (RBr. at 70-74.). There is no evidence that ETSI was considered by the PTO during the prosecution of the '991 patent, although ETSI TS 102 361-1, V1.4.5 was considered. (*See* JX-0009.). There is also no dispute that ETSI is prior art to the '991 patent. (CPBr. at 66-68.).

ETSI is a standard that specifies technical requirements for Digital Mobile Radio (DMR) devices. (RX-0059 at 13.). ETSI discloses DMR devices with two mutually exclusive sets of synchronization ("SYNC") patterns, the base station ("BS") sourced set and the mobile station ("MS") sourced set. Each set contains patterns corresponding to payload type (voice or data). (*Id.* at 71-72; Tr. (Bohn) at 170:16-23; Tr. (Akl) at 1114:1-1115:23.). In ETSI, the BS sourced set is associated with a first timeslot, i.e., the outbound or forward timeslot, and the MS sourced set is associated with a second timeslot, i.e., the inbound or backward timeslot. The different SYNC patterns differentiate not only the different payload types but also the different timeslots (channels). (RX-0059 at 18-19, 29, Figure 5.16, 30, Figure 5.17; Tr. (Akl) at 1113:5-24, 1115:24-1116:24, 1117:7-23.). However, mobile stations can select a SYNC pattern only from the "MS sourced" set and base stations can select a SYNC pattern only from the "BS sourced"

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set. (Tr. (Wicker) at 1251:17-1252:3). In other words, ETSI's teachings are limited to a system in which "there's only one set [of sync patterns] for the [MS]" and the MS is not able to use BS sourced patterns for transmission, and vice versa. (Tr. (Bohn) at 170:24-171:23.).

As Dr. Wicker explained:

If you're a mobile station, mobile station sourced, there are only two patterns that you can pick. You can pick this one for voice and this one for data. . . . These patterns up here, these are base station sourced. That means these are two patterns that are available to the base station, but they're not available to the mobile station. The mobile station may only pick from among these two patterns for its transmissions of voice or data. . . . The mobile station can only pick from amongst these two, the base station can only pick from amongst these two. No base station and no mobile station has the opportunity within the standard to select from among all four.

(Tr. (Wicker) at 1250:9-1252:3.).

In other words, ETSI teaches a "fixed" timeslot configuration whereby a mobile station is limited to performing a voice or data transmission sequence of steps on a single timeslot (corresponding to that mobile station), although the mobile station can receive voice or data transmissions from a base station by synchronizing to the other timeslot (corresponding to the base station) and receiving information corresponding to the indicated payload type. In this configuration, there is a one-to-one correspondence between transmitting devices and the timeslots on which they can transmit.

Against this backdrop, the Parties disagreed over how broadly to read claims 7 and 8 of the '991 patent for the purposes of an anticipation analysis with respect to ETSI. In an attempt to read these claims on ETSI's "fixed" timeslot configuration, Hytera argued that claims 7 and 8 do not require a single device with a TDMA system to perform the recited steps, only that the system as a whole performs them. (RBr. at 72 ("claims do not require a mobile station 'select' both the first and second sets of SYNC patterns, only that a TDMA system 'know' both sets,

which the ETSI systems do.”). Motorola disagreed, arguing that the claims are narrower than that insofar as they require the performance of the steps by a single transmitting device.

Motorola is correct. Claim 7 recites “[i]n a time division multiple access (TDMA) system . . . a method,” not “a TDMA system performing a method,” and treats the system as something distinct from whatever is performing the recited method. (JX-0009 at 17:36-37, 49-50 (e.g., “determining whether the timeslot is a current desired timeslot for the TDMA system”). The ’991 patent also discloses TDMA systems composed of subscriber and possibly repeater devices that transmit and receive information. (*Id.* at 4:64-5:5.). Moreover, it is clear that the disclosed invention is performed for the purpose of transmitting and receiving devices synchronizing with a particular timeslot at a given frequency with confidence that they are synchronizing to a “desired” timeslot. (*Id.* at 3:15-17.). The ’991 patent’s specification discloses transmitting and receiving devices performing distinct steps to achieve this synchronization. However, the ’991 patent assigns the performance of steps recited in claim 7 only to transmitting devices and not to receiving devices or the overall system as a whole. (*Id.* at Abstract, 3:21-31, 3:62-4:12.). Thus, the steps of claim 7 are performed only by a transmitting device.

Motorola is also correct that claims 7 and 8 require that transmitting devices have the capability to switch from one timeslot to another for the purpose of transmission. (CRBr. at 34 (“that a [transmitting] *device* must be capable of selecting from both sets [of timeslot synchronization patterns] for transmission”) (emphasis added)). Claim 7 recites: “determining whether the timeslot is a current desired timeslot for the TDMA system.” (JX-0009 at 17:49-50.).

Anticipation of claim 7 by a device that transmits by default in only one timeslot, as is the case in ETSI, would read out the “determining” limitation because the transmission timeslot

assignment would be set from the beginning and there would be no need for a *desired* timeslot. Similarly, in a fixed configuration like the one disclosed in ETSI, the “selecting” step would be limited to selecting only a payload type, not a timeslot, notwithstanding that claim 7 requires the capability to do both. In particular, claim 7 contemplates a transmitting device “if the timeslot is the current desired timeslot, selecting a synchronization pattern . . . from the first set of synchronization patterns [or] *otherwise* selecting a synchronization pattern . . . from the second set of synchronization patterns.” (JX-0009 at 17:51-60 (emphasis added)).

Because it fails to disclose the “determining” and “selecting” limitations, ETSI does not anticipate claims 7 and 8 of the ’991 patent. *Celeritas Techs.*, 150 F.3d at 1361. This finding is consistent not only with the described evidence, above, but also with the decision to strike certain of Dr. Akl’s testimony that was only provided for the first time during the evidentiary hearing: “In this instance, neither Dr. Akl’s Opening Report nor Hytera’s PHBR clearly discuss the limitation that involves *disclosure of a desired timeslot in relation to ETSI.*” (Order No. 47, App’x A at 248-49 (May 18, 2018)).

Therefore, Hytera has failed to show by clear and convincing evidence that ETSI anticipates claims 7 and 8 of the ’991 patent.⁶⁷

⁶⁷ During the evidentiary hearing, Hytera raised several new arguments for why ETSI anticipates claims 7 and 8 of the ’991 patent. For example, Hytera argued that “a timeslot 1, for example, can be assigned to . . . the base stations and timeslot 2 for the mobile stations.” Hytera also argued that a mobile station “must know the ‘BS sourced’ set to synchronize to the base station” to receive communications, and that ETSI discloses the “determining” step because it allegedly discloses “determin[ing] whether the timeslot is a forward/inbound timeslot, which is the desired timeslot.” (CBr. at 64-65; CRBr. at 34-35.). Because Hytera never raised these arguments in its Pre-Hearing Brief, Hytera waived any argument it may have had, including for appeal purposes, under Ground Rule 7.2.

b) ETSI (RX-0059) in View of Zak (RX-0023) Does Not Render Obvious Claims 7 and 8 of the '991 Patent

Hytera alleged that ETSI in view of Zak renders obvious claims 7 and 8 of the '991 patent. (RBr. at 74-75.). U.S. Patent No. 6,452,991 issued on September 17, 2002, to Robert A. Zak ("Zak"), from U.S. Patent Application Serial No. 09/220,405 filed on December 30, 1998. (RX-0023.). There is no evidence that Zak was considered by the PTO during the prosecution of the '991 patent. (*See* JX-0009.). There is also no dispute that Zak is prior art to the '991 patent. (CPBr. at 69-70.).

Zak discloses systems and methods for acquiring channel synchronization in TDMA systems using dual detection thresholds, within a cellular system, with centrally controlled decision making. (RX-0023 at Title; Tr. (Wicker) at 1252:20-1253:10; RBr. at 81.).

Specifically, Zak teaches verifying a time slot synchronization pattern known as a "syncword" using a two-step approach in order to "reduce the time required to obtain synchronization" and "increase the accuracy of the synchronization process." (RX-0023 at 4:1-5:1.). The approach entails determining whether the "correlation energy exceeds the relatively low detection threshold," in which case "one or more additional correlations are performed . . . using a higher sampling rate and a more stringent detection threshold." (*Id.* at 4:9-12.). "In this manner it is possible to significantly reduce the total number of correlations that are used as most of the correlations may be performed using relatively few samples per symbol." (*Id.* at 4:12-15.). Zak also discloses having only one sync pattern per timeslot. (*Id.* at 6:18-28 ("a unique syncword is typically provided for each separate time slot"); Tr. (Akl) at 1124:9-15.).

Hytera failed to provide evidence that ETSI in view of Zak render obvious claims 7 and 8 of the '991 patent. In striking some of Dr. Akl's testimony, which he provided for the first time

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during the evidentiary hearing, an Order issued explaining that “Hytera’s PHBR stated in conclusory fashion that ETSI and Zak could be combined (with other prior art) but does not explain why or how, or which elements of each of these references would be combined.” (Order No. 47, App’x A at 213 (May 18, 2018).). Order No. 47 also noted that: “[b]oth Dr. Akl’s report, to which Hytera cites, as well as Hytera’s PHBR lump together ETSI and Zak with other prior art” and that “neither Dr. Akl’s expert report nor Hytera’s PHBR disaggregate Zak and ETSI from the other prior art to explain which elements of each are combined (or should be combined by a POSA) or why.” (*Id.* at 234.).

After the evidentiary hearing, Hytera was left with little more than unsupported attorney argument in place of evidence.⁶⁸

For example, Hytera argued that ETSI shows the teaching of a set of two sync patterns for each timeslot and Zak shows that different sync patterns can be associated with different timeslots to differentiate them. (RBr. at 76; RRBr. at 39-40 (citing Zak, RX-0023 at 6:18-28).). Hytera also asserted in cursory fashion without explanation or detailed citation that a person of ordinary skill at the time of the alleged invention would have found it obvious to combine the teachings of ETSI with those of Zak, because “both references relate to the use of timeslot synchronization in a TDMA system.” (RBr. at 81; *see also* Order No. 47, App’x A at 214 (“Specifically, Hytera’s PHBR stated in conclusory fashion that ETSI and Zak could be combined (with other prior art) but does not explain why or how, or which elements of each of

⁶⁸ The decision to strike some of Dr. Akl’s testimony was designed to penalize Hytera for failing to abide by Ground Rules. Order No. 47 was designed as well to remind the Parties that Pre-Hearing Briefs *must* cite to evidence and case law that supports offered arguments. To a large extent, Hytera defeated itself by casting its defenses so broadly, and so thinly that it did justice to few of its defenses.

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these references would be combined.”), 223 (“Hytera’s PHBR does not specifically explain or discuss which language and/or features of Zak in combination with ETSI disclose element [7e].”). For Hytera to prevail on obviousness, more evidence and analysis was required to support its contentions. *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (“We agree with the district court that [the defendant] provides no explanation or reasoning for concluding that one of skill in the art would have combined these particular references to produce the claimed invention.”); *Intendis GMBH v. Glenmark Pharms. Inc., USA*, 822 F.3d 1355, 1366 (Fed. Cir. 2016) (noting a “cursory statement was insufficient to meet [defendant’s] burden of showing by clear and convincing evidence a motivation to combine [a prior art reference] with other prior art to render the claims obvious”).

In response to Hytera’s arguments, Motorola offered persuasive evidence that ETSI in view of Zak does not render obvious claims 7 and 8 of the ’991 patent. Specifically, Dr. Wicker testified that these references do not teach the claimed sync patterns either alone or in combination. (Tr. (Wicker) at 1252:4-1253:10.).

With respect to the lack of motivation to combine the two (2) references, Dr. Wicker testified that these references are actually incompatible with each other because Zak is a cellular system, with centrally controlled decision making, while ETSI is a two-way radio reference. (*Id.* at 1252:20-1253:10.).

This high-level observation rings true technically. As discussed above, ETSI teaches multiple synchronization patterns per timeslot. (Tr. (Wicker) at 1251:17-1252:3). Zak teaches a two-step approach for verifying a given time slot synchronization pattern, in the context of one pattern per timeslot. (RX-0023 at 4:1-5:1.). Moreover, ETSI discloses a fixed configuration in which each timeslot has a defined role such that timeslots are not co-equal, whereas Zak teaches

a “terminal” dynamically tuning or synchronizing to one of a plurality of co-equal timeslots “predefined” for communication. (Tr. (Bohn) at 170:24-171:23; RX-0023 at 6:36-40 (“Once the user terminal identifies the location of a syncword it is possible for the terminal to thereby synchronize its timing with the timing of the transmitting base station thereby allowing the terminal to communicate in one of the predefined time slots.”)). In other words, ETSI and Zak teach incompatible systems each of which was directed at distinct and not overlapping problems. *PharmaStem Therapeutics*, 491 F.3d at 1360.

For the foregoing reasons, Hytera has failed to prove by clear and convincing evidence that ETSI in view of Zak renders obvious claims 7 and 8 of the ’991 patent.

c) Yamaguchi (RX-0017) in View of ETSI (RX-0059) Does Not Render Obvious Claims 7 and 8 of the ’991 Patent

Hytera alleged that ETSI in view of Yamaguchi renders obvious claims 7 and 8 of the ’991 patent. (RBr. at 74-75.). U.S. Patent No. 5,761,211 issued on June 2, 1998, to Norio Yamaguchi, Haruhiro Shiino, and Ryoichi Miyamoto (“Yamaguchi”). (RX-0017.). There is no dispute that Yamaguchi is prior art to the ’991 patent. (CPBr. at 69-70.). Unlike the other references to the ’991 patent, Yamaguchi was considered by the PTO during the prosecution of the ’991 patent. (*See* JX-0009.). According to Hytera, during prosecution of the application that became the ’991 patent, the PTO found Yamaguchi disclosed all the elements of claims 7 and 8 except “each set comprising at least two different synchronization patterns as a function of at least one of a payload type and a source of the transmission.” (JX-0010.0335-40; Tr. (Akl) at 1147:6-1150:9.).

Yamaguchi discloses a method of efficiently synchronizing to a desired timeslot in a time division multiple access communication system. (RX-0017, Title.). Specifically, Yamaguchi

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teaches “a timing recovery circuit has a sampling means that samples an input signal to generate a sample stream and a correlating means that correlates a reference pattern with the sample stream at different timings, thus generating a plurality of correlation values.” (*Id.* at 1:32-36.). “The estimated timing can be used in a receiving apparatus for various types of synchronization[.]” (*Id.* at 1:45-46.). “[A]n object of the present invention is to improve the precision of timing recovery without requiring a higher sampling rate.” (*Id.* at 1:30-31.).

Hytera provided cursory evidence that ETSI in view of Yamaguchi renders obvious claims 7 and 8 of the '991 patent, even assuming that Yamaguchi discloses each of the claim elements except the one identified above.⁶⁹ According to Hytera, a person of ordinary skill in the art would have found it obvious to have combined the teachings of Yamaguchi with those of ETSI because both references teach synchronizing a timeslot in a TDMA system and using synchronization patterns to identify a payload. (RBr. at 82; Tr. (Akl) at 1150:18-25.). In terms of a motivation to combine, Hytera argued that a person of ordinary skill in the art “would have recognized using synchronization to carry information to identify a timeslot and also a payload type to reduce the number of signaling bits in the burst structure and improve transmission efficiency.” (*Id.*). Yet, in the testimony Hytera cites for support of this attorney argument, Dr. Akl never testified to those purported advantages. (Tr. (Akl) at 1151:1-23 (“Substituting a different set of synchronization patterns for voice and data control for each of the synchronization patterns of Yamaguchi as ETSI suggests.”)). Attorney argument is not enough.

⁶⁹ Although it is not determinative for the purpose of this analysis, Order No. 47 struck Dr. Akl’s testimony with respect to Yamaguchi satisfying limitation [7c] of the '991 patent (“preparing to transmit a particular payload type in a timeslot”). (Order No. 47, App’x A at 370 (May 18, 2018)). That testimony is: “So this is the preparing to transmit limitation. The Yamaguchi at column 2, lines 10 to 15 disclose ‘the signal is organized into frames of six timeslots each.’ And again, this was -- the examiner rejected that limitation over Yamaguchi.” (*Id.*; Tr. (Akl) at 1148:14-19.).

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For Hytera to prevail on obviousness, more evidence on motivation to combine is required. *Intendis*, 822 F.3d at 1366 (noting a “cursory statement was insufficient to meet [defendant’s] burden of showing by clear and convincing evidence a motivation to combine [a prior art reference] with other prior art to render the claims obvious”). While Dr. Akl found each limitation of claims 7 and 8 of the ’991 patent present in either ETSI or Yamaguchi, there is no evidence of motivation for a person of ordinary skill in the art to combine these particular references other than their existence in the same field. Even the two purported benefits of combining the references (reduce the number of signaling bits and improve transmission efficiency), provided by Hytera as attorney argument, flow not from combining the references themselves, but from combining general concepts disclosed by the references.

In response to Hytera’s arguments, Motorola provided compelling evidence that ETSI in view of Yamaguchi does not render obvious claims 7 and 8 of the ’991 patent. Like Zak discussed above, Yamaguchi teaches having only one synchronization pattern per timeslot. It fails to teach *a set of synchronization* patterns associated with each timeslot. (RX-17 2:10-20 (“six time slots” and “six different synchronization patterns” with one sync pattern per slot); Tr. (Wicker) at 1253:11-1254:5.) (emphasis added). Although ETSI teaches multiple synchronization patterns per timeslot, according to Dr. Wicker, the particular way in which Yamaguchi implements one synchronization per timeslot makes ETSI and Yamaguchi incompatible. (Tr. (Wicker) at 1253:11-1254:5.). This is because Yamaguchi uses synchronization correlators that match the peak of a correlation across a single timeslot. This approach cannot be used or combined with a system, such as ETSI, that partitions timeslots into payload types and differentiates among these types using multiple synchronization patterns per timeslot. (*Id.* (“The system that’s described here [in Yamaguchi] can’t look for two patterns.

It's looking for one.”). In other words, ETSI and Yamaguchi teach incompatible systems solving distinct problems. *PharmaStem Therapeutics*, 491 F.3d at 1360.

For the foregoing reasons, Hytera has failed to prove by clear and convincing evidence that ETSI in view of Yamaguchi renders obvious claims 7 and 8 of the '991 patent.

d) ETSI (RX-0059) in View of Zak (RX-0023) and Zhang (RX-0031) Renders Does Not Render Obvious Claims 12 and 16 of the '991 Patent⁷⁰

Hytera alleged that ETSI in view of Zak and Zhang renders obvious claims 12 and 16 of the '991 patent. (RBr. at 74-75.). ETSI and Zak were introduced and discussed above in Sections X.E1(a) and (b). U.S. Patent No. 7,330,524 issued on February 12, 2008, to Ning Zhang, Athanasios A. Kasapi, and William J. McFarland (“Zhang”), from U.S. Patent Application Serial No. 11/027,280 filed on December 20, 2004. (RX-0031.). There is no evidence that Zhang was considered by the PTO during the prosecution of the '991 patent. (*See* JX-0005.). There is also no dispute that Zhang is prior art to the '991 patent. (CPBr. at 69-70.).

Zhang teaches performing “synchronization and impairment estimations” to save valuable time decoding a received packet in a in a TDMA system. (RX-0031 at Abstract.). Specifically, Zhang discloses that by using initial synchronization and frequency offset choices, timing offset choices can be bounded within constrained ranges. (*Id.* at 1:52-53.). “Using a known data pattern included in the packet and a known receiver spur frequency, an algorithm can then advantageously find a minimum of an error measure that can give the best frequency offset choice and timing offset choice combination over their respective constrained ranges, together

⁷⁰ Motorola asserted claims 12 and 16 of the '991 patent for purposes of technical DI only. (CBr. at 61-64.).

with the estimates of the signal magnitude and phase, the DC offset magnitude and phase, and the spur magnitude and phase.” (*Id.* at 1:54-62.).

Hytera has not satisfied its burden of proving that ETSI in view of Zak and Zhang renders obvious claims 12 and 16 of the '991 patent.

To the extent that Hytera attempted to argue invalidity based on this three-reference combination, Hytera waived its argument, including for appeal purposes, under Ground Rule 10.1. During the evidentiary hearing, Dr. Akl did not testify about this three-reference combination. Instead, Dr. Akl testified only about combinations of “ETSI and Zak” and “ETSI and Zhang” separately. (Tr. (Akl) at 1114:13-24 (ETSI and Zak); 1145:8-13 (same); 1145:16-19 (ETSI and Zhang), 1145:20-25 (same).). The ETSI and Zak combination was addressed above in Section X.E.1(b). Moreover, Hytera provided no other testimony or evidence of the three-reference combination of ETSI, Zak and Zhang through any other witness.

To the extent that Hytera argued that claims 12 and 16 of the '991 patent are obvious based on ETSI in view of Zhang, Hytera's argument failed for lack of proof.

After the evidentiary hearing, Order No. 47 struck several passages of Dr. Akl's testimony that pertained to opinions and argument that Hytera raised for the first time during the evidentiary hearing that described the purported invalidation of claims 12 and 16 as obvious in view of the prior art, including ETSI and Zhang. (Order. No. 47 at 245 (limitation 12[a] in ETSI), 259-60 (limitation 12[c] in ETSI), 269 (limitation 12[d] in ETSI), 272 (limitation 12[d] in ETSI), 275 (limitation 12[e] in ETSI), 284 (limitation 12[f] in ETSI), 289 (limitation 16[b] in ETSI), 293 (limitation 16[c] in ETSI), 300-01 (limitation 16[c] in ETSI), 301 (limitation 16[d] in ETSI), 302 (limitation 16[e] in ETSI), 310-11 (limitation 16[f] in ETSI and Zhang), 342 (limitation 12[f] in Zhang), 356 (limitation 16[f] in Zhang).). Hytera's arguments were not mere

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explication or explanation of previous contentions or arguments. It appeared to be a late attempt to salvage Hytera's previous use of string cites in its Pre-Hearing Brief. Without evidence that ETSI and Zhang disclose all the limitations of claims 12 and 16 of the '991 patent, Hytera was unable to prove that ETSI and Zhang in combination render these claims obvious.

Even if Hytera had provided proof that each element of claims 12 and 16 of the '991 patent were found in ETSI or Zhang, Hytera's argument would fail because Hytera did not provide evidence with respect to motivation to combine the three references, let alone any two (2) of the three (3) references. *PharmaStem Therapeutics*, 491 F.3d at 1360.

According to Hytera's late explanation, ETSI and Zhang both relate to synchronization to a timeslot in a TDMA system. (RBr. at 83 (citing Tr. (Akl) at 1135:1-5.). Hytera made a cursory argument that a person of ordinary skill in the art would have been motivated to combine the teachings of ETSI with the teachings of Zhang "to build a DMR system with improved synchronization efficiency." (Tr. (Akl) at 1135:6-12.). Hytera offered no other explanation or explain why, with evidence. Moreover, given the lack of an explanation, it is unclear whether the combined "DMR system" of the ETSI and Zhang references would have necessarily satisfied the limitations of claims 12 and 16. As was the case above in combination of ETSI with Zak and Yamaguchi, the law requires that Hytera needed to provide more evidence. *Intendis*, 822 F.3d at 1366.

In a rare exception in this Investigation, Hytera was not alone in providing an argument that was too late in the proceedings, or simply unsupported. In its Post-Hearing Brief, Motorola presented arguments, also for the first time, in which it contested the alleged invalidity of '991 patent claims 12 and 16. (CBr. at 67-68 (arguing the cited references do not disclose the "searching" requirement).).

Because those arguments were not made in Motorola's Pre-Hearing Brief, Motorola waived its arguments, including on appeal, under Ground Rules 7.2 and 10.1. However, because of Hytera's deficient evidentiary proof on the alleged obviousness of claims 12 and 16 based on ETSI in view of Zak and Zhang, Motorola's failure to present rebuttal evidence has no consequence for Motorola.

For the foregoing reasons, Hytera has failed to prove by clear and convincing evidence that ETSI in view of Zak and Zhang renders obvious claims 12 and 16 of the '991 patent. Because the evidence is insufficient to demonstrate that the '991 patent is invalid under 35 U.S.C. § 103, an analysis of the secondary considerations of non-obviousness is unnecessary.⁷¹ *See, e.g., Video Game Sys.*, 2013 WL 2413602, at *13 n.7; *Alza*, 391 F.3d at 1373 n.9.

XI. INDIRECT INFRINGEMENT

A. Legal Standard: Indirect Infringement

1. Induced Infringement

“Whoever actively induces infringement of a patent shall be liable as an infringer.” 35 U.S.C. § 271(b). A patentee asserting a claim of inducement must show (i) that there has been direct infringement⁷² and (ii) that the alleged infringer “knowingly induced infringement and possessed specific intent to encourage another's infringement.” *Minnesota Mining & Mfg. Co. v. Chemque, Inc.*, 303 F.3d 1294, 1304-05 (Fed. Cir. 2002). With respect to the direct infringement requirement, the patentee “must either point to specific instances of direct infringement or show

⁷¹ In addition to the finding of this decision that Hytera failed to show a *prima facie* case of obviousness of the '991 patent, Motorola argued that only copying by Hytera constitutes an indicium of non-obviousness.

⁷² *See also Limelight Networks, Inc. v. Akamai Technologies, Inc.*, 134 S. Ct. 2111, 2117 (2014).

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that the accused device necessarily infringes the patent in suit.” *ACCO Brands, Inc. v. ABA Locks Mfrs. Co., Ltd.*, 501 F.3d 1307, 1313 (Fed. Cir. 2007) (citation omitted). This requirement may be shown by circumstantial evidence. *Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1326 (Fed. Cir. 2009). “[A] finding of infringement can rest on as little as one instance of the claimed method being performed during the pertinent time period.” *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1317 (Fed. Cir. 2009).

The specific intent requirement for inducement necessitates a showing that the alleged infringer was aware of the patent, induced direct infringement, and that he knew that his actions would induce actual direct infringement. *Commil USA, LLC v. Cisco Systems, Inc.*, 720 F.3d 1361, 1367 (Fed. Cir. 2013), *aff’d and vacated in part on other grounds*, 135 S. Ct. 1920, 1926-28 (2015); *Global-Tech Appliances, Inc. v. SEB S.A.*, 131 S. Ct. 2060, 2068-70 (2011). Specific intent can be shown by, for example: (1) changes in importation practices effectuated to shift infringement liability; (2) the infringer’s copying of patented technology; and (3) the infringer’s willful blindness of the underlying direct infringement. *Certain Network Devices, Related Software and Components Thereof (I)*, Inv. No. 337-TA-944, Initial Determination at 82; *see also Commil*, 135 S. Ct. at 1924-25 (“It was not only knowledge of the existence of [the asserted] patent that led the Court to affirm the liability finding but also it was the fact that [the accused infringer] copied ‘all but the cosmetic features of the [patented product],’ demonstrating [the accused infringer] know it would be causing customers to infringe [the asserted] patent.”) (quoting *Global-Tech*, 131 S. Ct. at 2071).).

Willful blindness, which also constitutes “knowledge,” has two basic requirements: “(1) the defendant must subjectively believe that there is a high probability that a fact exists”; and “(2) the defendant must take deliberate actions to avoid learning of that fact.” *Global-Tech*, 131

S. Ct. at 2070. The intent to induce infringement may be proven with circumstantial or direct evidence and may be inferred from all the circumstances. *Commil*, 720 F.3d at 1366; *Global-Tech*, 131 S. Ct. 2071-72.

The Federal Circuit has upheld the Commission's authority to cover "goods that were used by an importer to directly infringe post-importation as a result of the seller's inducement." *Suprema Inc. v. Int'l Trade Comm'n*, 796 F.3d 1338, 1352-53 (Fed. Cir. 2015).

2. Contributory Infringement

35 U.S.C. § 271(c) sets forth the rules for contributory infringement:

Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination, or composition, or a material or apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

35 U.S.C. § 271(c). Specifically with respect to Section 337 investigations, the Federal Circuit has held that "to prevail on contributory infringement in a Section 337 case, the complainant must show inter alia: (1) there is an act of direct infringement in violation of Section 337; (2) the accused device has no substantial non-infringing uses; and (3) the accused infringer imported, sold for importation, or sold after importation within the United States, the accused components that contributed to another's direct infringement." *Spansion, Inc. v. Int'l Trade Comm'n*, 629 F.3d 1331, 1353 (Fed. Cir. 2010). "[N]on-infringing uses are substantial when they are not unusual, far-fetched, illusory, impractical, occasional, aberrant, or experimental." *Vita-Mix*, 581 F.3d at 1327. To determine whether a use is substantial, an Administrative Law Judge may evaluate "the use's frequency, . . . the use's practicality, the invention's intended purpose, and the intended market." *i4i Ltd. Partnership v. Microsoft Corp.*, 598 F.3d 831, 851 (Fed. Cir.

2010). Section 271(c) also requires knowledge of the existence of the patent that is infringed. *Global-Tech*, 131 S. Ct. at 2068.

To satisfy contributory infringement's knowledge requirement, it is necessary to establish that "the accused contributory infringer knows that its component is included in a combination that is patented and infringing." This requires knowledge of the patent. *Global-Tech Appliances*, 131 S. Ct. at 2068. In addition, the Federal Circuit has held that it is not sufficient to know of the patent and the relevant acts, but must also know that "these acts constituted infringement." *Fujitsu Ltd. v. LG Elecs.*, 620 F.3d 1321, 1320 (Fed. Cir. 2010). For purposes of contributory infringement, knowledge is inferred when the article at issue has no substantial non-infringing uses. *See Certain Semiconductor Chips with Minimized Chip Package Size and Prods. Containing Same*, Inv. No. 337-TA-605, Comm'n Op., 2009 WL 8144934, at *28 (June 3, 2009).

Where infringement allegations address a "separate and distinct" feature of a product, the contributory infringement analysis (for example, with respect to the existence of non-infringing uses) may address the particular feature in question rather than the product as a whole. *See i4i Partnership v. Microsoft Corp.*, 598 F.3d 831, 849 (Fed. Cir. 2010); *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1320-21 (Fed. Cir. 2009); *Ricoh Co. Ltd. v. Quanta Comput. Inc.*, 550 F.3d 1325, 1338 (Fed. Cir. 2008).

B. Hytera Had Specific Intent to Infringe the Asserted Patents

1. The Former Motorola Employees Hytera Hired Assisted Hytera in Copying Motorola's Patented Technologies

Motorola presented persuasive circumstantial and direct evidence that certain former Motorola engineers whom Hytera hired away from Motorola wrongfully copied certain of

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Motorola's patented technologies. A timeline of the various acts in which the former Motorola engineers, Messrs. Gee Siong Kok ("G.S. Kok"),⁷³ Yih Tzye Kok ("Y.T. Kok"),⁷⁴ and Samuel Chia⁷⁵ (collectively, the "Hytera Employees") engaged, both before they left Motorola and after they started working at Hytera, is compelling and telling. The evidence includes, first, the proximity in timing between when the Hytera Employees left Motorola and then started working at Hytera on the very DMR projects that infringed Motorola technology. Second, Messrs. Y.T. Kok, G.S. Kok, and Chia all knew one another, while Mr. G.S. Kok actively recruited either directly or indirectly, the other two, as well as other Motorola engineers, to work at Hytera. (CX-0616C.2; CX-0746C (Chia Dep. Tr.) at 36:19-21, 37:22-38:2, 38:25-39:4, 39:15-21, 40:15-22.). Third, documentary evidence includes Motorola computer access logs which recorded the dates, types of documents and the volume of documents that Messrs. Y.T. Kok, G.S. Kok and Chia viewed and apparently downloaded from Motorola systems just before they left Motorola to

⁷³ Mr. G.S. Kok tendered his resignation at Motorola on December 31, 2007. His last day at Motorola was February 11, 2008. (CX-0743C (G.S. Kok Dep. Tr.) at 53:13-20, 54:2-5, CX-616C.2.). He started working for Hytera approximately two (2) months after he left Motorola. (CX-0743C (G.S. Kok Dep. Tr.) at 55:9-12.). For additional information about Mr. G.S. Kok, *see* n.15, *supra*.

⁷⁴ Mr. Y.T. Kok testified during his deposition on September 24, 2017 that his sales position for Hytera focused on DMR products. (*See* (Y.T. Kok. Dep. Tr.) at 30:18-23.). Prior to working in sales for Hytera, from approximately 2008 to 2012, Mr. Kok worked as a software manager for Hytera. (*Id.* at 26:3-11.). Before joining Hytera, Mr. Kok worked at Motorola from 1997 to 2000 as a software engineer. (*Id.* at 13:4-8, 18:15-19.). He rejoined Motorola in 2002 as a senior software engineer, left again in 2005, and rejoined Motorola for a third time in 2007 as a software manager. He left Motorola again to work for Hytera in 2008. (*Id.* at 13:23-14:7, 15:4-10, 22:7-10, 24:12-15.).

⁷⁵ Mr. Chia tendered his resignation at Motorola on May 8, 2008. (CX-0746C at 104:5-105:4.). He left Motorola on June 7, 2008 and joined Hytera later that month. (*Id.* at 15:24-16:4, 49:20-25, 106:19-23.). Mr. Y.T. Kok tendered his resignation at Motorola on September 4, 2008; his last day at Motorola was October 3, 2008. (CX-0619C.5; CX-0751C (Y.T. Kok Dep. Tr.) at 184:3-5.).

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work at Hytera. None of the Hytera Employees had a reason, or were working on projects that required them to access or use the documents they apparently downloaded, just before they left Motorola. Finally, and perhaps the most problematic for Hytera, the evidence includes the extent to which each of these Hytera Employees plead the Fifth Amendment⁷⁶ and declined to answer questions during their depositions in this Investigation. The questions the Hytera Employees were asked clearly were designed to document whether they copied and took with them to Hytera any of Motorola's proprietary and patented Motorola technology. Even if on appeal there is disagreement about the strength of the direct evidence, there can be little doubt that there is sufficient circumstantial evidence in combination with direct evidence to permit an inference that the former Motorola engineers wrongfully copied and took with them to Hytera patented Motorola technologies.

As an initial matter, Mr. G.S. Kok, Mr. Y.T. Kok and Mr. Chia each worked at Motorola during development of the '284, '991, and '869 patents. (CX-0615C; CX-0011; CX-0618C.). Hytera did not dispute this. (*Id.*).

After leaving Motorola in February 2008 and joining Hytera later in 2008, Mr. G.S. Kok actively recruited and hired several Motorola DMR engineers, including Messrs. Y.T. Kok and Chia. (CX-0616C.2; CX-0746C (Chia Dep. Tr.) at 36:19-21, 37:22-38:2, 38:25-39:4, 39:15-21, 40:15-22 (Y.T. Kok and Chia worked on DMR products while they were employed by

⁷⁶ The text of the Fifth Amendment to the United States Constitution is: "No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases in the land or naval forces, or in the militia, when in actual service in time of War or public danger; nor shall any person be subject for the same offence to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation."

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Motorola); CX-0699.1C.4 (Y.T. Kok, G.S. Kok, and Chia worked on DMR products while they were initially employed at Hytera); CX-0751C (Y.T. Kok Dep. Tr.) at 86:13-22, 87:3-15, 87:22-88:11, 89:16-90:2, 90:9-91:12, 93:5-8 (Mr. Y.T. Kok explained that he was recruited to Hytera “definitely before 2008” by Mr. G.S. Kok through Mr. Chia, who was also recruited by Mr. G.S. Kok, and that all three discussed together the terms of their employment for Hytera.). Mr. Chia explained that Mr. G.S. Kok first “raised the idea” of joining Hytera in “very early” in 2008, while both were still Motorola employees. (See CX-0746C (Chia Dep. Tr.) at 51:20-52:13, 53:2-10).⁷⁷

⁷⁷ Order No. 20 unequivocally ordered Hytera to search the emails of Messrs. G.S. Kok, Y.T. Kok, and Chia, and to produce any emails captured by the search terms “Motorola,” “Moto,” “Motortrbo,” and “any other *reasonable* search terms, limited to five (5)” relevant to Motorola’s claim that certain Hytera employees had copied certain of Motorola’s patented technology. (See Order No. 20 at 7 (Oct. 27, 2017).). The timeframe for the search was limited to three (3) years after each of the three (3) Hytera Employees and former Motorola engineers, Mr. Y.T. Kok, Mr. G.S. Kok, and Mr. Chia, left their employment for Motorola for employment with Hytera. (*Id.*). Among the emails produced pursuant to Order No. 20, Motorola’s counsel identified an email and an attachment (CX-2090C (email from Mr. Chia to Mr. Y.T. Kok with regard to an [REDACTED]) allegedly related to the ’991 patent that Motorola did not have an opportunity to show Dr. Wicker before the evidentiary hearing because of Hytera’s failure to search for and provide Motorola with all the documents Hytera was ordered to produce. (*Id.* at 417:7-14.). During the evidentiary hearing, Motorola was permitted to bring Dr. Wicker back at the end of its case-in-chief for his knowledge of and testimony on this document. (*Id.* at 417:7-20.).

During the evidentiary hearing, Motorola’s counsel also alleged that Hytera withheld “a number of documents, that hit on the search terms” identified in Order No. 20, which Hytera’s counsel contested. (Tr. at 269:15-271:5, 277:21-279:8.). Hytera was again instructed to comply with Order No. 20 and to produce all documents captured by the relevant search parameters. (*Id.* at 412:9-417:6.). According to Motorola, that evening, Hytera produced “about 3500 pages, several hundred documents,” a third of which appeared to be corrupted. (*Id.* at 547:16-549:5.). Hytera agreed to produce, on a rolling basis, uncorrupted versions of documents identified by Motorola. (*Id.* at 552:17-20.). None of these appeared to have been addressed during the evidentiary hearing either because it was too late in the proceeding or too many documents were corrupted. There is no question that Hytera violated Order No. 20.

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Motorola's computer "access logs,"⁷⁸ confirm that in the months before the Hytera Employees each left Motorola, they each logged on to Motorola's internal "COMPASS" document management system and in combination *accessed thousands* of confidential Motorola documents.

Mr. Shepard, a Motorola employee responsible for Motorola's information technology infrastructure and information security,⁷⁹ testified that the Motorola access logs record an individual's access to documents over the course of his career at Motorola. (RX-0447C (Shepard Dep. Tr.) at 75:6-16 (explaining the "DATAID" column), 76:18-25 (explaining the "COUNT" column)). One way of thinking about a document access log is as a "footprint" of the substance and timing of an employee's work. (See RX-0447C (Shepard Dep. Tr.) at 72:2-73:8 (Motorola information technology officer, Scott Shepherd, explained how a COMPASS log was created), 96:17-97:1; see also RX-0447C (Shepard Dep. Tr.) at 75:6-16 (explaining the "DATAID" column), 76:18-25 (explaining the "COUNT" column). Mr. Shepard testified that in combination, Mr. Y.T. Kok, Mr. G.S. Kok and Mr. Chia, had accessed a combination of *more than 7,000* confidential Motorola documents before the last of the three men left Motorola. ("So

⁷⁸ Motorola's IT expert, Mr. Shepard, explained that every accessed file was recorded in these individuals' access logs, including the date the file was accessed, the file name, and how many times the individual accessed that file over the course of his career at Motorola. (RX-0447C (Shepard Dep. Tr.) at 75:6-16 (explaining the "DATAID" column), 76:18-25 (explaining the "COUNT" column)).

⁷⁹ At the time of his deposition on October 6, 2017, Mr. Scott Shepard was a Motorola employee responsible for Motorola's information technology infrastructure and information security. (RX-0447C (Shepard Dep. Tr.) at 9:2-11.). Mr. Shepard provided testimony about the access logs showing Mr. Chia's and Mr. Y.T. Kok's access to Motorola's confidential information. (See *id.* at 87:24-88:18 (testifying about Mr. Chia's access logs), 94:8-21, 95:8-15 (testifying about Mr. Y.T. Kok's access logs). Although he did not testify during the evidentiary hearing, the Parties agreed to admit his deposition testimony into the record as designations, including his testimony explaining and authenticating the access logs. (CBr. at 72 n.15.).

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these access reports show that [the Hytera Employees] downloaded over 7,000 documents. Correction. That's accessed the 7,000 documents."); CX-0024C (Chia access log); CX-0684C (Y.T. Kok access log).

That figure bears repeating simply to let sink in the sheer magnitude of the number of confidential Motorola documents that the Hytera Employees accessed, just before they left Motorola: *more than 7,000 documents*. This could not have been coincidental.

For example, Mr. Chia left Motorola on June 7, 2008 to work for Hytera. Mr. Chia's access log reflects that in some 4.5 years, i.e., from August 2003 to February 2008, Mr. Chia accessed *fewer than 300* Motorola documents. (CX-0024C.0291-97.). By contrast, from March 2008 to end of May 2008, that is within three (3) months before he left Motorola to join Hytera, Mr. Chia's access log reflects that he accessed *more than 10,000* Motorola documents. (*Id.* at 0001-291.). At the time he accessed more than 10,000 Motorola documents from Motorola's COMPASS document management system onto his personal computer, Mr. Chia was no longer working on DMR-related projects. (Chia Dep. Tr.) at 16:25-17:6 ("Q: So six or eight months before you left Motorola, you were transferred to a different that focused on wi-fi mesh products? A: Yes."), 17:12-16 ("Q: Okay. And -- okay. From the time you joined Motorola up until about six or eight months before you left Motorola, you were working on two-way radio products? A: Yes, that's right.").

It is inferentially sound that Mr. Chia did not access the DMR documents as part of his ordinary work responsibilities. (*See, e.g.* CX-0024C; *see, e.g., id.* at [REDACTED]

[REDACTED]
[REDACTED]; CX-0746C

The timing and number of Motorola documents that Mr. Y.T. Kok accessed, as reflected in his access log, is equally compelling and warrants an inference of copying. Specifically, on June 23, 2008, Mr. Chia, who by that time was a Hytera employee, forwarded an email to Mr. Y.T. Kok, who was still employed at Motorola, to an *Hytera* email address assigned to Mr. Y.T. Kok based on his Chinese name (“guoyijie04708@sz.hyt”). (CX-1415C.4; CX-0751C (Y.T. Kok Dep. Tr.) at 206:3-6; CX-2090C; *see also* Tr. (Ye (Andrew) Yuan)⁸⁰ at 831:24-832:7, 892:8-10 (confirming that Guoyijie is Mr. Y.T. Kok’s Chinese name); Tr. (Zheng) at 892:8-10 (confirming the same after being asked twice).).

Motorola presented un rebutted, strong evidence that, unbeknownst to Motorola, at the time he received the referenced June 23, 2008 e-mail, Mr. Y.T. Kok was either employed by *both* Motorola and Hytera, but certainly already had an e-mail address at Hytera which was receiving e-mails. (CX-0619C; CX-0751C (Y.T. Kok Dep. Tr.) at 15:21-16:13; CX-0684C.). It is unclear whether Hytera management knew that Mr. Y.T. Kok was still working at Motorola when he began working at Hytera. There is no evidence that Mr. Y.T. Kok advised his Motorola employer that he already was receiving e-mails at Hytera while he was still working at Motorola.

One of the ways in which Motorola discovered that Mr. Y.T. Kok was engaged in some

⁸⁰ When he testified during the evidentiary hearing on February 1, 2018, Mr. Ye (Andrew) Yuan was employed by Hytera Communications Corporation and held the position of President of Hytera Communications America (West), Inc. (Tr. (Yuan) at 831:24-832:7.). Motorola identified Mr. Yuan as a fact witness to provide general testimony about Hytera, including the corporate structure, organization, and background of Hytera and the Accused Products. (RPSt. at 1.).

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fashion simultaneously for Hytera and Motorola, is through the June 23, 2008 e-mail that Mr. Chia sent to Mr. Y.T.Kok at his *Hytera* e-mail address, but using his Chinese name guoyijie04708@sz.hyt. The confirmation came through one of Hytera's engineers, Ms. Zheng,⁸¹ who had worked with Samuel Chia for several years in the same work group. During the evidentiary hearing, Ms. Zheng was asked if she recognized Mr. Chia's name and e-mail address on the "warmly welcome" e-mail he was sent when he began working at Hytera. (See Tr. (Zheng) 896:18-897:19; see also CX-1415C ("warmly welcome e-mail"); CX-2094C (organizational chart). Ms. Zheng initially denied that she even recognized Mr. Chia's e-mail. (Tr. (Zheng) 896:18-897:19.). Her testimony was questionable.

However, Ms. Zheng was also asked if she could identify Mr. Y.K.'s Chinese name from an e-mail that was shown to her, and that verified that Mr. Y.T. Kok was receiving e-mail at Hytera while he was still working at Motorola. There was no question, despite the Chinese interpretation, that Ms. Zheng understood the import of the questions Motorola's counsel was asking and why. After much hesitation, and after being asked twice, she finally confirmed that she was aware of Mr. Y.T. Kok's English *and* Chinese names, and that the "sz.hyt" at the end of his Chinese name on the June 23, 2008 e-mail represented Mr. Y.T. Kok's Chinese name. (See Tr. (Zheng) at 892:8-10 (confirming the same after being asked twice).). Ms. Zheng's testimony helped confirm that Mr. Y.T. Kok was working simultaneously for Motorola and Hytera (or minimally had a Hytera e-mail and divided loyalties) at least part of the time when he accessed

⁸¹ During the timeframe from 2008-2010, Mr. Zhang Ying Zhe worked on Hytera's DMR software team. (Tr. (Yuan) at 887:1-8; see also CX-2094C (showing "Zhangyingzhe" as part of the "Stack/DSP" portion of Hytera's DMR software team).

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confidential Motorola documents in June 2008.

The June 23, 2008 e-mail that was sent originally to Mr. Chia from a lead Hytera engineer had additional significance. In it, Mr. Zhang Ying Zhe included questions to Mr. Chia with regard, *inter alia*, to the operation of certain Motorola's products related to the Asserted Patents.

[Question 8:] Would you please tell us the working process of [REDACTED]? Whether repeater need to analysis [sic] the content of physical layer frame or just repeat the frame transparently when receive it [sic]?

[Question 9:] How can [REDACTED] realize single frequency repeater at present? [O]r can't realize it at all?

(CX-1415C.4-5.).

On the *same day*, that is June 23, 2008, that Mr. Chia forwarded Hytera's Mr. Zhe's e-mail to Mr. Y.T. Kok asking for details about Motorola's DMR products, Mr. Kok accessed from Motorola's internal COMPASS database *more than 50* confidential Motorola documents, after having had accessed *no* documents in nearly four (4) weeks leading up to the June 23, 2008 date of Mr. Chia's email. The timing of Mr. Kok's download of additional confidential Motorola documents is suspect. Mr. Chia forwarded Mr. Zhe's e-mail to Mr. Y.T. Kok *at 12:14 a.m. the morning of June 23, 2008*. Mr. Y.T. Kok's access log reflects that he began accessing confidential Motorola documents at *7:17 a.m. the morning of June 23, 2008*, or barely seven (7) hours after he received Mr. Zhe's e-mail asking for details about Motorola's DMR products.

(CX-1415C; CX-0684C.0006.).

Figure No. 15 graphically reflects Mr. Y.T. Kok's Motorola access log entries for June 23, 2008 with the identification of the documents that he accessed. Mr. Y.T. Kok then accessed another *190* Motorola documents during the week following the June 23, 2008 e-mail. (*Id.* at

0001-6.). The other access logs that reflect the Motorola documents that Mr. G.S. Kok and Mr. Chia accessed would be similar.

Figure No. 15: Mr. Y.T. Kok Access Log Entries on June 23, 2008

	6/23/2008 7:52	1
	6/23/2008 7:52	2
	6/23/2008 7:51	2
	6/23/2008 7:51	3
	6/23/2008 7:44	1
	6/23/2008 7:44	4
	6/23/2008 7:44	3
	6/23/2008 7:44	2
	6/23/2008 7:44	1
	6/23/2008 7:40	1
	6/23/2008 7:39	1
	6/23/2008 7:39	2
	6/23/2008 7:36	4
	6/23/2008 7:36	3
	6/23/2008 7:35	1
	6/23/2008 7:35	1
	6/23/2008 7:34	2
	6/23/2008 7:34	1
	6/23/2008 7:34	2
	6/23/2008 7:34	1
	6/23/2008 7:33	1
	6/23/2008 7:33	2
	6/23/2008 7:32	1
	6/23/2008 7:32	1
	6/23/2008 7:32	1
	6/23/2008 7:32	1
	6/23/2008 7:31	1
	6/23/2008 7:31	1
	6/23/2008 7:30	14
	6/23/2008 7:30	3
	6/23/2008 7:29	1
	6/23/2008 7:29	1
	6/23/2008 7:28	1
	6/23/2008 7:27	1
	6/23/2008 7:27	2

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	6/23/2008 7:25	3
	6/23/2008 7:25	2
	6/23/2008 7:25	1
	6/23/2008 7:24	2
	6/23/2008 7:24	1
	6/23/2008 7:22	1
	6/23/2008 7:22	1
	6/23/2008 7:22	4
	6/23/2008 7:19	1
	6/23/2008 7:18	1
	6/23/2008 7:17	1
	6/23/2008 7:17	3
	6/23/2008 7:17	1
	6/23/2008 7:17	1
	6/23/2008 7:17	1
	5/27/2008 6:01	1
	5/16/2008 3:08	1
	5/16/2008 3:08	1
	5/16/2008 3:07	5
	5/16/2008 3:07	1

(CX-0684C.0005-6.).

Hytera did not contest the veracity of Motorola’s access logs or the fact that the Hytera Employees accessed the documents listed in them on the specific dates and times. Instead, Hytera argued that “[Motorola] has no proof the employees copied or printed the documents or gave them to Hytera” and that Motorola was “relying on innuendo rather than facts.”⁸² (RRBr. at 5-6 (citing RX-0447C (Shepard Dep. Tr.) at 69:10-70:20, 72:2-25, 84:12-85:8, 88:1-10, 94:11-21, 109:8-14); *id.* at 6 n.2.).

With respect to Mr. Y.T. Kok’s access log, Hytera contended that Motorola “assume[d] Y.T. Kok ‘collected’ documents in response to receiving those questions, but offer[ed] no proof or even trie[d] to explain the relationship of any documents allegedly collected to the questions asked,” and that Motorola “chose instead only to use innuendo.” (RRBr. at 6 (internal citation

⁸² See Tr. at 677:10-681:7.

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omitted).). However, Hytera had no explanation why he accessed thousands of confidential Motorola documents just before he left Motorola when he was not working on DMR projects tied to the accessed Motorola documents.

While Hytera may be correct that there is no direct evidence that the three (3) Hytera employees copied the *more than 7,000 documents they accessed*, it is logical to infer that the Hytera Employees accessed these documents with the intent of acquiring information about Motorola's DMR products for Hytera. The timing and circumstances of their actions are unequivocal and uncontested. *Why* Messrs. Y.T. Kok, G.S. Kok and Chia accessed so many confidential Motorola documents just before they left Motorola, and *what they did* with the documents may not be known, but the inference that can be drawn is clear.

Messrs. Y.T. Kok, G.S. Kok, and Chia each were questioned extensively during their depositions about whether certain aspects of the Accused Products were developed using Motorola's confidential information. Messrs. Y.T. Kok, G.S. Kok and Chia each refused to answer any questions that in varying ways asked about their downloading, copying and transferring confidential Motorola documents to Hytera. In each case, the Hytera Employees refused to answer questions and instead invoked their Fifth Amendment right not to incriminate themselves. Mr. Y.T. Kok invoked his Fifth Amendment right *to more than 70 questions*. Mr. Chia also invoked his Fifth Amendment right *to more than 70 questions*. Mr. G.S. Kok invoked his Fifth Amendment right against self-incrimination *to more than 60 questions*. (*See generally* CX-0746C (Chia Dep Tr.); CX-0751 (Y.T. Kok Dep. Tr.); CX-0743 (G.S. Kok Dep. Tr.); *see also* (Y.T. Kok Dep. Tr.) at 299:8–19, 299:20–300:3, 302:8–13, 300:19–25, 301:2–8; (CX-0746C (Chia Dep. Tr.) at 187:9-16; *see also id.* at 155:3-156:20; CX-0743C (G.S. Kok Dep Tr.) at 74:24-84:24.).

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Moreover, when Mr. Y.T. Kok, Mr. G.S. Kok and Mr. Chia were each asked during their respective depositions whether any of the accused features in the Hytera Accused Products were developed using Motorola confidential information, they each invoked their Fifth Amendment right against self-incrimination and refused to answer. (CX-0751C (Y.T. Kok Dep. Tr.) at 299:20-300:3; CX-0746C (Chia Dep. Tr.) at 155:13-19 ('284 and '991 patents); CX-0751C (Y.T. Kok Dep. Tr.) at 302:8-13 ('701 patent); CX-0751C (Y.T. Kok Dep. Tr.) at 299:8-19, 300:19-25 ('701 patent); CX-0751C (Y.T. Kok Dep. Tr.) at 301:2-8.). Their refusals to answer questions involved the '284, the '991 and the '701 patents.

The content of the questioning of Mr. Y.T. Kok, Mr. G.S. Kok and Mr. Chia during their depositions, and their answers, were a variation on the questions and answers quoted below:

Q: . . . Was any aspect of the scan feature in Hytera's DMR products developed using Motorola's confidential information?

[Hytera's counsel:] Fifth Amendment.

Q: Are you going to refuse to answer my question?

A: Yes.

* * *

Q: Was any aspect of the Pseudo Trunking feature in Hytera's DMR products developed using Motorola's confidential information?

[Hytera's counsel:] Fifth Amendment.

* * *

Q: Was any aspect of [REDACTED] in its DMR products developed using Motorola's confidential information?

[Hytera's counsel:] Fifth Amendment.

Q: Are you going to refuse to answer my question?

A: Yes.

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* * *

Q: Was any aspect of the Subscriber Inactivity Timer in Hytera's DMR products developed using Motorola?

[Hytera's counsel:] Fifth Amendment.

Q: Are you going to refuse to answer my question?

A: Yes.

(CX-0751C (Y.T. Kok Dep. Tr.) at 299:8–19, 299:20–300:3, 300:19–25, 301:2–8, 302:8–13.).

Q: Okay. Isn't it correct that you learned about pseudo-trunking technology from confidential communications with Motorola engineers and then took that technology to Hytera and used it in Hytera's products?

[Hytera's counsel:] We will be exercising our 5th Amendment protection.

Q: Are you going to follow your counsel's instruction?

A: Yes, I am.

Q: Okay. You copied pseudo-trunking from Motorola; correct?

[Hytera's counsel:] We'll be exercising our 5th Amendment protection.

Q: Are you going to follow your counsel's instruction?

A: Yes, I am.

(CX-0746C (Chia Dep. Tr.) at 155:13-19.).

Mr. Chia and Mr. G.S. Kok similarly invoked their Fifth Amendment right to avoid self-incrimination and refused to answer when each was asked whether he had downloaded confidential Motorola documents before leaving Motorola to work for Hytera.

Q: . . . Isn't correct that in the months leading up to your departure from Motorola, you downloaded documents having Motorola confidential information to take with you to Hytera?

[Hytera's counsel:] Fifth Amendment.

Q: You going to follow that instruction?

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A: Yes.

(CX-0746C (Chia Dep. Tr.) at 187:9-16; *see also id.* at 155:3-156:20.).

Q: When you left Motorola in 2007, were there any documents regarding Motorola's products that you took with you?

[Hytera's counsel:] The witness is going to avail himself of his Fifth Amendment protections, and I will instruct him not to answer.

Q: And are you going to follow your counsel's advice to exercise the Fifth Amendment?

A: Yes.

Q: . . . In preparing to leave Motorola in 2007, did you collect nip documents regarding Motorola's products, including its two-way radio products, to take with you?

[Hytera's counsel:] Two objections. One, compound question, but the second is we will avail ourselves of our Fifth Amendment protections.

Q: And will you follow your counsel's advice?

A: You bet.

Q: Yes?

A: Yes.

(CX-0743C (G.S. Kok Dep Tr.) at 74:24-84:24.).

Motorola contended that Messrs. Y.T. Kok's, G.S. Kok's and Chia's refusals to answer questions during their depositions gives rise to an adverse inference that Hytera copied the accused features from Motorola's confidential information. (CBr. at 79-80.).

Hytera argued that Messrs. G.S. Kok, Y.T. Kok, and Chia invoked their Fifth Amendment right against self-incrimination to avoid waiving their rights in a parallel, trade

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secret case Motorola brought against Hytera in Federal District Court.⁸³ (RRBr. at 8.). According to Hytera, “Motorola did not sue Messrs. Kok, Kok, and Chia, but accused them of crimes in the trade secret case, so those individuals were represented by separate counsel, not under Hytera’s control, who took positions contrary to Hytera’s interests or the wishes of Hytera’s counsel.” (*Id.* (citing CX-0743C at 3; CX-0746C at 2; CX-0751C at 2).). Hytera asserted that for this reason, no adverse inference about the import or significance of the Hytera Employee’s refusal to answer questions about possible theft of Motorola confidential information should be drawn. (*Id.*).

Although Hytera’s stated explanation may have been one of a number of reasons or the only reason why the Hytera Employees invoked their Fifth Amendment right against self-incrimination, the totality of Motorola’s damaging evidence gives rise to an inference that Messrs. G.S. Kok, Y.T. Kok and Chia did indeed copy some or all of the documents they accessed from Motorola’s COMPASS document management system. *See, e.g., Baxter v. Palmigiano*, 425 U.S. 308, 318 (1976) (concluding that “the Fifth Amendment does not forbid inferences against parties to civil actions when they refuse to testify in response to ***probative evidence offered against them***”) (emphasis added);⁸⁴ *Greviskes v. Universities Research Ass’n, Inc.*, 417 F.3d 752, 758 (7th Cir. 2005).

Because of the unwillingness of the Hytera Employees to deny under oath that they

⁸³ The Federal District Court litigation is *Motorola Solutions, Inc. v. Hytera Commc’ns Corp. et al.*, Case No. 1:17-cv-1972 (N.D. Ill. Mar. 14, 2017). (*See* Joint Proposed Procedural Schedule and Identification of Other Proceedings (Doc. ID No. 612791) at 4 (May 25, 2017).).

⁸⁴ The Supreme Court distinguished the facts in *Baxter*, where the respondent “remained silent at the hearing in the face of evidence that incriminated him” from cases where there is no such evidence. *Baxter*, 425 U.S. at 318 (noting that “silence in and of itself is insufficient to support an adverse decision”).

copied and gave Hytera confidential Motorola information, and Hytera's apparent complicity in these acts, an adverse inference is drawn here that Hytera intentionally copied Motorola's patented technologies into the Accused Products. *See LiButti v. United States*, 107 F.3d 110, 123-24 (2d Cir. 1997) ("Whether these or other circumstances unique to a particular case are considered by the trial court, the overarching concern is fundamentally whether the adverse inference is trustworthy under all of the circumstances and will advance the search for the truth.").

Moreover, as other sections of this decision find, Motorola presented persuasive evidence that certain accused features of Hytera's Accused Products were developed from and/or encompass aspects of Motorola's technologies described in the '284, '869, and '701 patents.

For example, in Hytera's "Software Requirements Specification for XPT," Hytera expressly relied on a Motorola technical document as Hytera's *single* "Reference & Standard" for implementing the '284 accused XTP functionality. (CX-0315C.41; Tr. (Wicker) at 294:12-295:4, 297:12-302:1 (testifying about the same)).⁸⁵ This was one of the documents Motorola relied upon to show infringement of the '284 patent. (*See* Section VII.D.4, *supra*). As explained in Section VII.D.4 above, based, *inter alia*, on this document and other evidence, it is a finding of this ID that the '284 Accused Products infringe the '284 patent.

⁸⁵ Hytera's counsel objected to Dr. Wicker's testimony with respect to one of the Motorola technical documents that was accused of copying Motorola confidential information. Hytera was concerned that Mr. Wicker lacked the ability to testify to the foundation and authenticity of the document. The objection was overruled. (Tr. at 295:5-301:4 ("JUDGE MCNAMARA: . . . Now it's up to me to decide as a factfinder whether he has made all the linkages. He mentioned that he reviewed the document, it came to Motorola through Hytera production. Ms. Zheng testified about the document. He reviewed the document. He has the expertise to explain how he knows what the legend or the Web -- the Web source is. Now it's up to me as factfinder to decide if he made the links and if his testimony is credible and matches up.")).

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With respect to the '869 patent, Hytera relied on a [REDACTED] research document” as reflected in its “Software Requirement Specification” for the scan feature claimed in the '869 patent. (CX-1408C.46; Tr. (Rangan) at 655:7-657:9 (“Q: How does DMR scan function relate to the '869 patent? A: The '869 patent precisely is about scan in a DMR system or two-way radio system more generally.”); *see also* Section VIII.C.1, *supra*, regarding discussion of this document for infringement purposes.).

Additionally, as Mr. Bohn, one of the '701 patent inventors testified, Hytera copied almost verbatim material from a presentation that Mr. Bohn made about the '869 patent's features into one or more of Hytera's technical presentations. (CX-0022C; Tr. (Bohn) at 128:8-23.). The relevant portion of the Motorola presentation is contained in CX-0022C.17, from which Hytera copied verbatim nearly every bullet under the figure. (*Compare* CX-0022C.17 *with* CX-0020.35.). The one bullet point that Hytera did not copy verbatim was changed to emphasize that Mr. Bohn's improvement of using a “Short LC burst” can lead to a “scan time improvement,” which is a component of the '869 patent. (*See* Tr. (Bohn) at 129:22-130:7; Tr. (Rangan) at 650:14-653:10; *compare also, e.g.*, CX-0022C.14 *with* CX-0020.33 (showing copying).). Mr. Chia, the author of the copied presentation, pled the Fifth when asked questions about whether he copied this presentation and whether he copied Motorola's scan improvements into the '869 accused features. (CX-0746C (Chia Dep. Tr.) at 178:11-180:17.).

With respect to the '701 patent, on August 9, 2004, Messrs. Chia and Y.T. Kok received an email from Tom Senese, a co-inventor of the '701 patent, summarizing the invention. (CX-0003C.1, 3-4; Tr. (Wicker) at 423:11-426:11 (explaining, sentence-by-sentence, the relevance of the email to the '701 patent).). When Mr. Chia arrived at Hytera, Mr. Zhe's question to Mr. Chia about the “working process of the MOTO repeater” is relevant to rapid repeater re-keying since

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Hytera's repeaters use that feature. (See CX-1415C; CX-1416C (question 8)). Hytera also copied the [REDACTED] from Motorola. (CDX-0005C-250; Tr. (Wicker) at 440:7-441:25 (explaining that Hytera's [REDACTED] repeaters to toggle between timeslots). When Mr. Y.T. Kok was asked whether Hytera's [REDACTED] was developed using Motorola information, he pled the Fifth and refused to answer. (CX-0751C (Y.T. Kok Dep. Tr.) at 302:8-13.).

In contrast to the patent-specific evidence Motorola presented supporting its assertion that Hytera copied certain accused features described in the '284, '869, and '701 patents, Motorola relied on evidence and testimony that fails to support its claim that Hytera copied the accused features claimed in the '991 patent. (CBr. at 79.). Pointing to Hytera's technical specification entitled the "Software Requirement Specification for the [REDACTED]," Motorola asserted that Hytera "specifically admit[ed]" that it was "written based on the research and analysis on the [REDACTED]." (CX-1404C.18.). However, the document never mentions Motorola or makes any indication that Motorola is the "competitor." Motorola simply relied on a *guess* made by Hytera's corporate representative on this topic, Ms. Zheng, that the "competitor" *may* have been Motorola. (CX-0749C (Zheng Dep. Tr.) at 80:14-17 ("Q: Do you know what 'competitor's' refers to here? A: . . . What I can guess is the competitor here may be Motorola. That's my own guess."); *see also* Tr. (Wicker) at 341:13-24 (discussing Zheng's testimony).).

Motorola also relied on a document entitled [REDACTED] containing Mr. Chia's

⁸⁶ GPIO is an acronym for general input/output pin. (See CX-0750C (Zheng Dep. Tr.) at 228:25-229:7.).

analysis of Hytera's [REDACTED]. (CX-2091C.). Contrary to Motorola's assertions, Mr. Chia did not suggest using "a lot of Moto[rola] code." (CBr. at 75 (citing CX-2091C.6-7)). He instead explained that the use of Motorola's code was "a concern." (CX-2091C.0006.). As Hytera noted, Mr. Chia's recommendation was to use a cheaper [REDACTED] or "realize a lot of the critical measurable algorithm in the [REDACTED] on our own." (RRBr. at 7 (citing CX-2091C.0007)). He indicated there was a "[n]eed to change performance of the reuse algorithms," not to "reuse algorithms" created by Motorola, as Motorola contended (CBr. at 76).

The persuasiveness of the circumstantial evidence, the findings of infringement of the Asserted Patents discussed in Sections VII.D, VIII.C, IX.B, and X.C, and the Hytera Employees' invocation of their Fifth Amendment right to avoid self-incrimination in combination support a finding that Hytera copied Motorola's patented technologies described in the '284, '869, and '701 patents.

2. Hytera Was Willfully Blind to Motorola's Patent Portfolio

Motorola argued that Hytera knew of the '284 and '991 patents by at least February 26, 2013. (CBr. at 80-81.). Motorola also asserted that Hytera had pre-suit knowledge of the '869 and '701 patents. (*Id.* at 81.). While the specific assertions may not be supported by direct evidence, Motorola nonetheless presented indirect evidence that Hytera was willfully blind to Motorola's patent portfolio for the reasons discussed below.

With respect to the '284 and '991 patents, Motorola relied on a set of search results from the European Patent Office, dated February 26, 2013, that Hytera produced during discovery in this Investigation. (CX-1413.). Although Motorola's expert, Dr. Wicker, provided testimony confirming that, for example, the application that eventually issued as the '991 patent, was included in the search results (Tr. (Wicker) at 336:5-337:7), Motorola failed to establish the

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source of the document (i.e., where it came from) or provide any evidence showing that Hytera became aware of these search results *on February 26, 2013*. (Tr. at 338:17-340:9, 340:21-341:8 (JUDGE MCNAMARA: . . . There may have been a search. We don't know who conducted that search. The document itself only says that it was -- when it was done, and there's no question on the face of the document it deals with patent -- or the document number that became the U.S. '991 patent. That's all [Dr. Wicker] knows. He then read the document, he knows the contents of the document. But Mr. Yoches has a point. He doesn't know the source, who conducted the search. So that part is out[.]); *see also* CX-0750C at 231:16-232:14 (“Q: . . . [D]o you know who at Hytera performed this search? A: I don't know. By ‘I don't know,’ I mean I don't know whether there is such a search or who performed such a search.”).).

With respect to the '869 patent, Motorola based its assertion on an *undated* presentation about *unidentified* Motorola patents that it alleged is “relevant” to the '869 patent. (*See* CBr. at 81 (citing CX-0711.1C).⁸⁷). As Hytera noted, the presentation never mentions the '869 patent. (RRBr. at 42.). Motorola's own expert, Dr. Rangan, testified that the presentation concerns aspects of dPMR that is only related to the '869 patent in the sense that it is “*broadly* in the same area of two-way radios.” (Tr. (Rangan) at 654:13-655:6 (emphasis added).). However, at the time, Motorola was the dominant company in the two-way radio market.

With respect to the '701 patent, Motorola pointed to the production of a copy of the '701 patent and its PCT application from Hytera's “files in this Investigation” as evidence that Hytera had pre-suit knowledge of the '701 patent. (CBr. at 81 (citing CX-1910; CX-0506; Tr. (Wicker) at 421:12-21).). Motorola was unable to provide evidence that proved *when* Hytera obtained the

⁸⁷ CX-0711C has been withdrawn.

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document in question and, when Hytera, therefore, had knowledge of the '701 patent.

While record evidence may not establish conclusively from the aforementioned documents that Hytera had pre-suit knowledge of the Asserted Patents, Motorola presented sufficient evidence, including that which was based upon Messrs. Y.T. Kok's, G.S. Kok's and Chia's downloading of confidential Motorola documents in 2008, that involved many of the features of several of the Asserted Patents, that Hytera was willfully blind to the Asserted Patents and its infringement of them. *Global-Tech*, 131 S. Ct. at 2068-71 (holding that willful blindness may be sufficient to meet specific intent requirement if the defendant "subjectively believe[s] that there is a high probability that a fact exists" and "take[s] deliberate actions to avoid learning of that fact," and that intent may be inferred from all circumstances).

Moreover, Motorola was able to provide other evidence that Hytera knew of Motorola's patent portfolio and that Hytera's copying of Motorola proprietary information could lead to infringement. For example, Hytera employees, including Mr. Chia, monitored the filing and issuance of Motorola patents related to Motorola's new two-way radio technology, and were aware of Motorola's patents and its patent portfolio. (*See, e.g.*, CX-0020.30 (Chia presentation at Hytera noting, with regard to synchronization patterns, that "[t]his is one of the essential [p]atents by Motorola.")).⁸⁸ Additionally, Hytera prepared internal presentations, one of which was entitled "[REDACTED] Patent Analysis," which documented that Hytera conducted searches and analyzed Motorola patents, and summarized what it characterized as "[f]eatures," "[a]dvantage," and "[r]eferential points." (CX-0804C (Liang Dep) at 197:8-22 (Mr. Liang

⁸⁸ When asked about this statement during his deposition, Mr. Chia invoked his Fifth Amendment right and refused to provide an answer. (CX-0746C (Chia Dep. Tr.) at 173:16-174:8).

characterizing these as “[t]hings to be learned’ . . . or ‘borrowed’”). Hytera’s Director of Products, Mr. Liang, and Manager of Hytera’s Project Management Department, Ms. Zheng, both testified that they were aware of Motorola’s patent portfolio. (CX-0750C (Zheng Dep. Tr. (Oct. 10, 2017)) at 234:10-18, 236:3-13; CX-0804C (Liang Dep. Tr. (Oct. 13, 2017)) at 187:3-188:12.).

Despite knowing about Motorola’s patents, and while Hytera unquestionably copied certain of Motorola’s patented technologies, Hytera acknowledged that it did not take any steps to avoid infringing Motorola’s patents. (CX-0750C (Zheng Dep. Tr.) at 232:18-233:23 (claiming she never searched for Motorola patents, or knows anyone who has), 237:23-238:6 (claiming she never read third-party patents); CX-0804C (Liang Dep. Tr.) at 187:3-188:12; *see also* CX-0751C (Y.T. Kok Dep. Tr.) at 45:12-46:3 (refusing to answer questions about steps taken to avoid infringing Motorola patents for fear of self-incrimination); CX-0746C (Chia Dep. Tr.) at 246:21-247:20 (same).).

For the foregoing reasons, the record evidence demonstrates, and it is a finding of this decision, that Hytera intentionally chose not to take steps to avoid knowledge of Motorola’s patented technologies despite a finding that Hytera did, indeed, know about Motorola’s patented technologies.

C. Motorola Has Proven Other Elements of Induced and Contributory Infringement

1. ’284 Patent

a) Hytera and Its Customers/Dealers Directly Infringe the ’284 Patent

Hytera and its customers directly infringe the ’284 patent by operating or selling the ’284 Accused Products in the United States with XPT and Pseudo Trunk in Repeater Mode and Direct

Mode enabled. Mr. Guan, Hytera American's VP of Engineering, confirmed that it operates [REDACTED] in the U.S. (CX-0745C (Guan Dep. Tr.) at 185:6-20, 312:4-16.).

Hytera's dealers confirmed that they sold, used, and tested [REDACTED]. (See, e.g., CX-0740C (Marcus Dep. Tr.) at 14:12-17, 16:18-21, 130:25-131:13, 210:14-25; CX-0747C (Guller Dep. Tr.) at 102:14-103:2, 247:13-21, 248:9-250:3; CX-0742C (Vayner Dep. Tr.) at 16:8-18:20.). "Load files" produced by Hytera's U.S. dealers also show that [REDACTED] [REDACTED] are enabled. For example, the load files in CX-1720C and CX-1729C show that [REDACTED] and [REDACTED], respectively, are enabled. (Tr. (Wicker) at 256:15-258:7.). Similarly, CX-0735 shows [REDACTED] is enabled. (*Id.* at 258:8-14.).

For these reasons, Motorola has proven by a preponderance of evidence that Hytera and its customers directly infringe the '284 patent.

b) Hytera Induced Infringement and Contributed to the Infringement of the '284 Patent

Record evidence establishes that Hytera actively encourages, advertises, directs, intends, and teaches third parties to infringe the claims of the '284 patent. As Dr. Wicker explained, multiple training materials from Hytera explain how to configure XPT and Pseudo Trunking in an infringing manner. (Tr. (Wicker) at 244:6-247:4, 247:23-250:4; CX-1309 (Hytera YouTube video explaining XPT setup);⁸⁹ CX-0067C.11, 22 (Hytera documentation explaining [REDACTED] setup); CX-1322C.43, 52 (overview of Hytera's [REDACTED] training course); CX-1295.19, 222-23, 387 (CPS help file detailing XPT configuration); CX-1269.10 (Hytera documentation explaining Pseudo

⁸⁹ CX-1309 was posted by "Hytera" on March 16, 2015. (See <https://www.youtube.com/watch?v=C2144v2KccE> (last accessed Feb. 13, 2018)).

Trunking setup). Hytera's witnesses confirmed that Hytera teaches customers to use the accused features. (CX-0745C (Guan Dep.) at 54:7-13, 55:7-56:6, 289:9-19, 315:15-24.).

Additionally, Motorola provided a sufficient quantum of evidence that the software that implements [REDACTED] is a material part of the '284 patent because it embodies all of the limitations of the asserted claims as discussed in Section VII.D above. (Tr. (Wicker) at 250:5-251:8.). Moreover, Hytera specially makes and designs the infringing components of the '284 Accused Products (the processor, radio communication circuitry, power supply, and housing) for assembly into Hytera devices. Additionally, Hytera loads its devices accused of infringing the '284 patent with software that infringes the '284 patent. This applies particularly to Hytera devices in the Pseudo Trunking, in Repeater Mode, Direct Mode, and/or XPT Mode. (*Id.*). Those components have no substantial non-infringing uses: they are designed to be used in a radio running XPT or Pseudo Trunk software that would necessarily meet the asserted claims of the '284 patent. (*Id.*).

For the foregoing reasons, Motorola has proven by a preponderance of evidence that Hytera induced the infringement and contributed to the infringement of the '284 patent.

2. '869 Patent

a) Hytera and Its Customers/Dealers Directly Infringe the '869 Patent

Hytera and its customers directly infringe the '869 patent by operating or selling the '869 Accused Products in the United States with the scan feature enabled. (CX-0741C (Carlos

Cordova⁹⁰ Dep. Tr.) at 83:7-11 (confirming that scan is enabled on products); CX-0742C (Vayner Dep. Tr.) at 49:3-14 (confirming that the scan feature is sold by a Hytera U.S. dealer). “Load files” produced by Hytera’s U.S. dealers that are used to program the ’869 Accused Products also show that scan is enabled for customers. (See, e.g., CX-0742 (Vayner Dep. Tr.) at 223:12-224:7 (discussing CX-0735)). Moreover, Mr. Guan, Hytera’s VP of Engineering of Hytera America, described scan as a “widely used feature” in the United States. (CX-0745C (Guan Dep. Tr.) at 227:10-228:13; see also Tr. (Rangan) at 684:21-686:21.).

For these reasons, Motorola has proven by a preponderance of evidence that Hytera and its customers directly infringe the ’869 patent.

b) Hytera Induced Infringement and Contributed to the Infringement of the ’869 Patent

Record evidence provided in this Investigation demonstrates that Hytera actively encourages, advertises, directs, intends, and teaches third parties to infringe the claims of the ’869 patent, including by describing how to configure the scan feature in an infringing manner. (Tr. (Rangan) at 657:10-658:20, 682:10-683:20; CX-1379C.11 ([REDACTED]); CX-1295.129, 223 (information manual explaining how to program scan)). Hytera’s witnesses confirmed that Hytera teaches customers to use the accused features. (CX-0745C (Guan Dep. Tr.) at 55:7-56:17, 296:5-18, 298:13-24, 352:18-22.).

Motorola also presented persuasive evidence that the software that implements [REDACTED] is a material part of the ’869 patent because it embodies all the limitations of

⁹⁰ At the time of his deposition on September 28, 2017, Mr. Carlos E. Cordova was the VP of Operations for Hytera America. (CX-0741C (Cordova Dep. Tr.) at 7:11-15; Tr. (Rangan) at 684:21-685:2.). Mr. Cordova collected “import records, clearance, customs” and “[e]ntry summaries” from Hytera America’s customs broker. (*Id.* at 11:6-22.).

the asserted claims, as discussed in Section VIII.C above. (Tr. (Rangan) at 683:21-684:15.). Additionally, the infringing components (the processor, radio communication circuitry, power supply, and housing) are specially made and designed by Hytera to be assembled into a Hytera device and loaded with software that infringes the '869 asserted claims, in particular for use of the scan feature. (*Id.*). Moreover, the firmware implementing [REDACTED] has no substantial non-infringing use: a subscriber that implements scan and is capable of running it would necessarily meet the asserted claims of the '869 patent. (*Id.*).

For the foregoing reasons, Motorola has proven by a preponderance of evidence that Hytera induced the infringement and contributed to the infringement of the '869 patent.

3. '701 Patent

a) Hytera and Its Customers/Dealers Directly Infringe the '701 Patent

Hytera and its customers directly infringed the '701 patent by operating or selling the '701 Accused Products, including the de-key and re-key features, in the United States. Hytera's customers use Hytera's repeaters and subscribers together in an infringing system. (CX-1841 (St. Vincent's hospital in Alabama using PD782 subscribers and RD982 repeaters); CX-1843 (Appleton Center in Wisconsin using PD682 and PD782 subscribers and RD982 repeaters); CX-0747C (Guller Dep. Tr.) at 244:22-245:4 (Hytera U.S. dealer's customers use repeater de-key as "standard" setup); CX-0745C (Guan Dep. Tr.) at 65:2-9 (U.S. customer complaints about repeater de-key/re-key and time-out timer), 208:9-24 (Hytera performs repeater re-key/de-key), 213:23-214:9 (same), 398:12-399:11 (as part of trade show demonstrations in U.S., Hytera uses repeater de-key/re-key); Tr. (Wicker) at 419:4-420:24.).

For these reasons, Motorola has proven by a preponderance of evidence that Hytera and

its customers directly infringe the '701 patent.

b) Hytera Induced Infringement and Contributed to the Infringement of the '701 Patent

Motorola presented evidence that Hytera actively encourages, directs, intends, and teaches third parties to infringe the '701 patent, including by providing instructions on de-keying and re-keying, receiving customer complaints about de-keying/re-keying, and expecting customers to re-key and de-key the '701 Accused Products. (*See, e.g.*, CX-0745C (Guan Dep. Tr.) at 55:13-25, 56:22-24 (documentation on using repeater re-key/de-key), 65:2-9 (customer complaints about feature), 124:15-125:11 (Hytera suggests the subscriber inactivity timer be set to expire).

The record evidence also proves that the '701 Accused Products are a material part of the '701 patent because they practice the infringing method while they are operated normally as they were designed to operate. (Tr. (Wicker) at 419:11-19, 426:13-427:7.). Moreover, Hytera specially makes and designs the infringing components (the processor, radio communication circuitry, power supply, and housing) to be assembled into a Hytera device that infringes the '701 asserted claims. The infringing components are loaded with software that practices the asserted claims of the '701 patent. (*Id.*). The accused rapid re-key feature in the '701 Accused Products also has no substantial non-infringing uses. Hytera products with that feature necessarily infringe the '701 patent. (*Id.*).

For the foregoing reasons, Motorola has proven by a preponderance of evidence that Hytera induced the infringement and contributed to the infringement of the '701 patent.

4. '991 Patent

a) Hytera and Its Customers/Dealers Directly Infringe the '991 Patent

Record evidence demonstrates that Hytera actively encourages, directs, intends, and teaches third parties to infringe the '991 patent, including by providing training materials on how to configure Pseudo Trunk and TDMA Direct Mode. (*See, e.g.*, CX-1379C.32, 33 ([REDACTED]); CX-0745C (Guan Dep. Tr.) at 55:13-56:6 ([REDACTED]), 120:8-13 ([REDACTED]), 184:19-185:2 ([REDACTED]), 284:9-285:15 ([REDACTED]), 289:9-19 (same)). As Dr. Wicker explained, Hytera's CPS help file, CX-1295, teaches customers how to set up Pseudo Trunk TDMA Direct Mode (Tr. (Wicker) at 343:10-344:1) and shows the options for Pseudo Trunk Direct Mode (CX-1295.223) and how to enable TDMA Direct Mode. (CX-1295.231.). Hytera also markets its Pseudo Trunk functionality in TDMA Direct Mode. (CX-754C.11 ([REDACTED])).

Additionally, the '991 Accused Products with their associated software are material parts of the '991 patent because they embody all the limitations of the asserted claims. (Tr. (Wicker) at 344:20-345:11.). Moreover, the infringing components (the processor, radio communication circuitry, power supply, and housing) are specially made and designed by Hytera to be assembled into a Hytera device that infringes the asserted claims, in particular for use of the Pseudo Trunk software with TDMA Direct Mode. (*Id.*). The use of TDMA Direct Mode and Pseudo Trunk Direct Mode has no substantial non-infringing use: a subscriber that implements

these features would necessarily meet the claims. (*Id.*). Moreover, Hytera's knowledge of the '991 patent indicates that it knew that products implementing Pseudo Trunk and TDMA Direct Mode were designed for a combination which was both patented and infringing.

For the foregoing reasons, Motorola has proven by a preponderance of evidence that Hytera induced the infringement and contributed to the infringement of the '991 patent.

b) Hytera Induced Infringement and Contributed to the Infringement of the '991 Patent

The record evidence demonstrates that Hytera actively encourages, directs, intends, and teaches third parties to infringe the '991 patent, including by providing training materials on how to configure Pseudo Trunk and TDMA Direct Mode. (*See, e.g.*, CX-1379C.32, 33 ([REDACTED]); CX-0745C (Guan Dep. Tr.) at 55:13-56:6 ([REDACTED]), 120:8-13 ([REDACTED]), 184:19-185:2 ([REDACTED]), 284:9-285:15 ([REDACTED]), 289:9-19 (same)). As Dr. Wicker explained, Hytera's CPS help file, CX-1295, teaches customers how to set up Pseudo Trunk TDMA Direct Mode (Tr. (Wicker) at 343:10-344:1) and shows the options for Pseudo Trunk Direct Mode (CX-1295.223) and how to enable TDMA Direct Mode. (CX-1295.231.). Hytera also markets its Pseudo Trunk functionality in TDMA Direct Mode. (CX-754C.11 (identifying Hytera's demonstration of the Accused Products at IWCE and other conferences in the U.S.)).

Additionally, the '991 Accused Products with their associated software are material parts of the '991 patent because they embody all the limitations of the asserted claims. (Tr. (Wicker) at 344:20-345:11.). Moreover, the infringing components (the processor, radio communication

circuitry, power supply, and housing) are specially made and designed by Hytera to be assembled into a Hytera device that infringes the asserted claims, in particular for use of the Pseudo Trunk software with TDMA Direct Mode. (*Id.*). The use of TDMA Direct Mode and Pseudo Trunk Direct Mode has no substantial non-infringing use: a subscriber that implements these features would necessarily meet the claims. (*Id.*). Moreover, Hytera's knowledge of the '991 patent indicates that it knew that products implementing Pseudo Trunk and TDMA Direct Mode were designed for a combination which was both patented and infringing.

For the foregoing reasons, Motorola has shown by a preponderance of evidence that Hytera induced the infringement and contributed to the infringement of the '991 patent.

XII. DOMESTIC INDUSTRY REQUIREMENT: ECONOMIC PRONG

A. Legal Standard

The Commission may only find a violation of Section 337 "if an industry in the United States relating to the articles protected by the patent . . . exists or is in the process of being established." 19 U.S.C. § 1337(a)(2). Typically, a complainant must show that a domestic industry existed at the time a complaint was filed. *See Motiva LLC v. Int'l Trade Comm'n*, 716 F.3d 596, 601 n.6 (Fed. Cir. 2013).

Section 337(a)(3) sets forth the following economic criteria for determining the existence of a domestic industry in such investigations that a complainant must satisfy:

(3) For purposes of paragraph (2), and industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned –

- (A) significant investment in plant and equipment;
- (B) significant employment of labor, or capital; or
- (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

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Given that these criteria are listed in the disjunctive, satisfaction of any one of them will be sufficient to meet the economic prong of the domestic industry requirement. *Certain Integrated Circuits, Chipsets and Prods. Containing Same*, Inv. No. 337-TA-428, Order No. 10, Initial Determination (unreviewed) (May 4, 2000) (“*Certain Integrated Circuits*”). However, under Section 337(a)(3) a complainant must substantiate the nature and the significance of its activities with respect to the articles protected by the patent at issue. *Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Comm’n Op. at 30 (Feb. 17, 2011). In explaining this, the Commission has also interpreted sections 337(a)(3)(A) and (B) to concern investments in plant and equipment and labor and capital “with respect to the products presented by the patent.” *Certain Ground Faults Interrupters and Prods. Containing Same*, Inv. No. 337-TA-739, 2012 WL 2394435 at *50, Commission Op. at 78 (June 8, 2012) (quoting U.S.C. §§ 1337(a)(3)(7)). It is not sufficient for the “substantial investment” under paragraph (C) to merely relate to articles protected by the asserted patents. Rather, “the complainant must establish that there is a nexus between the claimed investment and asserted patent regardless of whether the domestic- industry showing is based on licensing, engineering, research and development.” *Certain Integrated Circuit Chips & Products Containing*, Inv. No. 337-TA-845, Final Initial Determination, 2013 WL 3463385 at *14 (June 7, 2013) (“*Certain Integrated Circuit Chips*”).

In other words, the domestic industry requirement consists of both an economic prong (concerning “the activities of or investment in a domestic industry”) and a technical prong (“whether complainant (or its licensees) practices its own patents.”). *Certain Elec. Devices, Including Wireless Commc’n Devices, Portable Music & Data Processing Devices, & Tablet Computers*, Inv. No. 337-TA-794, Order No. 88, 2012 WL 2484219, at *3 (June 6, 2012).

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There is no mathematical threshold test or a “rigid formula” for determining whether a domestic industry exists. *Certain Male Prophylactic Devices, Inc.* Inv. No. 337-TA-292, Comm’n Op. at 39, USITC Pub. 2390 (June 1991). However, to determine whether investments are “significant” or “substantial,” the actual amounts of a complainant’s investments or a quantitative analysis must be performed. *Lelo Inc. v. Int’l Trade Comm’n*, 786 F.3d 879, 883-84 (Fed. Cir. 2015). Even after *Lelo, supra*, which requires some quantification of a complainant’s investments, there is still no bright line as to a threshold amount that might satisfy an economic industry requirement. It is the Complainant’s burden to show by a preponderance of evidence that each prong of the domestic industry requirement is satisfied. *Certain Prods. Containing Interactive Program Guide and Parental Control Tech.*, Inv. No. 337-TA-845, Final Initial Determination, 2013 WL 3463385 at*14 (June 7, 2013.). Moreover, the Commission makes its determination by “an examination of the facts in each investigation, the article of commerce, and the realities of the marketplace.” *Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm’n Op. at 39, USITC Pub. 4005 (May 2008) (quoting *Certain Double Sided-Floppy Disk Drives and Components Thereof*, Inv. No. 337-TA-215, Comm’n Op. at 17, USITC Pub. 1859 (May 1986).).

B. Motorola Has Satisfied the Economic Prong of the Domestic Industry Requirement Under Section 337(a)(A), (B), and (C)

1. Overview: Motorola Has Satisfied All Three (3) Prongs of the Economic Domestic Industry Requirement

Motorola has satisfied each of the three (3) prongs of the economic domestic industry (“DI”) requirement under prongs 19 U.S.C. § 1337(a)(3)(A) and (B) and (C). (*Accord see* Tr.

(Dr. Jonathan Arnold) at 755:17-756:21.).⁹¹ While Hytera has claimed that Motorola has not satisfied the economic DI requirements because its investments in the United States and in the Asserted Patents are neither significant nor substantial, Hytera’s arguments are largely unavailing and fly in the face of the evidence. Hytera did not provide its own expert analysis of Motorola’s domestic industry or challenge Motorola’s financial information. Instead, Hytera made arguments: that Motorola’s “alleged investments” are “overinflated,” and “unreliable;” and that Motorola has failed to fulfill the nexus requirement of Section 1337(a)(3)(C) because Motorola has not established that its investments are tied to any specific *features* of its patents. (*See generally* RBr. at 83-85; at 83 n.26; RRBr. at 46-47.). Hytera also argued that Motorola’s attempt to qualify its investments in plant and equipment and labor and capital in relation to research and development (“R&D”) under Section 1337(a)(3)(A) and (a)(3)(B), and then also use R&D expenditures to qualify under 1337(a)(3)(C), renders the latter section to be “surplusage.” (*Id.* at 83-84.). Each of Hytera’s arguments is discussed in context below.

By its own description, Motorola “is an U.S. company with a history of significant domestic investments in support of its market-leading radio products business.” (CBr. at 89.). According to Motorola, and as supported by documentary evidence and testimonial evidence from Mr. Robert O’Keef,⁹² and Dr. Jonathan Arnold, both of whom generally testified credibly,

⁹¹ When he testified during the evidentiary hearing on January 31, 2018 as Motorola’s expert on economic domestic industry and on bond, Dr. Jonathan Arnold held a B.A. in economics, an MBA in finance and accounting, and a PhD. in business economics from the University of Chicago. (Tr. (Arnold) at 753:3-10, 754:1:10, 754:14-19.).

⁹² When he testified on January 29, 2018, Mr. Robert O’Keef was Motorola’s Corporate Vice President of Finance. In that capacity Mr. O’Keef manages business financial analytics, operating financial analytics, R & D, supply chain and product manufacturing. (Tr. (Robert O’Keef) at 59:11-18.). Prior to that

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Motorola employs “thousands of engineers, technicians, and contractors in the U.S., and has expended hundreds of millions of dollars in the U.S.” devoted to research and to develop its MOTOTRBO products covered by the Asserted Patents. (*Id.*) (CBr. at 89).

Motorola described its investments in its domestic industry as falling into four (4) categories. First, Motorola carries out most of its R&D activities in the United States, which include research, engineering, product development and testing, and product support which take place largely in Motorola’s Schaumburg, Illinois and Plantation, Florida facilities. (CPBr. at 95; CBr. at 89; Tr. (O’Keef) at 66:6-22, 71:7-12.). A second area of Motorola’s investments is in its supply chain. Motorola’s MOTOTRBO products, the products Motorola used to establish its domestic industry and as covered by certain Asserted Patents, are manufactured in “phases.” (CPBr. at 95; CBr. at 89.). After [REDACTED] are manufactured in Malaysia, they are sent to Motorola’s Elgin, Illinois facility where a contractor, [REDACTED], performs a final assembly, installs software, configures the radios, and customizes the radio products for Motorola’s customers, and then prepares the products for distribution. (CPBr. at 95; CBr. at 89; (Tr. (O’Keef) at 66:15-22; 81:2-82:23.). Third, Motorola offers hardware and software servicing, support and maintenance for the products it has sold in the United States tied to its

position, Mr. O’Keef served as Motorola’s Corporate Vice President and Treasurer. (Tr. (O’Keef) at 60:15-16.). Mr. O’Keef prepared the financial information contained in the Declaration attached to the Complaint and testified with respect to the financial information that Motorola maintains. (*Id.* at 60:19-25; 68:19-24: *see also* Compl. at Ex. 53.). The financial information that Motorola used in this Investigation is [REDACTED] and complies with standards that must be maintained by a publicly traded company. (Tr. (O’Keef) at 69:12-70:12.). Mr. O’Keef also testified generally about the history and development of Motorola’s two-way radio communications business. (*See generally*, Tr. (O’Keef) at 62:8-63:25.). Mr. O’Keef noted that Motorola invented and provided the communication system that Astronaut John Glenn used when he orbited the earth in 1962. In 1969, Astronaut Neil Armstrong used one of Motorola’s transponders to broadcast his message from the moon to earth. (Tr. (O’Keef) at 63:12-17.). Mr. O’Keef has a BA in finance from the University of Wisconsin, and an MBA from Northwestern in finance and accounting. (Tr. (O’Keef) at 68:12-14.).

█ products as well as to other products to ensure they keep working for the customers. (CPBr. at 95; CBr. at 89; Tr. (O’Keef) at 84:17-85:12.).

Finally, Motorola and its contractors provide domestic management and support services for its customers, which include technical support operations, network security and security monitoring in customer call centers, data centers and support for disaster recovery operations. (CPBr. at 95; CBr. at 89; Tr. (O’Keef) at 88:6-89:14.). Each of Motorola’s investment categories has been accepted as appropriate domestic industry investments under Commission precedent. *See, e.g., Certain Pers. Data & Mobile Commc’ns Devices & Related Software*, Inv. No. 337-TA-710, Order No. 102, 2011 WL 1576536 at *2 (Apr. 6, 2011) (domestic industry investments “include distribution, research and development and sales”); *Certain Video Displays, Components Thereof, & Prods. Containing Same*, Inv. No. 337-TA-687, Order No. 20 (May 20, 2010) (finding domestic industry based on customer support and assistance activities).

While Motorola tied its domestic, contractor-related expenditures to only certain services after the radios are assembled and did not rely exclusively on contractor expenditures, as Motorola noted correctly, the economic prong of domestic industry may be established even where the expenditures are based “exclusively on the activities of a contractor licensee.” (CBr. at 89 (citing *Certain Male Prophylactic Devices*, at *10; *see also Certain Silicon-on-Insulator Wafers*, Inv. No. 337-TA-1025, Initial Determination that Complainant Silicon Genesis Corporation Has Satisfied Contingently the Economic Prong of the Domestic Industry Requirement, at 14-17 (Feb. 8, 2017) (where a domestic industry was found to have been

established solely through a licensee).⁹³

Additionally, as Motorola also noted correctly, although it included in its domestic industry investments activities that include sales and distribution, there is Commission precedent that supports including sales and distribution operations in domestic industry investments. (See CBr. at 89 n.27 (citing *Certain Pers. Data & Mobile Commc'ns Devices & Related Software*, Inv. No 337-TA-710, Order No. 102, 2011 WL 1576536 at *2 (Apr. 6, 2011)).

2. Motorola's Investments in Plant and Equipment Satisfy Section § 1337(a)(3)(A) and They Are Substantial

Between January 2014 through December 2016, or up to approximately three (3) months before it filed its Complaint, Motorola spent approximately [REDACTED] in building facilities, primarily in Schaumburg, Illinois and Plantation, Florida, that are related to Motorola's [REDACTED] products. (CBr. at 90.). During the first two (2) quarters of 2017, Motorola spent an additional [REDACTED] on the same items. (CBr. at 90; *see also* Tr. (Arnold) at 761:6-765:5; CX-1129C; CX-1130C; CX-1210C; CX-1082C; CX-1208C; CX-1204C.).

Generally, Dr. Arnold, who testified with respect to the details of Motorola's economic DI evidence, relied upon the financial data that was prepared at Mr. O'Keef's direction. (See CX-1082C; CX-1100; CX-1124-1128C; CX-1129C; CXCX-1130C; CX-1136C; CX-1144C; CDX-0004.3.).

Dr. Arnold defined plant and equipment as various real estate-related structures such as office buildings, warehouses and production facilities, including investments in equipment. (Tr.

⁹³ The Commission chose not to review the Initial Determination, "Notice of Commission Determination Not to Review an Initial Determination Finding That Complainant Has Satisfied Contingently the Economic Prong of the Domestic Industry Requirement, Doc. ID No. 605244 (Mar. 10, 2017.).


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(Arnold) at 758:7:15.). Dr. Arnold tied Motorola's 2014 through second quarter 2017 plant and equipment expenditures specifically to the "service investment category and also the R&D category." (*Id.* at 785:14-16; *see also* CDC-0007C-6; CX-1136C; CX-1205C; CDX-0007C-7.).

Dr. Arnold used a sales-based allocation method to allocate Motorola's investments, a methodology that the Commission accepts. (*See e.g., Certain Beverage Brewing Capsules, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-929, Initial Determination at 111 (Sept. 16, 2015) (citing *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, USITC Pub. No. 4120, Initial Determination, Comm'n Op. at 25-26 (Dec. 2009); *see also Certain Table Saws Incorporation Active Injury Mitigation Tech & Components Thereof*, Inv. No. 337-TA-965, Order No. 10, 2016 WL 2770229, at *9-10 (Mar. 22, 2016).). For Motorola's plant and equipment-related expenditures, Dr. Arnold took that portion of the plant and equipment expenses attributable to MOTOTRBO products, based on MOTOTRBO sales as a percentage of all the Motorola's radio product sales in the United States. (Tr. (Arnold) at 759:4-9, 759:20-760:25 (relying on CX-1136C; CX-1204C).). Using that same methodology, Dr. Arnold calculated the ratio of services-related R&D building costs to total domestic R&D costs, and then applied that ratio to Motorola's domestic MOTOTRBO costs. (Tr. (Arnold) at 761:6-765:5 relying on CX-1129-C; CX-1130C; CX-1210C; CX-1082-C; CX-1208C and CX-1204C).⁹⁴ Figure No. 22, below, reflects Motorola's Section 337(a)(3)(A) plant and equipment expenditures related to Motorola's domestic services and R&D:

⁹⁴ Motorola's global sales, as testified to by Mr. O'Keef, were some [REDACTED] in 2016 and [REDACTED] in 2017. (Tr. (O'Keef) at 72:7-10, 101:5-8.).


Figure No. 22: Motorola's Expenditures for Plant and Equipment



(CBr. at 90 (citing Tr. (Arnold) at 761-765:5; CX-1130C; CX-1210C; CX-1082C; CX-1208C; CX-1204C; CDX-0007C-9).).

Again, using a sales-base allocation method, Dr. Arnold allocated Motorola's investments to each of the MOTOTRBO products that Motorola alleged practice the four (4) patents: '869, '701, '284 and '991.

Figure No. 23: Motorola's Allocation of its DI Investments to Articles Covered by Certain Asserted Patents



(CBr. at 90 (citing Tr. (Arnold) at 765:14-769:3; 812:1-813:20; CX-1204C).).

While Motorola's raw numbers for plant and equipment are sufficient to establish Motorola's significant investments under Section 1337(a)(3)(A), Hytera is correct that there appears to be something of a problem with the allocations to the DI MOTOTRBO products, but not to the extent that Hytera has represented.

Hytera argued that Dr. Arnold included one repeater product, the SLR 8000 series, as part of the allocation for the '284 and '701 patents in his calculations even though Dr. Wicker, another of Motorola's experts, did not identify a domestic industry product for the '284 and '701 patents. (CBr. at 90 n.28.). That omission, which Motorola has identified as an "oversight," led

Hytera to argue that Dr. Arnold's patent-by-patent allocation was skewed because it included the SLR 8000 series and that made both Dr. Arnold's and Dr. Wicker's testimony "unreliable" and Motorola's investments "inflated." (CBr. at 90 n.28; RBr. at 84; RRBBr. at 47-48.).

Notwithstanding its legitimate critique, Hytera's argument is overly broad and not persuasive. The fact that there was an omission in one expert's testimony and it did not align precisely with another expert's testimony does not render the entirety of each person's testimony to be "unreliable." At worst, there is inconsistency in testimony; at best, an oversight.

Moreover, since this decision has found that the '284 patent does not satisfy the technical prong of the domestic industry requirement, the plant and equipment expenditures that Dr. Arnold allocated to the '284 patent should be eliminated from the calculations, thereby eliminating (or rendering moot) Hytera's argument. Nonetheless, as Motorola pointed out, Motorola's plant and equipment expenditures would still be sufficient to meet § 1337(a)(3)(A). (CBr. at 90 n.28.).⁹⁵

Hytera also argued that if R&D expenditures from Figure No. 22, above, are eliminated, and only Motorola's plant and equipment expenditures related to the "Services" category are considered, then Motorola has spent less than [REDACTED] per year on plant and equipment since 2014, and the amount has declined. (RBr. at 85.). Given the stripped-down figures, Hytera stated that Motorola's expenditures are "insignificant" in comparison with Motorola's size and global expenditures. In other words, if only Motorola's plant and equipment expenditures related to "Services" are credited as satisfying § 1337(a)(3)(A) then Motorola actually spent less

⁹⁵ On cross-examination, Dr. Arnold acknowledged to Hytera's counsel that if any of Hytera's products did not infringe, or if it could be proven that Motorola's products on which Dr. Arnold relied did not practice at least one claim of a patent, any such investments could not be used to support economic domestic industry. (Tr. (Arnold) at 800:1-25.). That is correct legally, and Dr. Arnold was consistent in his positions.

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than ¼ of the total represented in Figure No. 22 on plant and equipment. (RBr. at 83-84.). If that argument were fundamentally accurate and based on accepted precedent, then Hytera would be correct. Given Motorola's size and considering its global sales, expenditures of less than [REDACTED] per year on plant and equipment related to the domestic products at issue might be insignificant. However, Hytera's premise is incorrect. Moreover, Hytera's argument is inconsistent with its own argument that R&D expenditures related to Motorola's services category should not be considered at all.

The gravamen of Hytera's argument is that Motorola's plant and equipment expenses related to § 1337(a)(3)(A) and (a)(3)(B) do not count if they are expenditures related to R&D. (RBr. at 83-84.). Hytera's argument is not supported in law. Commission precedent upon which Hytera relied in which the exact same argument was made, i.e., *Certain Electric Skin Care Devices, Brushes, & Chargers Therefor, & Kits Containing the Same*, Inv. No. 337-TA-959, Comm'n Op. (Feb. 13, 2017), was expressly rejected by the Commission. (*Id.* at 8-10.). To the contrary, there is ample Commission precedent which specifically permits tying equipment and plant, or labor to R&D under § 1337(a)(3)(A) or (a)(3)(C). *See, e.g., Certain Lithium Metal Oxide Cathode Materials, Lithium-Ion Batteries for Power Tool Prods. Containing Same, & Power Tool Prods. with Lithium-Ion Batteries Containing Same*, Inv. No. 337-TA-951, Initial Determination at 16 (Feb. 29, 2016) (finding that investment in an R&D facility "may qualify under either subsection (A) *or* (C) of Section 337(a)(3)"); *Certain Silicon Microphone Packages & Prods. Containing Same*, Inv. No. 337-TA-888, Order No. 47, 2014 WL 2738540, *5-7 (May 8, 2014) (finding that complainant's labor or capital investments for engineering and research development qualified as investments under subsection (B) and subsection (C)); *Certain Table Saws Incorporating Active Injury Mitigation Tech. & Components Thereof*, Inv. No. 337-TA-

965, Initial Determination, 2016 WL 2770229, at *4-5 (Mar. 22, 2016) (finding the economic prong satisfied after including R&D and engineering employees in labor investments under subsection (B)).

In any event, if Motorola's expenditures under § 1337(a)(3)(A) alone are not enough to satisfy the economic DI requirement, the Motorola's expenditures under § 1337(a)(3)(B) are sufficient. This decision finds that Motorola made significant investments in plant and equipment that continued even after the filing of the Complaint.

3. Motorola's Investments in Labor or Capital Satisfy Section § 1337(a)(3)(B).

Between 2014 and 2016, Motorola invested approximately [REDACTED] and "at least" [REDACTED] during the first half of 2017 on its domestic labor costs for R&D-related services, service delivery operations and supply chain operations for its MOTOTRBO products. (CBr. at 91.). Hytera did not challenged these figures.

To calculate Motorola's labor costs related to its MOTOTRBO products, Dr. Arnold used a raw labor headcount for employees in Schaumburg, Illinois and Plantation, Florida, and then multiplied the average salary per person by the R&D headcount for MOTOTRBO. (CBr. at 91 (citing Tr. (Arnold) at 771:21-773:5; CX-1122C; CX-1123C; CX-1124C; CX-1128C).). In a second step, Dr. Arnold multiplied the hardware maintenance costs by the ratio of MOTOTRBO product sales to total commercial and P25 sales. (CBr. at 92 (citing Tr. (Arnold) at 773:6-775:2; CX-1136C; CX-1205C; CX-1204C).). For labor and capital for the services delivery operations, Dr. Arnold took the relevant percentages of certain departments and line items (identified and provided by Motorola employees). (CBr. at 92 (citing Tr. (Arnold) at 775:3-776:16; CX-1100C; CX-1206C).). For the labor for supply chain operations, he applied the ratio of MOTOTRBO

direct materials costs (as a portion of total direct material costs in the Elgin facility) to the total outsourced labor costs (to Motorola's contractors). (CBr. at 92 (citing Tr. (Arnold) at 776:17-778:13; CX-1144C; CX-1209C).). The expenditures that result from Dr. Arnold's calculations are as follows:

Figure No. 24: Capital or Labor



(CBr. at 92.).

Dr. Arnold used a sales-based method described above to allocate the investments to the products covered by the Asserted Patents. (CBr. at 92 (citing Tr. (Arnold) at 778:19-779:17; CX-1204C).).

Figure No. 25: Allocation of Capital or Labor Expenditures to Patents



(CBr. at 92.).

Even if the expenditures for labor or capital allocated to the '284 patent are eliminated from Figure No. 25 (because this decision finds that the '284 patent does not satisfy the technical prong), there can be little doubt that Motorola's expenditures on domestic labor for the MOTOTRBO products were significant at the time of the filing of the Complaint and continued

to be through the second quarter of 2017.

4. Motorola's Investments in R&D and Engineering Satisfy Section § 1337(a)(3)(C) and Are Substantial.

Between 2014 and 2016, Motorola spent [REDACTED] for MOTOTRBO related R&D and [REDACTED] during the first six months of 2017. To identify MOTOTRBO R&D investments, Dr. Arnold identified the ratio of domestic to global R&D costs, and then applied that ratio to calculate Motorola's domestic R&D commercial costs. (*See* Tr. (Arnold) at 781:3-783:15; CX-1129C; CX-1130C; CX-1210C; CX-1082C; CX-1208C.). Dr. Arnold then allocated U.S. commercial R&D costs specifically to MOTOTRBO using MOTOTRBO's sales as a percentage of its total commercial domestic sales. Motorola's expenditures in domestic-related R& D are presented as follows:

Figure No. 26: Motorola's Domestic Expenditures for R&D



(*See* CBr. at 92.).

Using the same methodology (and the same ratios) as calculated for its domestic R&D expenditures, Dr. Arnold then allocated Motorola's domestic R&D expenses related to the MOTOTRBO products to the Asserted Patents as follows:

Figure No. 27: Motorola's Domestic Expenditures for R&D by Patent



(*See* CBr. at 90 (citing Tr. (Arnold) at 765:14-769:3; 812:1-813:20; CX-1204C).).

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Throughout the Investigation, Hytera has argued that Motorola has not satisfied the economic prong of the domestic industry requirement because it cannot establish a nexus between its domestic R&D expenditures and the Asserted Patents. (RPBr. at 92; RBr. at 86; RRBBr. at 47.). Hytera has argued that Motorola did not apply a “product by product” analysis or prove that it made investments in specific “articles” or “features” exploited by the Asserted Patents. (RBr. at 86; RRBBr. at 49.). It appears that Hytera has argued this for each subsection of § 1337(a)(3).

As Motorola also has argued consistently, the MOTOTRBO products are the “articles” or “products” (Motorola has used these terms interchangeably) protected by the Asserted Patents. (CBr. at 91; CRBr. at 45-47.). Motorola has also consistently argued that the MOTOTRBO products are each covered by all of the Asserted Patents and that no product-by-product allocation is required. (CBr. at 91; CRBr. at 49.). Because there is an overlap in the fact that MOTOTRBO products are protected by or exploit multiple patents, a domestic industry has been established for each patent. (*Id.*). Motorola has relied on established Commission precedent that there is no requirement that investments allocated to one patent be distinct from investments allocated to another patent. (CBr. at 91 (citing *Certain Table Saws Incorporating Active Injury Mitigation Tech. & Components Thereof*, Inv. No. 337-TA-965, Order No. 10, 2016 WL 2770229, at *9-10 (Mar. 22, 2016) (finding investments covering multiple products which practiced multiple asserted patents satisfied the economic prong after explaining that “reasonable allocations” are sufficient).).

Motorola has argued effectively that the MOTOTRBO products are at the “epicenter” of each of the four categories of investments described above. (CBr. at 94 (citing Tr. (O’Keef) at 71:5-21).). Motorola also argued that because it could not sell its MOTOTRBO products without

the activities it undertakes in the United States, there is no question that its investments are significant and substantial. (CBr. at 94 (citing *Certain Male Prophylactic Devices*, Comm'n Op. at 40)). By any measure, relative or quantitative, it is a finding of this decision that Motorola has established that it has proven the existence of an economic domestic industry, and that its investments are significant and substantial.

XIII. RECOMMENDATION ON REMEDY AND BOND

A. A Limited Exclusion Order is Warranted

When a violation of Section 337 is found, the Commission has the discretion to decide upon the form, scope and extent of a remedy. *Certain Flash Memory Circuits*, Inv. No. 337-TA-382, Comm'n Op. at 27 (Jun. 26, 1997); *Viscofan, S.A. v. Int'l Trade Comm'n*, 787 F.2d 544, 548 (Fed. Cir. 1986). The remedy must be reasonably related to the finding of violation. *Hyundai Elecs. Indus. Co. v. U.S. Int'l Trade Comm'n*, 899 F.2d 1204, 1209 (Fed. Cir. 1990). The Commission may issue a limited exclusion order ("LEO") directed against only the infringing products that are found to be in violation, or a general exclusion order ("GEO") directed against all infringing products. 19 U.S.C. § 1337(d). Motorola has requested a LEO directed to all of Hytera's Accused Products, including Hytera's "new designs." (CBr. at 98). However, while Motorola styles its request as a LEO, Motorola's argument appears to be a request for a GEO. (CBr. at 98.). However, in this instance, a GEO is not appropriate because the Commission may issue a GEO under Section 337(d)(2) only when at least one of two conditions is met:

- (A) a general exclusion from entry of articles is necessary to prevent circumvention of an exclusion order limited to products of named persons; or
- (B) there is a pattern of violation of this section and it is difficult to identify the source of infringing products.

19 U.S.C. § 1337(d)(2).

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The record evidence does not support a finding that a GEO is appropriate because Motorola did not provide evidence either before or during the evidentiary hearing that would support either of the two requirements of 19 U.S.C. § 1337(d)(2). *See Certain Cases for Portable Electronic Devices*, Inv. Nos. 337-TA-861/867, Comm'n Op. at 9-10 (June 20, 2014) (Commission found evidence of pervasive internet auctions selling counterfeit products covered by the asserted patent, which demonstrated that respondents could circumvent a LEO); *see also Certain Ground Fault Circuit Interrupters & Prods. Containing Same*, Inv. No. 337-TA-739, Comm'n Op. at 87-92 (June 8, 2012) ("*Certain GFCI*") (Commission rejected argument that a complainant must name all known respondents and refusing to carve a non-named party from the GEO). The type of evidence required to support a GEO is suggested by *Certain GFCI*. In that case, the Commission found that evidence showed that some respondents may have been attempting to circumvent a LEO issued in an earlier investigation, and that some respondents and other possible manufactures hat "a propensity and ability to change names and corporate forms." *Certain GFCI*, Comm'n Op. at 88-89.

With respect to the second requirement of 19 U.S.C. § 1337(d)(2), Motorola has not provided evidence that would support a finding that the source of the infringing products in this Investigation would be difficult to identify. At best, Motorola has offered unsupported attorney argument and speculative assumptions that Hytera would circumvent a LEO. Motorola did not address if or why the infringing products would be difficult to identify, especially if a CDO issues with a certification provision. There is no evidence of any type in this case to support a GEO.

While Hytera has argued from the outset of this Investigation that it has not infringed the patents at issue, Hytera's fallback position is that a LEO should be limited to only those products

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found to infringe. Hytera also argued that all of its “New Accused Products” or its “new designs” should be exempt from an exclusion order. However, in Section VII.E, even Hytera’s redesigned products related to the ’284 patent have been found to infringe. Consequently, they would be subject to a LEO. The infringing products can be found in Section V.A. and include the ’284 Redesigned Products, PD502i, PD562i, PD602i, PD662i, PD682i, PD702i, PD752i, PD782i, PD792i, PD982i. (RBr. at 86.).

Additionally, while Hytera requested that it be allowed to continue to service and repair any products previously sold to its customers before the effective date of a LEO, Hytera did not provide factual support for its request beyond an average number of units per month Hytera has in inventory. (*See generally*, RPBr. at 94-96; RBr. at 86.). Hytera provided no other information about its customers or the services they might need. Even though virtually all of Hytera’s Legacy Accused Products have infringed all of the Asserted Patents, and given Motorola’s market dominance of approximately [REDACTED] of the DMR market, it would seem logical that Motorola would be able to service Hytera’s customers in the United States. However, Motorola did not offer any testimony on this issue during the evidentiary hearing, and did not provide any information on this point in any of its Pre-Hearing or Post-Hearing Briefs. It appears that this may be an issue on which the Commission may wish to seek additional information from the Parties. However, given the state of the evidence, a decision could go either way whether Hytera should be able to continue to provide services to its own customers in the United States so long as there is a finely crafted certification provision. The Commission may need to gather facts from the Parties that they did not provide during the evidentiary hearing or in other unequivocal evidence.

In any event, a LEO is recommended for the Accused Products found to infringe,

including Hytera's '284 Redesigned Products.

B. A Cease and Desist Order Is Warranted

Pursuant to 19 U.S.C. 1337(f)(1), this decision recommends that a cease and desist order ("CDO") issue to Hytera that would prohibit them from continuing to engage in unfair acts. *See e.g. Certain Optoelectronic Devices, Components Thereof, & Prods. Containing the Same*, Inv. No. 337-TA-669, Comm'n Op., 2011 WL 7628061, at *9-10 (Nov. 1, 2011); *see also Certain Lighting Control Devices Including Dimmer Switches and Parts Thereof (IV)*, Inv. No. 337-TA-776, Comm'n Op. at 26-27, USITC Pub. No. 4403 (July 2013).). A CDO may be issued in addition to or in lieu of, an exclusion order. 19 U.S.C. § 1137(f). Hytera maintains a sizeable and commercially significant inventory in the United States of thousands of its units. *See Certain Hardware Logic Emulation Sys. & Components Thereof*, 337-TA-383, Comm'n Op., 1998 WL 307240, at *14 (Mar. 1998).

According to testimonial and documentary evidence provided during the evidentiary hearing, as of August 2017, Hytera had some [REDACTED] of its Accused Products worth some [REDACTED] in inventory in the United States. (*See* CRBr. at 50 (citing CX-0789C.73-85)).⁹⁶ Hytera's inventory in the United States appears to be relatively steady on a monthly basis.

Hytera argued against a CDO. However, Hytera has not disputed the commercial significance of its domestic inventory in any of its briefs. (*See* RPBr. at 95; RBr. at 87; RRBr. at 50.). Neither has Hytera explicitly argued for a CDO with a certification provision in any of its briefs. (*Id.*). Hytera's briefs were virtually devoid of any discussion of this possible remedy

⁹⁶ Motorola acknowledged in its Post-Hearing Reply Brief that it made an error in its Post-Hearing Brief in citing to a value of the Hytera's inventory in the United States. (CRBr. at 50 n.18.).

because Hytera relied throughout on a steadfast argument that they have not violated Section 337. (*Id.*).

By contrast, Motorola's position since the outset of this Investigation has been that a CDO is necessary to prevent Hytera from "stockpiling" infringing products prior to the issuance of a LEO and to prevent Hytera from "circumventing" a LEO. (*See* CPBr. at 100 (citing *Certain Sys. for Detecting & Removing Viruses or Worms, Components Thereof, & Prods. Containing Same*, 337-TA-510, Comm'n. Op. at 5 (Aug. 23, 2005); *see also* Compl. at 39; CBr. at 99; CRBr. at 50).).

Clearly, this decision agrees at least in part with Motorola's position, in that a CDO is recommended. However, there is no evidence from any source that Hytera would be likely to circumvent a LEO. Moreover, although Hytera failed to provide support for its conclusory request for a certification provision in the event it was found to be in violation of Section 337, this decision recommends a certification provision even if simply to assist Customs and Border Protection ("CBP") in enforcing the Commission's remedial orders. In a relatively recent case, *Certain Multiple Mode Outdoor Grills and Parts Thereof*, Inv. No. 337-TA-895, Comm'n Op. at 61 (Feb. 20, 2015), the respondent argued that a certification provision was unnecessary because the asserted claims were neither product-by-process claims nor claims that covered products that would require complicated and costly reverse engineering to determine infringement. (*Id.* at 56.). Nonetheless, the Commission enunciated a preference for a certification provision as follows: "However, it has been Commission practice for the past several years to include certification provisions in all exclusion orders to aid Customs and Border Protection ("CBP") in enforcing the Commission's remedial orders." (*Id.*). That Commission policy may apply here.

C. A Bond Is Warranted During the Presidential Review Period

Even if the Commission enters a LEO, a CDO or both, during an interim 60-day

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Presidential Review Period (“PRP”), the affected articles may be sold under bond. However, the amount of a bond must “be sufficient to protect complainant from injury.” 19 C.F. R.

§ 210.50(a)(3); *see also* 19 U.S.C. § 1337(j)(3). It is Motorola’s burden in this Investigation to establish both the propriety and amount of any bond during the PRP. *See, e.g., Certain Coenzyme Q-10 Prods. and Methods of Making Same*, Inv. No. 337-TA-790, Order No. 16, 2012 WL 14244633 at *175-177 (Mar. 20, 2012). Typically, a bond during the PRP is based either on a reasonable royalty rate or on a price differential between complainant’s and respondent’s products. *See, e.g., Certain Plastic Encapsulated Integrated Circuits*, Inv. No. 337-TA-315, Comm’n Op. on Issues Under Rev. & on Remedy, Public Interest, & Bonding, at 45, USITC Pub. No. 2574 (Nov. 1992) (setting the bond based on a reasonable royalty); *Certain Mobile Devices Associated Software, & Components Thereof*, 337-TA-744, Comm’n Op., 2012 WL 3715788, at *19-20 (June 5, 2012.) (setting bond based on reasonable royalty rate); *see also Certain Microsphere Adhesives, the Process for Making Same, and Products Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, Comm’n Op. at 24, USITC Pub. NO. 2949 (Jan. 1996) (setting bond based on price differential between domestic products and lower-priced imports).

Motorola contended that if necessary, a bond should be set during the 60-day Presidential Review Period (“PRP”) at 44% of the value of the Accused Products which Motorola says would be “appropriate” to offset the harm to Motorola’s competitive lost profits. (CBr. at 99 (citing Tr. (Arnold) at 786:12-789:12.). To calculate an appropriate entered bond value, Motorola relied upon its bond expert, Dr. Jonathan Arnold, to calculate the value of Motorola’s *lost sales* if Hytera continued to import competing digital mobile radios during the PRP. (Tr. (Arnold) at 787:1-12.). According to Dr. Arnold’s review of Hytera’s sales figures, and based upon his

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assumption that the Hytera's sales stayed relatively constant year to year, Dr. Arnold testified that Hytera imported approximately [REDACTED] in competing digital mobile radios products between January 1, 2016 and May 4, 2017. (*See* Tr. (Arnold) at 788:1-4 (citing CX-1612C; *see also* CBr. at 99; CX-1612C.2-4).). Dr. Arnold testified that Motorola's market share of sales is approximately 69% while Hytera's share of the digital radio market is approximately 5%. (Tr. (Arnold) at 788:5-6 (citing CX-1202C).). Hytera did not dispute these market share figures. Dr. Arnold then calculated that for every [REDACTED] in sales that Hytera makes, and assuming absorption ratably of Hytera's 5% share by Motorola and the other competitors, Dr. Arnold calculated that Motorola would lose some \$1.94 million in sales. (Tr. (Arnold) at 788:1-21).). Then, Dr. Arnold [REDACTED] for Motorola's MOTOTRBO products for a conclusion that Motorola is losing some \$1.18 million for every [REDACTED] in sales that Hytera makes. (*Id.* at 788:18-24 (citing CX-1204C; CX-1202C; *see also* CBr. at 99; CPBr. at 100 (citing CX-1200C; CX-1201C; CX-1202C; CX-1203C;⁹⁷ CX-1204C).). Based upon those figures, Dr. Arnold recommended a bond of \$1.18 million (based on a loss of [REDACTED] for Motorola for every dollar of Hytera's sales), or 44% of Hytera's expected sales during the PRP, pro-rated (or \$1.18 million divided by \$2.67 million. (*Id.* at 788:24-789:1-5; CBr. at 99; CRBr. at 50; CPBr. at 100).).

As with Hytera's other arguments on remedy, Hytera has contended throughout the Investigation that a bond is not warranted. (RPBr. at 95-96; RBr. at 88; RRBr. at 50). Hytera did not challenge either its own sales figures that Motorola used, or Motorola's and Hytera's respective shares of the DMR market. (*Id.*). Instead, Hytera argued from the outset that a zero

⁹⁷ CX-1203C has been withdrawn.

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(0) bond is appropriate. One of Hytera's arguments is that although Motorola has several licenses covering the asserted patents, it did not use its licenses to determine a reasonable royalty rate. (RBr. at 87.). Another of Hytera's arguments is that because Dr. Arnold had not previously served as an expert on domestic industry or calculated a bond in an ITC investigation, and because Motorola (and Dr. Arnold) ignored "Commission precedent" by conducting a lost profits analysis, an approach Hytera said that the Commission has rejected, Motorola's analysis also should be rejected (and impliedly Dr. Arnold's credentials). (RRBr. at 49 (citing *Certain Hardware Logic Emulation Systems and Components Thereof*, Inv. No. 337-TA-383, Opinion on Remedy at 41 (Apr. 1, 1998); *Certain Multiple Mode Outdoor Grills and Parts Thereof*, Inv. No. 337-TA-895, Comm'n Op. at 61 (Feb. 20, 2015) ("*Outdoor Grills*"); see also RBr. at 87.).⁹⁸ Not surprisingly, Motorola contested Hytera's position and noted that the statute does not limit the type of an appropriate injury analysis, and that administrative law judges "***have expressly relied on lost profits analyses*** for bond forfeiture." (See CRBr. at 50 (emphasis in original) (citing 19 U.S.C. § 1337(e)(1); *Certain Semiconductor Chips with Minimized Chip Package Size & Prod. Containing Same*, Inv. No. 337-TA-605, Order No. 68, 2012 WL 1376752 at *6 (Apr. 2, 2012); *Certain Lens-Fitted Film Packages*, Initial Determination, Inv. No. 337-TA-406, 2003 WL 21690959 at *23 (May 29, 2003))).

In this instance, Hytera relied too heavily on *Outdoor Grills* for the proposition that a lost profits analysis is absolutely barred for bond calculations. That is not so. Instead, the

⁹⁸ Hytera also claimed that Motorola kept changing its position during discovery by arguing for different bond rates at different times, including for a 100% bond rate. (RPBr. at 96). However, in its Pre-Hearing Brief, Motorola argued for a 44% bond rate based on a sales analysis. (CPBr. at 100.). Motorola's formal position has been consistent throughout its briefs. (*Id.*; CBr. at 99; CRBr. at 50.). In this instance, Hytera's argument is rejected. It is difficult to understand why Hytera continued to maintain positions throughout this Investigation that were disingenuous, and not supported either factually or legally.

Commission found in *Outdoor Grills* that the ALJ's recommended determination for a bond based on a lost profits analysis was flawed because the ALJ's recommendation did not account for non-infringing alternatives. Additionally, Motorola offered no evidence in this case to set a royalty rate. *See Outdoor Grills*, Comm'n Op. at 62.

XIV. WAIVER OR WITHDRAWAL OF HYTERA'S DEFENSES

Hytera's Response to the Complaint identified Five Affirmative Defenses. Hytera's First Affirmative Defense was Noninfringement. Hytera's Second through Fifth Affirmative Defenses were, respectively: Invalidity, Relief Not in the Public Interest, Express or Implied License, and Unenforceability Based on Equitable Doctrines. (Hytera Respondents' Response To The Complaint And Notice of Investigation ("Response") at 18-20 (Doc. ID No. 612893 (May 26, 2017)). Hytera did not address in its Pre-Hearing Brief or provide any evidence during the evidentiary hearing to support its Third and Fifth Affirmative Defenses. As noted in Order No. 38 in response to Motorola's Motion In-Limine, Hytera withdrew its defenses of implied license, unenforceability and estoppel. (*See* Order No. 38 at 3.). Consequently, it is a finding of this decision that Hytera has waived, withdrawn or abandoned its Third, Fourth and Fifth Affirmative Defenses consistent with Ground Rules 7.2 and 10.1. *Kinik Co. v. Int'l Trade Comm'n*, 362 F.3d 1359, 1367 (Fed. Cir. 2004). While Hytera made a late Proffer on its Fourth Affirmative Defense, Express or Implied License, that Affirmative Defense was deemed moot in Order No. 38 by Hytera's own waiver. A late Proffer on the issue of license does not vitiate Order No. 38 or Hytera's own, previous waiver of this issue. Accordingly, Hytera's license defense should be considered waived, abandoned or withdrawn under Ground Rule 10.1.

XV. CONCLUSIONS OF FACT OR LAW: THIS INITIAL DETERMINATION FINDS A SECTION 337 VIOLATION BASED UPON INFRINGEMENT OF U.S. PATENT NOS. 7,369,869; 7,729,701; AND 8,279,991

1. The Commission has subject matter, personal, and *in rem* jurisdiction in this Investigation.
2. The Legacy Accused Products have been imported into the United States.
3. Motorola has proven by a preponderance of evidence that the '284 Accused Products infringe asserted claims 9, 13, 14, and 15 of U.S. Patent No. 8,116,284.
4. Motorola has proven by a preponderance of evidence that the '869 Accused Products infringe asserted claims 1, 6, 17, and 21 of U.S. Patent No. 7,369,869.
5. Motorola has proven by a preponderance of evidence that the '701 Accused Products infringe asserted claims 1 and 11 of U.S. Patent No. 7,729,701.
6. Motorola has proven by a preponderance of evidence that the '991 Accused Products infringe asserted claims 7 and 8 of U.S. Patent No. 8,279,991.
7. Hytera has not proven by clear and convincing evidence that asserted claims 9, 13, 14, and 15 of U.S. Patent No. 8,116,284 are invalid.
8. Hytera has not proven by clear and convincing evidence that asserted claims 1, 6, 17, and 21 of U.S. Patent No. 7,369,869 are invalid.
9. Hytera has not proven by clear and convincing evidence that asserted claims 1 and 11 of U.S. Patent No. 7,729,701 are invalid.
10. Hytera has not proven by clear and convincing evidence that asserted claims 7 and 8 of U.S. Patent No. 8,279,991 are invalid.
11. Motorola has proven that it satisfies the technical prong of the domestic industry requirement for U.S. Patent Nos. 7,369,869; 7,729,701; and 8,279,991.
12. Motorola has failed to prove that it satisfies the technical prong of the domestic industry requirement for U.S. Patent No. 8,116,284.
13. Motorola has proven that it satisfies the economic prong of the domestic industry requirement.
14. Motorola has proven that Hytera has violated Section 337 of the Tariff Act of 1930, as amended.

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The lack of discussion of any matter raised by the Parties, or any portion of the record, does not indicate that it has not been considered. Rather, any such matter(s) or portion(s) of the record has/have been determined to be irrelevant, immaterial or meritless. Arguments made on briefs, which were otherwise unsupported by record evidence or legal precedent, have been accorded no weight.

XVI. CONCLUSION AND ORDER

Based upon the foregoing, it is my Initial Determination on Violation of Section 337 that Hytera has violated Section 337 of the Tariff Act of 1930, as amended, by importing into the United States, selling for importation, or selling within the United States after importation of certain graphic systems, components thereof, and consumer products containing the same, by reason of infringement of claims 1, 6, 17 and 21 of U.S. Patent No. 7,369,869; claims 9, 13, 14, and 15 of U.S. Patent No. 8,116,284; claims 1 and 11 of U.S. Patent No. 7,729,701; and claims 7 and 8 of U.S. Patent No. 8,279,991.

This Initial Determination on Violation of Section 337 of the Tariff Act of 1930 is certified to the Commission. All orders and documents, filed with the Secretary, including the exhibit lists enumerating the exhibits received into evidence in this Investigation, that are part of the record, as defined in 19 C.F.R. § 210.38(a), are not certified, since they are already in the Commission's possession in accordance with Commission Rules. *See* 19 C.F.R. § 210.38(a). In accordance with 19 C.F.R. § 210.39(c), all material found to be confidential under 19 C.F.R. § 210.5 is to be given *in camera* treatment.

After the Parties have provided proposed redactions of confidential business information ("CBI") that have been evaluated and accepted, the Secretary shall serve a public version of this ID upon all parties of record. The Secretary shall serve a confidential version upon counsel who


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are signatories to the Protective Order (Order No. 1) issued in this Investigation.

Pursuant to 19 C.F.R. § 210.42(h), this Initial Determination shall become the determination of the Commission unless a party files a petition for review pursuant to 19 C.F.R. § 210.43(a) or the Commission, pursuant to 19 C.F.R. § 210.44, orders on its own motion a review of the Initial Determination or certain issues therein.

Within fourteen (14) days of the date of this document, the Parties shall submit to the Office of Administrative Law Judges a joint statement regarding whether or not they seek to have any portion of this document deleted from the public version. The Parties' submission shall be made by hard copy and must include a copy of this ID with red brackets indicating any portion asserted to contain CBI to be deleted from the public version. The Parties' submission shall also include an index identifying the pages of this document where proposed redactions are located. The Parties' submission concerning the public version of this document need not be filed with the Commission Secretary.

SO ORDERED.


MaryJoan McNameara
Administrative Law Judge

**CERTAIN TWO-WAY RADIO EQUIPMENT AND
SYSTEMS, RELATED SOFTWARE AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1053

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **INITIAL DETERMINATION** has been served upon the following parties as indicated, on **August 2, 2018**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112
Washington, DC 20436

On Behalf of Complainant Motorola Solution, Inc.:

Adam Alper, Esq.
KIRKLAND & ELLIS LLP
555 California Street
San Francisco, CA 94104

- Via Hand Delivery
- Via Express Delivery
- Via First Class Mail
- Other: _____

**On Behalf of Respondents Hytera Communications Corp.
Ltd., Hytera America, Inc. and Hytera Communications
America (West) Inc.:**

E. Robert Yoches
**FINNEGAN, HENDERSON, FARABOW,
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- Via Express Delivery
- Via First Class Mail
- Other: _____

UNITED STATES INTERNATIONAL TRADE COMMISSION

Washington, D.C.

In the Matter of

**CERTAIN TWO-WAY RADIO
EQUIPMENT AND SYSTEMS, RELATED
SOFTWARE AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1053

ORDER NO. 38:

**GRANTING IN-PART AND DENYING IN-PART
COMPLAINANT’S OMNIBUS MOTION *IN LIMINE*
[MOTION DOCKET NO. 1053-026]**

(January 26, 2018)

I. INTRODUCTION

On January 5, 2018,¹ pursuant to Commission Rules 210.15 and 210.37 and Order No. 5, Complainant Motorola Solutions, Inc. (“Complainant” or “Motorola”) filed an omnibus motion *in limine* (“Omnibus MIL”), together with a memorandum in support (“MIL Memorandum”) to preclude Respondents Hytera Communications Corp. Ltd., Hytera America, Inc., and Hytera America, Inc. (“Hytera” or “Respondents,” and with Motorola, “the Parties”) from submitting certain documents and testimony into evidence during the evidentiary hearing (“Hearing”) that is scheduled to start on January 29, 2018. (Motion Docket. No. 1053-026; MIL at 1-2).²

¹ Motorola’s Omnibus Motion appears to have been filed and docketed on January 8, 2018.

² Motorola certifies pursuant to Ground Rule 2.2 that on January 3, 2018, the Parties discussed the substance of Motorola’s Omnibus MIL but were unable to reach resolution. (See Omnibus MIL at 2).

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Specifically, Motorola seeks to exclude from submission as evidence during the Hearing.³

MIL 1 ... arguments, testimony, and exhibits relating to Hytera's assertions that U.S. Patent Nos. 9,099,972 and 8,116,284 are invalid for obviousness over combinations of specific prior art references, which were not adequately disclosed in Hytera's expert reports; and

MIL 2 ... arguments, testimony, and exhibits relating to Hytera's defenses that U.S. Patent Nos. 8,279,991 and 7,369,869 are allegedly essential to the ETSI standard, which were not timely disclosed in accordance with the Procedural Schedule and Ground Rules that govern this Investigation.

On January 12, 2018, Hytera filed its opposition ("Opposition") to Motorola's Omnibus MIL. (See Hytera Respondents' Opposition to Complainant's Motion *in Limine* Nos. 1 and 2, Doc. ID No. 633836 (Jan. 12, 2018).).

The content and argument of Motorola's MILs and Hytera's opposition thereto, are addressed in greater detail in this Order. However, to summarize:

1. **MIL 1:** MIL 1 is *denied without prejudice*. Motorola chose to style its evidence preclusion arguments with respect to Hytera's case at the close of discovery as a motion in *limine* rather than as a summary determination motion. Accordingly, while at this time, the conclusory statements contained in Hytera's pre-hearing brief ("Pre-Hearing Brief"), and expert witness reports, in addition to those exhibits that may be admissible as evidence, will not be precluded *per se*, Hytera's evidence, such as it is, will be subject to appropriate Hearing and post-hearing evidentiary objections.

Moreover, Hytera will not be permitted to provide additional explanation, explication or reasoning on the alleged invalidity of any of the remaining asserted patents and claims in this

³ For ease of reference, this Order adopts the designations of MIL 1 and MIL 2 for each class of evidence Motorola seeks to exclude as part of its Omnibus MIL, consistent with Motorola's designations. (See MIL Mem. at 3, 11.).

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Investigation,⁴ whether based on obviousness or anticipation, that is not contained in Hytera's expert witness reports by Dr. Robert Akl and Dr. Mark Clements, and in Hytera's its Pre-Hearing Brief. Specifically, Hytera is limited to the conclusory statements of its Pre-Hearing Brief. Dr. Akl and Dr. Clements will not be permitted to provide *any* reasoning or explanation that is not contained in their expert reports.

Similarly, Hytera will not be permitted to offer additional explanation, explication or analysis of non-infringement that is not contained in Hytera's expert witness reports and in Hytera's Pre-Hearing Brief.

Hytera's charts or tables that purport to show prior art obviousness combinations, some of which are replicated below, do not constitute evidence without more. Hytera's prior art combination charts, without more, violate Ground Rule 5. Based upon the substance contained in its Pre-Hearing Brief and expert witness reports, and from the manner in which Hytera combined prior art without analysis or explanation, it is more than questionable whether Hytera will be able to satisfy its burdens of proof on invalidity and non-infringement consistent with Commission Rule 210.37(a).

MIL 2: Hytera has withdrawn its defenses of implied license, unenforceability and estoppel directed at Motorola's alleged violation of the rules of certain standards setting organizations. Those defenses are *moot*. With respect to its license defense, Hytera is precluding from putting in any evidence during the Hearing. Therefore, that part of Motorola's

⁴ The patents referenced in this Order that remain in this Investigation are U.S. Patent Nos.: 9,099,972 ("the '972 patent"); 8,116,284 ("the '284 patent"); 8,279,991 ("the '991 patent"); 7,369,869 ("the '869 patent"); and 7,729,701 ("the '701 patent") (collectively, the "Asserted Patents."). The following claims from the Asserted Patents remain in this Investigation as follows: claims **9**, 13, 14, and **15** of the '284 patent; claims **1**, 6, **17**, and **21** of the '869 patent; claims **1** and 11 of the '701 patent; claims 7, 8, 12 and 16 of the '991 patent; and claims **6** and **7** of the '972 patent. The claims in bold are independent claims.

MIL 2, Motion Docket No. 1053-026, is *granted*.

Discussion of Motorola's MILs 1 and 2 is in reverse order.

II. PARTIES' POSITIONS AND DISCUSSION

1. MIL 2: Evidence with Respect to Untimely Defenses

A. Motorola's Position and Argument

Motorola argues for the exclusion of all evidence or argument in support of Hytera's defenses of express or implied license, and unenforceability that were not disclosed during fact or expert discovery. (MIL 2 at 11.). Motorola argues that each of Hytera's defenses is based upon a "bare allegation" that "to the extent" that certain of the asserted patents are "essential" to certain ETSI standards, Motorola's claims should be barred. (*Id.*). Motorola argues that Hytera's defenses are technically and legally inadequate. (*Id.*).

Motorola observes that Hytera "equivocally alleged: 'For example, to the extent any of the Asserted Patents is essential to practice ETSI Digital Mobile Radio (DMR) standards, including ETSI TS 102 361-1 and ETSI TS 102 361-2, Hytera has a license, express or implied, from Motorola for such patent.'" (*Id.* (citing Hytera's Response to Complaint ("Resp. to Compl."), at 19; Doc. ID No. 612893 (May 26, 2017)).

With respect to its unenforceability defense, Motorola says that Hytera's initial response was: "For example, upon information and belief, as a member of ETSI, Motorola participated in the development of ETSI DMR standards, including at least ETSI TS 102 361-1 and ETSI TS 102 361-2, but did not disclose any of the Asserted Patents or any patent applications that resulted in the Asserted Patents as essential IPRs." (*Id.* at 12 (citing Resp. to Compl. at 19-20)).

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Motorola asserts that despite serving Hytera on July 18, 2017 with interrogatories designed to elicit detailed evidence in support of Hytera's defenses, Hytera's answer on August 4, 2017, was still equivocal. (*Id.* at 13.).

With respect to the '869 and '991 patents, Motorola says that Hytera failed to even allege that any claims of the '869 and '991 patents are essential to practice any standard, let alone which standards or portions thereof. (*Id.* at 13-14.). Motorola contends that on the last day of discovery, Hytera provided claim charts which supposedly map claim elements to portions of the ETSI standards. Motorola contends that Hytera's charts contain no more than "block quotes" from the standard, without analysis or explanation. (*Id.* at 14 (citations omitted).). Motorola says that Hytera then "reversed course" and included in its Pre-Hearing Brief a previously undisclosed narrative analysis of certain claims of the patents with a "previously undisclosed analysis" of a license agreement between Motorola and Hytera. (*Id.* at 15.). Motorola says that Hytera also inserted the same block information into Dr. Robert Akl's October 24, 2017, expert report. (*Id.* at 14 (citing Ex. 3, Expert Report of Robert Akl (Oct. 24, 2017) at 112-13).).

Motorola grounds its argument in case precedent that permits striking evidence that is late, or that is lacking in specific facts, and Commission Rule 210.27(f) that requires litigants to seasonably supplement and amend prior interrogatory responses. (*Id.* at 15-16 (citing *Certain Elec. Devices, Including Wireless Commc'n Devices, Portable Music and Data Processing Devices, and Tablet Computs.*, Inv. No. 337-TA-794, Order No. 86, 2012 WL 2484218, at *2 (Gildea, ALJ) (June 4, 2012); see also *Certain Anti-Theft Deactivatable Resonant 16 Tags & Components Thereof*, Inv. No. 337-TA-347, Order No. 50, 1993 WL 852751, at *4 (Luckern, ALJ) (Aug. 18, 1993) (granting a motion to strike affirmative defenses because "even after

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discovery has been completed there is a complete lack of specific facts in [Respondent's] responses with respect to the affirmative defenses pleaded").

Moreover, as Motorola notes, Commission Rule 210.27(f) explains that a party is "under a duty seasonably to amend a prior response to an interrogatory . . . if the party learns that the response is in some material respect incomplete or incorrect and if the additional or corrective information has not otherwise been made known to the other parties during the discovery process or in writing." 19 C.F.R. §210.27(f)(1).

Motorola notes that Hytera had certain documents, including public documents, that were available and could have been produced long before they were, and within the procedural deadlines. (*Id.*). Finally, Motorola says that Hytera did not ask for leave of court to file its late analysis, and that Motorola would be prejudiced if Hytera were allowed to proceed with its late explanation in its Pre-hearing Brief. (*Id.* at 14.).

B. Hytera's Position and Argument

Hytera acknowledges that it is no longer pursuing certain original defenses of implied license, unenforceability and estoppel directed at Motorola's alleged violation of the rules of certain standards-setting organizations. (Opp'n at 23 n.7; *see also id.* at 25.).

With respect to its licensing defense, Hytera notes that Motorola served Hytera with a deposition notice directed at a Hytera corporate witness, but that was one of the 95 topics for which Hytera sought a protective order. (*Id.* at 24; *see also* Order No. 20.). With respect to its licensing defense more generally, Hytera notes that "[t]he controlling issue is whether it is possible to 'reasonably avoid' the asserted claims of the '869 and '991 patents and 'remain[] compliant with the Standards.'" (Opp'n at 25 (citing Exhibit 10 to Opp'n (License) at ¶ 1.4).). Hytera notes that its licensing defense presented Hytera with a dilemma. To prevail on that

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defense, the '869 and '991 patent claims had to have been construed broadly enough to cover the standards and Hytera's allegedly standards-compliant products. (*Id.* at 26.). Hytera claims it was unable to make that analysis until it knew Motorola's claim construction and infringement contentions, and its position on whether the claims of those patents are "ESSENTIAL PROPERTIES." (*Id.*). Hytera claims that not having Motorola's position made its defense "conditional." (*Id.*). Hytera notes that if the patents are found to infringe, it can use its licensing defense. In order to avoid a "trap" that Hytera says Motorola set to try to obtain Hytera's admission of infringement on the two referenced patents, Hytera says it used the phrase "to the extent" to qualify its response to Interrogatory No. 84. (*Id.*).

Hytera also says that Motorola must have known its defense was "conditional" as of August 4, 2017 when Hytera served Motorola with initial discovery responses; that Motorola knew to which patents and claims Hytera's defense applied; and which standards were at issue. (*Id.*). Hytera says that it supplemented its interrogatory response on October 13, 2017, once it had Motorola's positions on infringement and whether the asserted claims were "ESSENTIAL PROPERTIES." (*Id.* at 27.). Hytera says it then submitted "detailed claim charts" yet while Motorola makes the "curious charge" that the charts Hytera submitted are no more than "block quotes from the standard" matched up to claim limitations, Motorola does not explain what is wrong with this. (*Id.* at 27 (citing Motorola's MIL 2 at 14).). Finally, Hytera notes that the licensing issue is a legal issue for which no fact discovery was necessary. (*Id.* at 28.).

C. Discussion and Order

Since Hytera has conceded that it is no longer pursuing implied license, unenforceability and estoppel, those defenses are *moot*.⁵

However, Hytera's argument with respect to its licensing defense is unsupported. Moreover, Hytera did not address certain key issues in its Opposition that Motorola raised. Hytera had the burden of proving licensing as its defense. While it is understandable that Hytera might have preserved its position until it knew Motorola's claim construction positions, Hytera had no reason for such a lengthy delay in supplementing interrogatories because the *Markman* Hearing was held on October 4, 2017. (See *Markman* Hearing Tr., Doc. ID No. 624992 (Oct. 6, 2017).) Hytera knew Motorola's position on claim construction by September 15, 2017 when Motorola filed its initial Claim Construction Brief. (Doc. ID No. 623249.) By September 15, 2017, Hytera knew Motorola's claim construction positions. Hytera's arguments with respect to timing are makeweight arguments.

If Dr. Akl's statements in his October 24, 2017 expert report ("Dr. Akl Report") with respect to "XVIII. Opinions Regarding Licensing," paragraphs 283-285, are compared against Hytera's Pre-Hearing Brief at pp. 70-71, Hytera's Pre-Hearing Brief does not tie its conclusory statements with respect to licensing to Dr. Akl's Report. There is not a single reference to Dr. Akl's Report, let alone to *any* other expert report in Hytera's Pre-Hearing Brief.

As Dr. Akl acknowledges in his expert report, he is "no legal expert" on licensing. Dr. Akl's Report does not identify *which* standards apply, *which* standards he used or were given to him by counsel, and *how* he was able to perform such a legal analysis. (*Id.*) (See Dr. Akl

⁵ Hytera should have filed on EDIS that it was relinquishing certain of its defenses long before Motorola filed its MIL 2, consistent with a Notice filed on EDIS on Oct. 24, 2017.

Report at 112-13.). There is no analysis. An examination of Appendix E2 to the Akl Report, which Dr. Akl references as support for Section XVIII, provides *no* analysis tying *any* standards that might apply to the claims of the '869 and '991 let alone to “ESSENTIAL PROPERTIES.” (*Id.*).

In sum, Dr. Akl’s Report with respect to Hytera’s licensing defense is inadequate factually and legally. Dr. Akl lacked the expertise to offer even conclusory statements on Hytera’s licensing defense. Hytera’s Pre-Hearing Brief discussion of its licensing defense suffers from the same lack of support and explication. Any attempt Hytera made to supply evidentiary support for its licensing defense was disclosed far too late.

Therefore, Motorola’s MIL 2 with respect to Hytera’s licensing defense *is granted*. Hytera will be precluded from eliciting any information with respect to this issue during the Hearing. In this case, the principles of *Certain Anti-Theft Deactivatable Resonant 16 Tags & Components Thereof*, Inv. No. 337-TA-347, Order No. 50, clearly apply. Hytera cannot salvage a licensing defense for which he provided inadequate evidence and support, not only by the end discovery, but even in its Pre-Hearing Brief.

2. MIL 1: Evidence with Respect to the Invalidity of U.S. Patent Nos. 9,099,972 (“the '972 patent”) and 8,116,284 (“the '284 patent”)

A. Motorola’s Position and Argument

The essence of Motorola’s MIL 1 is that *all* of Hytera’s arguments, testimony and exhibits with respect to the '972 and '284 patents should be precluded.⁶ Motorola says that Hytera has taken a “mix and match approach” by offering conclusory combinations of prior art, without explanation or explication, to support its invalidity claims that result in “thousands of

⁶ Motorola is using the '972 and '284 patents as examples of Hytera’s generally inadequate evidence for all of the Asserted Patents and claims.

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potential combinations.” (See MIL Mem. at 2-3.). By way of example, Motorola points out that Dr. Clements’ October 24, 2017 initial expert report with respect to the ’972 patent strung together prior art references, starting with Mahowald, which Dr. Clements then combined with 15 other references, as follows:

It is my opinion that claims 1, 6, and 7, addressed in the chart below, are anticipated under 35 U.S.C. § 102 and/or rendered obvious under 35 U.S.C. § 103 by Mahowald alone and/or in combination *with Bhattacharya, Kon, Katayanagi, Hurst, Jaccino, Gutta, Vishlitzky, Biyan, Koski, Iyer, Arbel, Short, Haparnas, Wattersen, or Chen* (as discussed below and in my report).

(See MIL Mem at 4 (citing Ex. 2, Expert Report of Dr. Mark A. Clements (Oct. 24, 2017), Ex. 5 at 4) (emphasis in original).).

Motorola contends that an arithmetical calculation of the possible combinations of Dr. Clements’ prior art combination with respect to limitation [1a] of the ’972 patent results in “more than **5,000 possible combinations.**” (MIL Mem. at 4 (emphasis in original) (quotation omitted).). According to Motorola, Dr. Clements’ prior art combinations result in “millions” of permutations for claim 6 and “hundreds of thousands” permutations for claim 7 of the ’972 patent. (*Id.* at 5.).

Similarly, Motorola says that another of Hytera’s experts, Dr. Robert Akl, provided the same type of vague, unexplained, conclusory prior art combinations with respect to the ’284 patent in his October 24, 2017 expert report as follows:

It is my opinion that the claims in the charts below are anticipated under 35 U.S.C. §102 or rendered obvious under 35 U.S.C. §103 by **Barnes alone or in combination with Janky, Lindsay, Long, Weinstein, ETSI, or Ito.**

(See *Id.* (citing Oct. 24, 2017 expert report of Dr. Robert Akl, Appendic C at Ex. 3, Expert Report of Dr. Robert Akl (Oct. 24, 2017) (emphasis in original), Appendix C1 to MIL 1 Mem. at 2).).

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Motorola says that Hytera's combinations of prior art for claims 9, 13 and 14 of the '284 patent similarly evidence a "mix and match approach" as referenced in the following quotation from a November 1, 2017 e-mail from Hytera to Motorola:

Claims 9 and 13-14:

- Barnes
- Barnes in view of Janky; ETSI; Long; Ito; Lindsay[[,]]; Weinstein[[,]]; or [[Ito]] Janky, ETSI, Long, Lindsay, Weinstein, and Ito
- TETRA
- TETRA in view of Janky; ETSI; Long; Lindsay; Weinstein; or Janky, ETSI, Long, Lindsay, and Weinstein
- Ito
- Ito in view of ETSI; Katzela; Hanzo; or ETSI, Katzela, and Hanzo
- Wiatrowski

(MIL Mem. at 7 (quoted from original).).

Motorola notes that by October 27, 2017, it contacted Hytera with respect the insufficiencies of Hytera's expert opinions. According to Motorola, while Hytera disagreed with Motorola's observations, it provided no other explanations, but rather repeated in a November 1, 2017 e-mail the same combination of references with even more prior art references added:

Claim 6:

- Mahowald in view of (1) Bhattacharya, Kon, or Chen; (2) Chen or Short; (3) Short or Biyan; (4) Vishlitzky, Biyan, or Gutta; (5) Koski, Katayanagi, Hurst; (6) Gutta, Short, Haparnas
- Mahowald in view of (1) Bhattacharya, Kon, or Chen; (3) Short or Biyan; (4) Vishlitzky, Biyan, or Gutta; (5) Koski, Katayanagi, or Hurst; and (6) Gutta, Short, or Haparnas
- Mahowald in view of (1) Bhattacharya, Kon, or Chen; (2) Chen or Short; (4) Vishlitzky, Biyan, or Gutta; (5) Koski, Katayanagi, or Hurst; and (6) Gutta, Short, or Haparnas
- Mahowald in view of (1) Bhattacharya, Kon, or Chen; (2) Chen or Short; (3) Short or Biyan; (5) Koski, Katayanagi, or Hurst; and (6) Gutta, Short, or Haparnas
- Mahowald in view of (1) Bhattacharya, Kon, or Chen; (2) Chen or Short; (3) Short or Biyan; (4) Vishlitzky, Biyan, or Gutta; and (6) Gutta, Short, or Haparnas
- Mahowald in view of (1) Bhattacharya, Kon, or Chen; (2) Chen or

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- Short; (3) Short or Biyan; (4) Vishlitzky, Biyan, or Gutta; and (5) Koski, Katayanagi, or Hurst
- Vishlitzky in view of (1) Bhattacharya, Kon, or Chen; (2) Chen or Short; (3) Short or Biyan; (5) Koski, Katayanagi, Hurst; and (6) Gutta, Short, Haparnas
 - Vishlitzky in view of (1) Bhattacharya, Kon, or Chen; (2) Chen or Short; (3) Short or Biyan; (5) Koski, Katayanagi, Hurst; and (6) Gutta, Short, Haparnas

(Id. reproduced from original).

Even though Motorola says that Hytera notified it before the Parties' pre-hearing brief filings that it was dropping certain prior-art combinations, Motorola produced an astonishing Table, replicated below, that it says identifies the number of prior art invalidity combinations for the asserted claims of the '972 and '284 patents as taken from Hytera's Drs. Akl's and Clements' expert reports and Hytera's Pre-Hearing brief:

Claim	Approximate Number of Prior-Art Combinations in Expert Report	Approximate Number of Prior-Art Combinations in Pre-Hearing Brief
'972 Patent (Dr. Clements)		
1	10,000+	10
6	500,000,000+	840
7	400,000+	56
'284 Patent (Dr. Akl)		
6	700+	14
9	700+	14
13	700+	14
14	700+	49

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15	700+	8
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(MIL Mem. at 8 (claiming a mathematical permutation calculation based upon primary and secondary references to which Hytera cites), MIL Mem. at 8 n.2 citing Ex. 5 to MIL Mem.).

Motorola supports its argument that all Hytera’s conclusory statements and conclusory expert opinions should be precluded because they violate Ground Rule 5, which requires that each expert report “shall contain a complete statement of all opinions to be expressed and the basis and reasons therefore.” (*Id.* at 9 (quoting Ground Rule 5) (citing *Certain Consumer Elecs. and Display Devices with Graphics Processing and Graphics Processing Units Therein*, Inv. No. 337-TA-932, Order No. 33, 2015 WL 4124311 at *2, 3 (June 19, 2015)). Similarly, Motorola points to Federal court and ITC precedent that requires that it falls on a patent challenger in asserting invalidity challenges with prior art “to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device or carry out the claimed process, and would have had a reasonable expectation of success in doing so.” (*Id.* at 9 (quoting *PharmaStem Therapeutics Inc. v. ViaCell Inc.*, 491 F.3d, 1342, 1360 (Fed. Cir. 2007; *see also Certain Wireless Commc’ns Bas Stations and Components Thereof*, Inv. No. 337-TA-871, Order No. 28, 2013 WL 6355748 at *1 (Nov. 28, 2013) (Gildea, ALJ)).

In the same vein, Motorola cites to ruling made in this Investigation as well as in others with respect to the inherent inadequacy and inappropriateness of string cites under any circumstances, let alone a reliance on them in lieu of a party’s providing complete, analytical explanations of prior art combinations, with complete explanations of the motivations one of ordinary skill in the art would have to combine certain prior art. (MIL Mem. at 3 (citing Nov. 2,

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2017 Telephone Conference Transcript (“Teleconference Tr.”) at 20:14-220; *see also* MIL Mem. at 9 (citing *Certain UV Curable Coatings for Optical Fibers, Coated Optical Fibers, and Prods. Containing Same*, Inv. No. 337-TA-1031, Order No. 41, 2017 WL 3277238 at *6 (July 20, 2017)). Motorola essentially contends that it cannot possibly prepare adequately to address an impossible number of Hytera’s vague, unsupported and inadequately explicated prior art, invalidity combinations, and it has been prejudiced in trying to do so.

B. Hytera’s Position and Argument

Hytera contends that the relief Motorola seeks in its Omnibus MIL is Draconian; that it is a motion for summary determination; and it lacks merit. (Opp’n at 1.).

Hytera contends that the number of claims that Motorola asserted was unmanageable, but despite that, Motorola’s expert witnesses had no problems rebutting Hytera’s prior art combinations. Hytera contends that the same exhibits that Motorola attached to its MIL 1, in fact, show that Hytera’s expert witnesses have explained the specific prior art combinations and the motivations for combining them. (*Id.* at 2.).

According to Hytera, its expert’s, Dr. Clements’ initial expert report addresses claims 1, 6 and 7 of the ’972 patent, but notes that claim 1 has been dropped from the Investigation. (*See id.* at 3 n.4.). Hytera says that Dr. Clements’ Report *does* set forth disclosures from each reference that teaches that claim element for which the reference is cited, and explains why a person of ordinary skill would have combined references as Dr. Clements does. (*Id.* at 4 (citing Ex.2 (Ex. 5 to Opening Clements Report at 10-21, 55-58, 55-56, and 33-34)).). To that end, Hytera also says that Dr. Anderson’s rebuttal report to the ’972 patent addresses Dr. Clements’ combinations, and he did not “complain” that he did not understand Dr. Clements’ prior art references. (*Id.*)

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Moreover, Hytera notes that Dr. Anderson grouped references “where appropriate.” Similarly, Hytera says that Dr. Anderson had no problem responding to Dr. Clements. (*Id.* (citing Ex. 4 (Anderson Dep. Tr. at 176:8, 184:2, 186:12-187:5)). Hytera acknowledges that it grouped references in its Pre-hearing Brief, to which Motorola objects, as reflected in the following table:

'972 Patent Features Claimed	Secondary References
Two-stage adjustment	<i>Bhattacharya</i> (two volume stages) <i>Chen</i> (volume and frequency stage)
Control timing of sampling based on operating state	<i>Katayanagi, Gutta</i>
User-manipulated volume input	<i>Chen, Short</i>
Minimum SNR Threshold	<i>Short, Biyan</i>
Automatic volume control in half-duplex device	<i>Biyana, Gutta</i>
Suspend ambient noise sampling when speech is present	<i>Koski, Katayanagi</i>
Intermittent ambient noise sampling	<i>Gutta, Short</i>
Inactive circuitry by default	<i>Gutta, Watterson</i>
Transmit, receive, and idle states	<i>Arbel</i>

(*See* Opp’n at 5 (citing Hytera Pre-hearing Brief. at 80-81 (Doc ID 631734)).

Similarly, Hytera provides a chart from its Pre-Hearing Statement that Hytera says discloses groupings of secondary obviousness combinations for claims 6 and 7 of the type to which Motorola objects. (*See* Opp’n at 6, 7 (citing Pre-hearing Statement (Doc. ID No. 631724), Ex. A to Opp’n at 3, 4)).

Hytera offers the same type of rebuttal with respect to the '284 patent. Hytera says that the '284 patent covers a “very pedestrian idea,” for which Motorola asserted that Hytera infringes eight (8) claims. (Opp’n at 8.). In response, Hytera says that Dr. Akl’s initial expert report contains claim charts and text that identifies in detail specific combinations of references that Hytera identified to support its claims of obviousness. (*Id.* (citing Akl Opening Report, Ex. 6 to Motion; Appendices C1, C2 and C3)). Hytera says that Motorola’s witness, Dr. Wicker,

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provided a responsive rebuttal report to Dr. Akl's expert report that did not indicate that he did not understand Dr. Akl's prior art references, whether with **Barnes** as the primary reference alone, or with Barnes in combination with **Janky, Lindsay, Long, Weinstein, ETSI, and/or Ito**. (*Id.* at 9 (citing Akl Rept., App. C at 1-2).).

Hytera defends its methodology by saying that Motorola's own Dr. Wicker's expert report uses the same methodology that Motorola criticizes. Moreover, Hytera says that Motorola deposed Dr. Akl for more than eight (8) hours and had ample opportunity to explore Dr. Akl's obviousness combinations. (*Id.* at 9.). Hytera notes that it disclosed its obviousness combinations in its Pre-hearing brief and Pre-hearing Statement as follows:

Claim	Combination (§ 103)	Combination (§ 103)	Combination (§ 103)
Claim 6	<i>Barnes</i> in combination with: <i>Long, Ito, Weinstein,</i> or <i>ETSI</i> .	<i>TETRA</i> in combination with: <i>Long, Weinstein,</i> or <i>ETSI</i> .	<i>Ito</i> in combination with <i>ETSI</i> .
Claim 9	<i>Barnes</i> in combination with: <i>Janky, Long, Ito,</i> or <i>Weinstein</i> .	<i>TETRA</i> in combination with: <i>Janky, Long, Ito,</i> or <i>Weinstein</i> .	<i>Ito</i> in combination with <i>ETSI</i> .
Claim 13	<i>Barnes</i> in combination with: <i>Janky, Long, Ito,</i> or <i>Weinstein</i> .	<i>TETRA</i> in combination with: <i>Janky, Long, Ito,</i> or <i>Weinstein</i> .	<i>Ito</i> in combination with <i>ETSI</i> .
Claim 14	<i>Barnes</i> in combination with: <i>Janky, Long, Ito,</i> <i>Weinstein,</i> or <i>ETSI</i> .	<i>TETRA</i> in combination with: <i>Janky, Long, Ito,</i> <i>Weinstein,</i> or <i>ETSI</i> .	<i>Ito</i> in combination with <i>ETSI</i> .
Claim 15	<i>Barnes</i> in combination with: <i>Long, Ito,</i> or <i>Weinstein</i> .	<i>TETRA</i> in combination with <i>Long</i> or <i>Weinstein</i> .	<i>Ito</i> in combination with <i>ETSI</i> .

(See Hytera Respondents' Pre-hearing Brief, Ex. ID No. 631734 (Dec. 15, 2017).).

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Hytera argues that by seeking to prevent it from offering any evidence on obviousness, Motorola is actually seeking determination on the issue of invalidity for the patents at issue as an “overarching motion.” (Opp’n at 11.). Hytera says it would be prejudiced.

Hytera notes, correctly, that the same dispositive remedy that Complainant now seeks was not granted in the 1031 Investigation. (*Id.*). Hytera cites to other cases in which the ALJ only struck only portions of witness statements where the respondents failed to offer any support in an expert report, or did not prevent the litigant from relying on their obviousness combinations. (*Id.* (citing *Kinesiotherapy Devices and Components Thereof*, Inv. No. 337-TA-823, Order No. 38 at 6, 2012 WL 3634314, at *4 (Aug. 12, 2012.); *Certain Wireless Commc ’ns Base Stations and Components Thereof*, Inv. No. 337TA-871, Order No. 28 at 1-2, 2013 WL 6355748, at *1 (Nov. 21, 2013).). Hytera notes that in a 2017 case, the ALJ denied a motion to strike invalidity contentions with “millions of combinations” because it was “too draconian a remedy.” (*Id.* at 12 (citing *Certain Semiconductor Devices and Consumer Audiovisual Prods. Containing Same*, Inv. No 337-TA-1047, Order No. 33, 2017 WL 5898649, at *1, 2 (Nov. 8, 2017).).

Ultimately, Hytera hotly contests Motorola’s characterization of Hytera’s prior art, invalidity contentions as “mix and match,” and cites to pages in Dr. Clements’ and Dr. Akl’s Reports where they clearly explain their reasons for combining the prior art references.

Hytera also provides almost six (6) pages of charts that reference its experts’ prior art combinations, and where supporting explanatory information can be found with page references to each expert’s report or rebuttal report. (Opp’n at 12-18). Hytera says that Motorola “disingenuously misstates the reports of Hytera’s experts” by referencing certain statements in

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Dr. Clements' and Dr. Akl's reports where they say they explain their statements in other parts of their reports, but which Motorola failed to include. (*Id.* at 18-20.).

Finally, Hytera also counters that Motorola's arguments that Hytera is attempting "too many combinations" in too short a time available for the hearing by pointing out that Motorola's case is too large since Motorola is still pursuing five (5) patents with 16 claims. (*Id.* at 21.).

C. Discussion and Order Regarding MIL 1

As has been stated elsewhere, Motorola has maintained an unwieldy case that has caused problems since the inception of this Investigation, starting with certain overly broad discovery requests. Hytera is correct that Motorola was advised of this in the December 29, 2017 Order No. 25, Construing Certain Terms of the Asserted Claims of the patents at issue (*Markman* Claim Construction). (Doc. ID No. 632757 (Dec. 29, 2017)). Motorola also was warned of its "unwieldy" and "unworkable" case, including in a July 25, 2017 Order No. 9 at 2 n. 2; during the *Markman* Hearing on October 4, 2017 (Tr. at 34-35); and with clear observations in a November 2, 2017 Teleconference (Tr. at 8, 10, 12) in which there was much discussion that Motorola needed to trim its case.

However, the merits of Hytera's arguments with respect to Motorola did not prevent Hytera from focusing on its own critical invalidity and non-infringement defenses. Only that prior art that was sufficient to support Hytera's case that its experts could explain clearly, analytically, with reasoned discussion of comparisons and contrasts could have been selected.

Motorola's MIL No. 1 does not lack merit. Motorola's MIL 1 points out with acuity significant weaknesses in Hytera's presentation, and ultimately its case.

The various prior art combination charts reflected in this Order, without more, are not evidence. They are merely aggregations of names of prior art that might be useful if there were a

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detailed narrative about the prior art, that gives context, analysis and explanation. Even Hytera's expert witnesses offer little or no explanation or reasoning that describes the relationship of the prior art cited to the claims at issue. It is not possible now for Hytera to explain during the Hearing how or *why* the combinations of prior art invalidate Motorola's patents.

The clear message of Ground Rule 5 is that expert opinion (or any opinion) cannot rest on conclusory statements. Similarly, certain Commission Rules, such as 210.37 (a), require "that the proponent of any factual proposition shall be required to sustain the burden of proof with respect thereto." 19 CFR 210.37(c). The burden of proof rules and case precedent should signal to *every* party that charts of string citations, whether to prior art combinations or to any other type of evidence, does not *per se* constitute supportive evidence that satisfies a party's burden of proof.

Even if Motorola's assertions that Hytera's charts of combinations of prior art result in "thousands" or "millions" permutations are exaggerations and not mathematically provable, Motorola makes its point. Motorola is correct that Hytera's expert reports are largely conclusory and accompanied by charts that provide virtually no reasoning, explanation or explication. With few exceptions, Dr. Clements' and Dr. Akl's expert reports appear to be little more than paragraphs separated by topic headings that contain conclusory statements and not much more.

Hytera has similar problems with its Pre-Hearing Brief. Hytera's Pre-Hearing Brief is devoid of a single citation to any fact witness testimony, to any expert witness testimony, or to exhibits, other than to columns and lines from prior art patents that Hytera says invalidate Motorola's patents.

For example, Hytera's Pre-Hearing Brief, in Section D. "Invalidity," under 35 U.S.C. § 102, Hytera merely states that the **Barnes** prior art reference in conjunction with **Etsi, Tetra**,

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Ito and **Waitrosi**, with respect to claims 6, 9, 13 and 15 of the '284 patent invalidate Motorola's patents. That is all that Section D says. Section D consists entirely of conclusory references to certain disclosures in the patents without a citation to single supporting document, explanation or explication of how the claim specifications of the identified patents or embodiments provide *proof* that claims 6, 9, 13 or 15 of the '284 patent are invalid. (See Hytera Pre-Hr. Br. at 18-28.).

Similarly, Hytera's sole statement with respect to why a person of "ordinary skill in the art" would be motivated to use **Barnes** alone or in combination with the other prior art references, is an *ipse dixit*, conclusory statement that reiterates the proposition. (See, e.g. Hytera Pre-Hr. Br. at 25-26.). There is no reasoning, no analysis, and no explanation of any kind. There is no reference to expert reports let alone to any other supportive evidence.

The same problems exists with respect to Hytera's invalidity claims that pertain to: (1) remaining asserted claims 1, 6, 17 and 21 of the '869 patent, which Hytera says are anticipated by **Wan** and **Brennan** (Hytera Pre-Hr. Br. at 33-37); and by **Rayne, Kozlowski, Wegener, Strumhauser** and **Hoskins** (Hytera Pre-Hr. Br. at 37-44); (2) the concepts of de-keying and re-keying the base stations (with no reference to claims) as contained in the '701 patent, that were anticipated by **Kansal, Rosen, Samsung** (Hytera Pre-Hr. Br. at 52-61); (3) the remaining asserted claims 7 and 8 of the '991 patent as anticipated by **ETSI, Zak, Lindoff, Zhang, Halford** and **Yamaguchi** (Hytera Pre-Hr. Br. at 64-71); and (5) the remaining asserted claims 1, 6 and 7 of the '972 patent, as anticipated by **Mahowald, Vishlitzky, Bhattacharya, Katayanagi, Gutta, Koski, Biyan, Arbel, Short, Watterson, and Chen.**⁷

⁷ A few prior art references have been dropped. (See Hytera Respondents' Statement of Streamlined Case, Doc. ID No. 634002 (Jan. 16, 2018).).

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The examples provided above, while not all inclusive, are consistent with and representative of the remainder of Hytera's Pre-Hearing Brief. None of the passages or string citations to prior art in Hytera's Pre-Hearing Brief provide *any* references to fact witness or expert opinion testimony to explain the combinations. There are *no* narrative descriptions or explanations of what the prior art patents disclose, let alone explain *why* alone or combination the references invalidate Motorola's patents. Dr. Akl's and Dr. Clement's expert reports are similarly deficient with few exceptions.

From one perspective, there is virtually no evidence to strike from Hytera's Pre-Hearing Brief. Conclusory statements without more are typically not evidence. Dr. Akl's and Dr. Clement's expert reports generally are similarly problematic because, they too, consist of little more than conclusory statements. The "claim charts" that Hytera defends that are attached to its experts' reports are, for the most part, little more than an aggregation of factual statements that provide little or no analysis, reasoning or context.

If all of this were to be precluded as Motorola's Motion argues, this Order would, in effect, constitute a summary determination. Had Motorola argued for summary determination, that argument might well have been sustained.

It is questionable whether Hytera can present sufficient evidence to meet the 'clear and convincing' standard that Hytera must meet to prove invalidity and non-infringement. Hytera made choices about how it would present its case. Motorola chose the style of its Motion without necessarily focusing on the ultimate issues of proof.

Accordingly, while at this time, the conclusory statements contained in Hytera's Pre-Hearing Brief and expert witness reports, and any exhibits that may be admissible, will not be precluded *per se*, Hytera's evidence, such as it is, will be subject to appropriate Hearing and

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post-hearing evidentiary exceptions. However, Hytera may not provide additional explanation, explication or reasoning on the alleged invalidity of any of the remaining Asserted Patents and claims in this Investigation, whether based on obviousness or anticipation, that are not contained in Hytera's expert witness reports by Dr. Robert Akl and Dr. Clements, and in Hytera's Pre-Hearing Brief.

Similarly, Hytera may not offer additional explanation, explication or analysis of its non-infringement defense that is not contained in Hytera's expert witness reports by Dr. Robert Akl and Dr. Mark Clements, and in its Pre-Hearing Brief.

The Parties are put to their proof.

Within seven (7) business days of the date of this document, each party shall submit to the Office of the Administrative Law Judges a statement as to whether or not⁸ it seeks to have any confidential portion of this document deleted from the public version. Any party seeking redactions to the public version must submit to this Office two (2) copies of a proposed public version of this document pursuant to Ground Rule 1.10 with red brackets clearly indicating any portion asserted to contain confidential business information.

The Parties' submissions may be made by facsimile and/or hard copy by the aforementioned date. In addition, an electronic courtesy copy is required pursuant to Ground Rule 1.3.2.

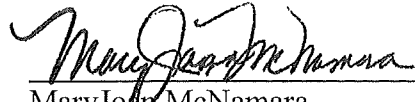
The Parties' submissions concerning the public version of this document need not be

⁸ This means that parties that do not seek to have any portion of this Order redacted are still required to submit a statement to this effect.

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filed with the Commission Secretary.

SO ORDERED.



MaryJoan McNamara
Administrative Law Judge

**CERTAIN TWO-WAY RADIO EQUIPMENT AND
SYSTEMS, RELATED SOFTWARE AND COMPONENTS
THEREOF**

Inv. No. 337-TA-1053

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **ORDER** has been served upon the following parties as indicated, on **April 16, 2018**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
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**On Behalf of Respondents Hytera Communications Corp.
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