

In the Matter of

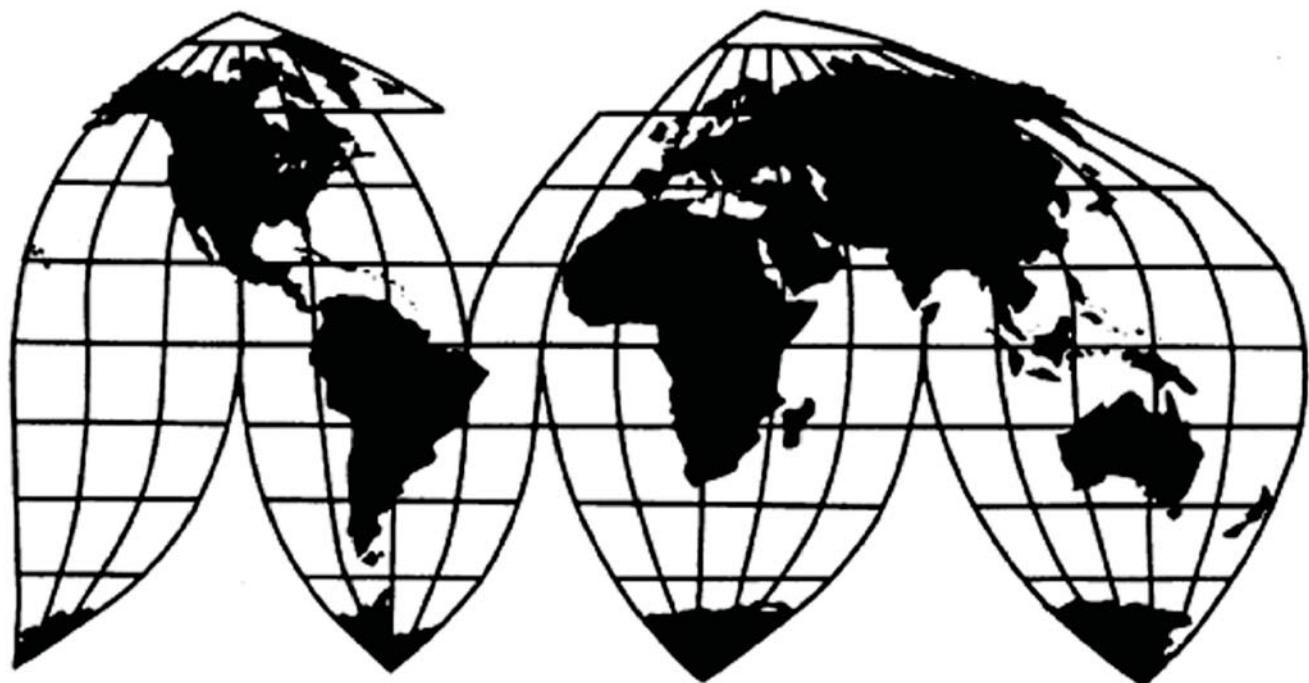
**Certain 3G Mobile Handsets and
Components Thereof**

Investigation No. 337-TA-613

Publication 4145

April 2010

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

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**CERTAIN 3G MOBILE HANDSETS
AND COMPONENTS THEREOF**

Investigation No. 337-TA-613

**NOTICE OF COMMISSION DETERMINATION TO REVIEW IN PART A FINAL
DETERMINATION FINDING NO VIOLATION OF SECTION 337 AND ON REVIEW
TO AFFIRM THE ADMINISTRATIVE LAW JUDGE'S DETERMINATION OF NO
VIOLATION; TERMINATION OF INVESTIGATION**

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 the presiding administrative law judge's ("ALJ") final initial determination ("ID") issued on August 31, 2009, finding no violation of Section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the above-captioned investigation. Specifically, the Commission has determined to review portions of the ALJ's claim construction and invalidity analysis, but to affirm the ALJ's determination of no violation, and has terminated the investigation.

FOR FURTHER INFORMATION CONTACT: Megan M. Valentine, Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 708-2301. 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, S.W., Washington, D.C. 20436, telephone (202) 205-2000. General information concerning the Commission may also be obtained by accessing its Internet server at <http://www.usitc.gov>. The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at <http://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 Inv. No. 337-TA-613 on September 11, 2007, based on a complaint filed by InterDigital Communications Corp. of King of Prussia, Pennsylvania and InterDigital Technology Corp. of Wilmington, Delaware (collectively, "InterDigital") on August 7, 2007. The complaint, as amended, alleged violations of Section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain 3G mobile handsets and components by reason of infringement of certain claims of U.S. Patent Nos. 7,117,004 ("the

‘004 patent”); 7,190,966 (“the ‘966 patent”); and 7,286,847 (“the ‘847 patent”) (“the Power Ramp-Up Patents); and 6,693,579 (“the ‘579 patent). The notice of investigation named Nokia Corporation of Finland and Nokia Inc. of Irving, Texas (collectively, “Nokia”) as respondents.

On August 14, 2009, the ALJ issued his final ID, finding no violation of Section 337. In particular, he found that the asserted claims of the patents-in-suit are not infringed and that they are not invalid. The ALJ further found that a domestic industry exists with respect to the patents-in-suit. Additionally, the ALJ found that there is no prosecution laches relating to the ‘004, ‘966, and ‘847 patents and that the ‘579 patent is enforceable. The ALJ further found that there is no waiver and patent misuse with respect to the patents-in-suit. The ALJ also issued a Recommended Determination on remedy and bonding, recommending that, in the event a violation of Section 337 is found, the appropriate remedy is a limited exclusion order barring entry of infringing 3G mobile handsets and components thereof and that it would also be appropriate to issue various cease and desist orders. The ALJ also recommended that there is no evidence to support the issuance of a bond during the period of Presidential review.

On August 31, 2009, InterDigital filed a petition for review, challenging certain aspects of the final ID, and Nokia filed a contingent petition for review, challenging other aspects of the final ID. On September 8, 2009, Nokia filed a response to InterDigital’s petition for review, and InterDigital filed a response to Nokia’s contingent petition for review. The Commission investigative attorney filed a joint response to both InterDigital’s and Nokia’s petitions on September 8, 2009.

Having examined the record of this investigation, including the ALJ’s final ID, the petitions for review, and the responses thereto, the Commission has determined to review the subject ID in part. Specifically, the Commission has determined to review the ALJ’s claim construction of the terms “synchronize,” found in claims 5, 6, 9, and 11 of the ‘847 patent, and “access signal,” found in claim 59 of the ‘004 patent and claims 6, 9, and 11 of the ‘847 patent. The Commission has also determined to review the ALJ’s validity determinations with respect to the four asserted patents. On review, we affirm the ALJ’s determination of no violation, but take no position with regard to the term “synchronize” and validity.

In addition, the Commission modifies the ALJ’s construction of “access signal” to clarify that his construction does not read out the situation where the “access signal” may continue to be transmitted after the power ramp-up procedure ends. The ID limits the transmission of the “access signal” to the power ramp-up procedure, finding the transmission does not continue during the remainder of the call setup process. The Commission agrees that the “access signal” is transmitted during the power ramp-up procedure and that the “access signal” is a separate transmission from any other call set up messages that a subscriber unit pursuant to the Power Ramp-Up Patents transmits to a base station during a communication event. The Commission finds, however, that the ‘004 and ‘847 patents do not require that the transmission of the “access signal” ends when the power ramp-up procedure ends.

The Commission has determined not to review the remaining issues decided in the ID.

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 section 210.42 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.42).

By order of the Commission.

A handwritten signature in black ink, appearing to read "Marilyn Abbott".

Marilyn R. Abbott
Secretary to the Commission

Issued: October 16, 2009

**CERTAIN 3G MOBILE HANDSETS AND COMPONENTS
THEREOF**

337-TA-613

CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **NOTICE OF COMMISSION DETERMINATION TO REVIEW IN PART A FINAL DETERMINATION FINDING NO VIOLATION OF SECTION 337 AND ON REVIEW TO AFFIRM THE ADMINISTRATIVE LAW JUDGE'S DETERMINATION OF NO VIOLATION; TERMINATION OF INVESTIGATION** has been served by hand upon the Commission Investigative Attorney, Benjamin Levi Esq., and the following parties as indicated, on **October 19, 2009.**


Marilyn R. Abbott, Secretary *JNL*
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() Via Overnight Mail
() Via First Class Mail
() Other: _____

PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of)
)
)
CERTAIN 3G MOBILE HANDSETS AND) Investigation No. 337-TA-613
COMPONENTS)
)

Final Initial and Recommended Determinations

This is the administrative law judge's Final Initial Determination under Commission rule 210.42. The administrative law judge, after a review of the record developed, finds *inter alia* that there is jurisdiction and that there is no violation of section 337 of the Tariff Act of 1930, as amended.

This is also the administrative law judge's Recommended Determination on remedy and bonding, pursuant to Commission rules 210.36(a) and 210.42(a)(1)(ii). Should the Commission find a violation, the administrative law judge recommends the issuance of a limited exclusion order barring entry into the United States of infringing 3G mobile handsets and components thereof as well as the issuance of appropriate cease and desist orders. The imposition of any bond during the Presidential Review period is not recommended.

APPEARANCES

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ABBREVIATIONS

ALJ-Ex.	Administrative Law Judge's Exhibit
CBr	Complainants' Post-hearing Brief
CDX	Complainants' Demonstrative Exhibit
CFF	Complainants' Proposed Finding
CORFF	Complainants' Objection To Respondents' Proposed Finding
COSFF	Complainants' Objection To Staff's Proposed Finding
CRBr	Complainants' Post-hearing Reply Brief
CRRFF	Complainants' Proposed Rebuttal Finding to RFF
CX	Complainants' Exhibit
JX	Joint Exhibit
RBr	Respondents' Post-hearing Brief
RDX	Respondents' Demonstrative Exhibit
RX	Respondents' Exhibit
RFF	Respondents' Proposed Finding
ROcff	Respondents' Objection To Complainants' Proposed Finding
RRBr	Respondents' Post-hearing Reply Brief
RCFF	Respondents' Proposed Rebuttal Finding To CFF
SBr	Staff's Post-hearing Brief
SOCFF	Staff's Objection To Complainants' Proposed Finding
SRBr	Staff's Post-hearing Reply Brief
SRCFF	Staff's Proposed Rebuttal Finding To CFF
SX	Staff's Exhibit
SPFF	Staff's Proposed Finding

Tr.

Transcript Of Pre-hearing Conference and Hearing

OPINION

I. Procedural History

Complainants InterDigital Communications, LLC and InterDigital Technology Corporation (InterDigital) filed a complaint against respondents Nokia Corporation and Nokia Inc. (Nokia) on August 7, 2008, and said investigation was instituted on September 11, 2007, with the scope of investigation limited to U.S. Patent Nos. 7,117,004 ('004 patent) and 7,190,966 ('966 patent). See Notice of Investigation, Inv. No. 337-TA-613, 72 Fed. Reg. 51838. Order No. 3 (unreviewed) which issued on October 11, 2007 added U.S. Patent No. 6,973,579 (the '579 patent). In Order No. 4, which issued on October 11, 2007, the administrative law judge set a fifteen month target date of December 11, 2008, which meant that any final initial determination should be filed by September 11, 2008.

On October 5, 2007, the Nokia respondents moved to consolidate Inv. No. 337-TA-601¹ and this investigation (Inv. No. 337-TA-613) based on alleged efficiencies that would result from consolidation and the "prejudice" Nokia would suffer if Inv. No. 337-TA-601 were to proceed without Nokia's ability to participate. The Samsung respondents in Inv. No. 337-TA-601 filed a similar motion several days later. After lengthy arguments at a preliminary conference in the 613 investigation, the administrative law judge consolidated the two investigations. See Order Nos. 5 (Inv. No. 337-TA-613) and 11 (Inv. No. 337-TA-601) (both issued on October 24, 2007).

On November 9, 2007, Order No. 9 (unreviewed), which added U.S. Patent No. 7,286,847 ('847 patent), issued.

¹ Complainants had filed an initial complaint in Inv. No. 337-TA-601 against Samsung Electronics America, Inc., Samsung Telecommunications America, LLC, and Samsung Electronics Co., Ltd. (Samsung), on March 23, 2007, and this investigation was instituted on April 27, 2007. See Notice of Investigation, Inv. No. 337-TA-601, 72 Fed. Reg. 21049. Order No. 29, which issued on February 6, 2009 in the 601 investigation granted a joint motion to terminate Inv. No. 337-TA-601 in its entirety based on a settlement agreement (non-review on February 24, 2009.)

On December 4, 2007, approximately six weeks after the administrative law judge consolidated Inv. No. 337-TA-601 and Inv. No. 337-TA-613, Nokia moved to terminate or stay the consolidated investigation as to Nokia, based on an alleged right to arbitrate a license defense. The administrative law judge thereafter denied said motion of Nokia. Nokia then filed a complaint in the U.S. District Court for the Southern District of New York and simultaneously sought a preliminary injunction to prevent InterDigital from proceeding against Nokia at the Commission based on the same alleged arbitration right previously rejected by the administrative law judge. District Court Judge Deborah Batts thereafter granted Nokia's requested preliminary injunction and issued an order requiring InterDigital to file a motion to stay the consolidated investigation against Nokia by April 11, 2008, and thereafter requiring InterDigital to take no action against Nokia with respect to InterDigital's infringement allegations in the consolidation investigation. In compliance with Judge Batts' order, InterDigital filed Motion No. 613-60 to stay the consolidated investigation as to Nokia on April 11.

Order No. 31, which issued on April 14, 2008, suspended an April 21, 2008 date for commencement of the evidentiary hearing in the consolidated investigation. Order No. 33, which issued on May 16, 2008 granted complainants' Motion No. 613-62 to separate previously consolidated Inv. No. 337-TA-601 and 337-TA-613 and further granted complainants' Motion No. 613-60 to stay the portion of the consolidated investigation relating to Nokia, viz. 337-TA-613.

Order No. 36 which issued on September 25, 2008, lifted the stay of complainants in 337-TA-613 imposed by Order No. 33. Order No. 37, which issued on October 7, 2008, set hearing dates of May 26, 27, 28 and 29, 2009. Order No. 38, which issued on October 10, 2008, set a target date of December 14, 2009 which meant that any final initial determination on violation

should be filed no later than August 14, 2009.

Order No. 42 which issued on March 10, 2009, granted complainants' Motion No. 601-71 that complainants' licensing activities in the United States satisfied the domestic industry requirement of 19 U.S.C. § 1737(a)(3)(c). The Commission on April 9, 2009, determined not to review said order.

At the prehearing conference, the administrative law judge denied complainants' Motion No. 613-82 to compel Nokia to produce certain licenses. (Tr. at 38.) He also denied in part Nokia's Motion In Limine No. 613-82 regarding a Lucas reference and reserved a ruling as to admissibility of evidence as it relates to said motion and complainants' Motion In Limine No. 613-78. (Tr. at 39-42.)

An evidentiary hearing in this investigation was held on May 26, 27, 28, 29 and June 2. In issue, inter alia were alleged infringement of claims 1, 2, 31 and 59 of the '004 patent, claims 1, 3, 8, 9 and 11 of the '966 patent and claims 5, 6, 9 and 11 of the '847 patent as well as alleged infringement of claims 1, 3 and 4 of the '579 patent.

The matter is now ready for a final decision.

The Final Initial and Recommended Determinations are based on the record compiled at the hearing and the exhibits admitted into evidence. The administrative law judge has also taken into account his observation of the witnesses who appeared before him during the hearing. Proposed findings of fact submitted by the parties not herein adopted, in the form submitted or in substance, are rejected as either not supported by the evidence or as involving immaterial matters and/or as irrelevant. Certain findings of fact included herein have references to supporting evidence in the record. Such references are intended to serve as guides to the testimony and exhibits supporting the finding of fact. They do not necessarily represent complete summaries of

the evidence supporting said findings.

II. Jurisdiction Including Parties And Importation

The private parties in this investigation are identified in the findings. See FF-1-8 in Section X, infra. Nokia acknowledges that the respondents have “imported various models of the accused products into the United States and that InterDigital has alleged infringement of its patents by these products.” (SPFF II.1 (undisputed).) Nokia and InterDigital have also stipulated that:

1. Nokia employees have used the N-75, N-95, 6555, 6750 and 6350 handsets, which are manufactured by Nokia, to initiate phone calls in a 3G WCDMA network within the United States, since October 23, 2007, the date InterDigital moved in this matter to file its Second Amended Complaint.
2. Nokia has imported into the United States the N-75, N-95, 6555, 6750 and 6350 handsets.
3. Nokia has imported additional handsets into the United States, which handsets have the capability of operating in a 3G WCDMA network. These handsets include N-95-8GB, E66, E71, N78, 6650, 6690, 3555, N83, N79 and 6263.

(SX-2.) Moreover Nokia acknowledges that “the Commission has subject matter jurisdiction [over] this investigation. (SPFF II.3 (undisputed).) In addition, the Commission has personal jurisdiction over said respondents in this investigation because said respondents have participated fully in said investigation, including participation in discovery and motion practice. See Certain Audible Alarm Devices For Divers, Inv. No. 337-TA-365, Initial Determination, 1995 ITC LEXIS 66 at *3 (Feb. 2, 1995).

III. The Products In Issue

The accused Nokia handset models that InterDigital accuses of infringement of the power

ramp-up patents include the Nokia model numbers identified in Section II supra.

With specific regard to the ‘579 patent, InterDigital accuses Nokia handsets that utilize the{ } (SPFF 1.9, CFF 3.9 (all (undisputed).))

IV. The Power Ramp-Up Patents (‘004, ‘966 And ‘847 Patents)

The ‘004 patent in issue is titled “Method and Subscriber Unit for Performing an Access Procedure.” (CX-1 at ITC-COMP00005644.) The ‘004 patent issued on October 3, 2006. (CX-1 at ITC-COMP00005644.) The inventors of the ‘004 patent are Gary Lomp and Fatih Ozluturk. (CX-1 at ITC-COMP00005644.) The ‘004 patent is based on Patent Application Serial No. 10/866,851 filed on June 14, 2004. (CX-1 at ITC-COMP00005644.) The ‘004 patent claims priority to Application No. 08/670,162, which was filed on June 27, 1996, and matured into U.S. Patent No. 5,841,768. (CX-1 at ITC-COMP00005644.) The ‘004 patent has 18 independent claims and 48 dependent claims. (CX-1 at ITC-COMP00005661 - ITC-COMP00005665.) InterDigital is the owner by assignment of the entire right, title, and interest in and to the ‘004 patent. (CX-6.)

The ‘966 patent in issue is titled “Method and Apparatus for Performing an Access Procedure.” (CX-2 at ITC-COMP00016933.) The ‘966 patent issued on March 13, 2007. (CX-2 at ITC-COMP00016933.) The named inventors on the ‘966 patent are Gary Lomp and Fatih Ozluturk. (CX-2 at ITC-COMP00016933.) The ‘966 patent is based on Patent Application Serial No. 11/169,490 filed on June 29, 2005. (CX-2 at ITC-COMP00016933.) The ‘966 patent claims priority to Application No. 08/670,162, which was filed on June 27, 1996, and matured into U.S. Patent No. 5,841,768. (CX-2 at ITC-COMP00016933.) The ‘966 patent resulted from a continuation of the application that led to the asserted ‘004 patent. (CX-2 at

ITC-COMP00016933.) The ‘966 patent has 1 independent claim and 11 dependent claims. (CX-2 at ITC-COMP00016950 - ITC-COMP00016951.) InterDigital is the owner by assignment of the entire right, title, and interest in and to the ‘966 patent. (CX-6.)

The ‘847 patent is titled “Method and Apparatus for Performing an Access Procedure.” (CX-3 at ITC-COMP00021139.) The ‘847 patent issued on October 23, 2007. (CX-3 at ITC-COMP00021139.) The named inventors on the ‘847 patent are Fatih Ozluturk and Gary Lomp. (CX-3 at ITC-COMP00021139.) The ‘847 patent is based on Patent Application Serial No. 11/169,425 filed on June 29, 2005. (CX-3 at ITC-COMP00021139.) The ‘847 patent claims priority to Application No. 08/670,162, which was filed on June 27, 1996, and matured into U.S. Patent No. 5,841,768. (CX-3 at ITC-COMP00021139.) The ‘847 patent resulted from a continuation of the application that led to the asserted ‘004 patent. (CX-3 at ITC-COMP00021139.) The ‘847 patent has 11 independent claims and 0 dependent claims. (CX-3 at ITC-COMP00021157 - ITC-COMP00021160.) InterDigital is the owner by assignment of the entire right, title, and interest in and to the ‘847 patent. (CX-6.)

Each of the power ramp-up patents, viz., the ‘004 patent (CX-1), the ‘966 patent (CX-2), and the ‘847 patent (CX-3), share a common specification, and said common specification discloses an initial access procedure for a CDMA (Code Division Multiple Access) system. (CFF 2.84, 2.85 (undisputed).)² Thus, each of the applications for the ‘966 and ‘847 patents, viz.

² The administrative law judge will cite to only the ‘004 patent, CX-1, when referencing the common specification. Moreover the administrative law judge will refer to the ‘004, ‘966 and ‘847 patent as the power ramp-up patents. Complainants refer to said patents as the power ramp-up patents. (e.g., CBr at 18.) Neither the respondents nor the staff have objected to that designation. Also respondents’ expert Lanning has referred to said three patents as the power ramp-up patents. (Tr. at 1606-07.)

Application Ser. Nos. 11/169,490 and 11/169,425, are continuations of the application for the '004 patent, application Ser. No. 10/866,851. (CX-2 at ITC-COMP00016933; CX-3 at ITC-COMP00021139.) Each of the three power ramp-up patents list InterDigital Technology Corporation, Wilmington, DE (US) as the Assignee. (CX-1 at ITC-COMP00005644; CX-2 at ITC-COMP00016933; CX-3 at ITC-COMP00021139.) For the purpose of claim construction, the parties have treated the power ramp-up patents collectively. (See, generally, CBr at 30-56; RBr at Sec. II, p. 2 to Sec. II, p. 20; SBr at 7-35.) The administrative law judge in his "Claim Construction" infra has done the same.

A. Undisputed Facts

Pursuant to a joint stipulation of the private parties, the following has been stipulated to as an overview of the technology involved in this investigation as the technology relates to the power ramp-up patents, viz. the '004, '966 and '847 patents in issue.

1. A typical cellular system (network) architecture consists of many separate transmission and reception areas referred to as cells. Each cell has a base station (BS) that is capable of communicating with many mobiles in its radio coverage area. A mobile is sometimes referred to as a mobile phone, user equipment (UE), cell phone, handset, or subscriber unit (SU).
2. A cellular system uses predefined radio frequency bands that are shared by all base stations and mobiles. There are a number of technical methods that are used to provide simultaneous access by all the base stations and the mobiles in each allocated frequency band. These methods are known as multiple access. The multiple access (MA) method used in the '004 Patent Family is Code Division Multiple Access (CDMA) which means that different codes are used by the base stations and mobiles to define the different system channels to be used for control and communication. See 1:24-25; 151-58; 1:66-67 and 2:11-16.
3. Mobile phones commonly move to different locations in a

cellular system and must be able to communicate with any BS in a cellular system. Therefore, cellular systems have a number of basic procedures that are used by a mobile to synchronize with a local base station, notify it of its existence and to receive and originate calls. The applicable procedures include synchronization, random access, and channel assignment.

4. After being powered up, a mobile must synchronize to a reference signal transmitted from a BS in order to receive signals from the BS and allow the BS to receive the signals sent by the mobile. See 5:13-15; 5:57-59. A mobile synchronizes to a specific BS by aligning its receiver with at least one reference signal that is transmitted by the BS. See 5:54-59; 5:13-15; 7:54-57; Fig. 6A (step 150).

5. Mobiles wishing to originate or receive a call must first be detected by the BS. Mobiles are detected by a specific BS when the mobile performs a random access procedure.

6. The transmission power of the mobile causes interference to other mobiles and base stations. See 2:17-18; 2:21-26. Greater transmission power is required the further the mobile is from the base station. Id. Also, greater transmission power may be required to overcome interference from other users, noise, or other channel characteristics. 2:39-42.

7. Power control is important for a CDMA system because all transmissions use the same frequency band such that each transmission is interference (noise) to the other transmissions. 2:15-18; 5:62-63. A power level that is too high causes excess interference with other users and may disrupt communications. 2:44-48; 5:63-65. A power level that is too low will not be detected by the base station. 2:48-50; 5:65-67.

8. Power overshoot occurs when the transmit power of a mobile exceeds the power level necessary for detection by the BS. 7:26-34; Figs. 5 and 7 (showing overshoot above detection level).

(SX-4 at 1-2 (emphasis added).)

B. Experts

Branimir Vojcic was qualified as complainants' expert in the field of wireless

communications and CDMA. (Tr. at 286-87.)

Mark Lanning was qualified as respondents' expert in cellular network architecture, handset operation and architecture and mobile telephony. (Tr. at 1567-68.)

Steve Kinney was qualified as respondents' expert in the field of mobile telephony and mobile cellular communications. (Tr. at 1741.)

C. Person Of Ordinary Skill In The Art

Vojcic testified that the level of ordinary skill in the field of CDMA and wireless communications during the time period from 1996 to the present would be a Bachelor's of Science degree in electrical engineering with four to five years of experience. (Tr. at 287-8.)

Lanning and Kenney testified that the person of ordinary skill in the art is a person with a Bachelor's or Master's level degree in electrical engineering, computer science, or mathematics with four years of experience in telecommunications, with two years of that experience being in the field of CDMA communications. (Tr. at 1715-1716, 1770.) Kenney also testified that the person of ordinary skill in the art could also be a person with a Ph.D. in electrical engineering or a relate field one year of experience in CDMA communications. (Tr. at 1770.)

Based on the record from the evidentiary hearing including the testimony of the experts the administrative law judge finds that the person of ordinary skill in the art for the power ramp-up patents at the time of their filing would have at least a Bachelor's degree in electrical engineering, computer science or mathematics with some working experience in CDMA communications, the amount of said experience dependent on the degree said person has.

D. Claims In Issue

Asserted claims 1, 2, 31 and 59 of the '004 patent read:

1. A method for performing power control in a wireless code division multiple access communication system, the method comprising: transmitting dynamically selected code signals at increasing power levels until an acknowledgement is received indicating that one of said dynamically selected code signals was detected, wherein the transmitted dynamically selected code signals carry no data; and in response to detecting the acknowledgement, transmitting an access signal wherein the access signal is associated with the dynamically selected code signals and each of the dynamically selected code signals are shorter than the access signal.
2. A wireless code division multiple access subscriber unit, the subscriber unit comprising: a transmitter configured such that a first code is transmitted at an initial power level wherein the first code is of a first code type and the transmitter further configured to repeatedly transmit dynamically selected codes of said first code type at increasing power levels wherein the transmitted codes of said first code type carry no data; a receiver configured such that an acknowledgement is detected indicating a code of said first type was received; and the transmitter configured such that in response to detecting the acknowledgement, a signal having a second code is transmitted to access a communication channel wherein the second code is associated with the first code.

31. The method of claim 30³ wherein said code of a first type is a

³ Unasserted claim 30, from which asserted claim 31 depends, reads:

A method performed by a code division multiple access subscriber unit for establishing communications between the subscriber unit and a base station, the method comprising:
(a) transmitting a code of a first type, wherein the code of the first type does not include data of the subscriber unit;
(b) determining if the subscriber unit has received an acknowledgement signal from the base station, the acknowledgement signal being an indication to the subscriber unit that the base station has received a code of the first type;
(c) repeating (a) at increasing power levels until the subscriber unit has received the acknowledgement signal; and
(d) transmitting a code of a second type after it is determined that the subscriber unit has received the acknowledgement signal.

dynamically selected code associated with said code of a second type.

59. A subscriber unit for performing an access procedure for establishing communications between said subscriber unit and a base station, said subscriber unit comprising: a processor configured to control a transmitter such that the transmitter transmits a first one of a plurality of different codes by said subscriber unit to said base station; a receiver configured to receive an acknowledgement wherein if said acknowledgement is not received, the processor configured to control the transmitter such that the transmitter transmits another one of the plurality of different codes by said subscriber unit to said base station; the processor configured to control said transmitter such that said transmitter repeats the transmitting of another one of the plurality of different codes until said acknowledgement is received by said subscriber unit from said base station, said acknowledgement indicating to said subscriber unit that said base station has received at least one of said different codes; and said processor configured to control the transmitter such that the transmitter transmits, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit and said different codes as transmitted by said subscriber unit each being a function of a same code.

(CX-1 at 10:62-11:24, 14:27-29, 16:65-17:25.)

Asserted claims 1, 3, 8, 9 and 11 of the '966 patent read:

1. A wireless code division multiple access (CDMA) subscriber unit comprising: a transmitter configured such that, when the subscriber unit is first accessing a CDMA network and wants to establish communications with a base station associated with the network over a communication channel to be indicated by the base station, the transmitter successively transmits signals until the subscriber unit receives from the base station an indication that a transmitted one of the signals has been detected by the base station, wherein each transmission of one of the signals by the transmitter is at an increased power level with respect to a prior transmission of one of the signals; the transmitter further configured such that

(CX-1 at 14:8-26.)

the transmitter transmits to the base station a message indicating to the base station that the subscriber unit wants to establish the communications with the base station over the communication channel to be indicated by the base station, the message being transmitted only subsequent to the subscriber unit receiving the indication, wherein each of the successively transmitted signals and the message are generated using a same code; and wherein each of the successively transmitted signals is shorter than the message.

3. The subscriber unit of claim 1 wherein some of the transmitted signals are different.

8. The subscriber unit of claim 1 wherein the transmitter is further configured to transmit the signals such that there is a uniform decibel power level increase between the successively transmitted signals.

9. The subscriber unit of claim 1 wherein the communication channel is indicated by the base station in response to the message.

11. The subscriber unit of claim 1 wherein the transmitter is further configured such that, subsequent to the subscriber unit receiving the indication, the transmitter transmits a message uniquely identifying the subscriber unit to the base station.

(CX-2 at 10:62-11:19, 11:22-23, 12:8-14, 12:17-21.)

Asserted claims 5, 6, 9 and 11 of the '847 patent read:

5. A wireless code division multiple access (CDMA) subscriber unit comprising: a circuit configured to receive and down convert radio frequency signals to produce baseband signals, the baseband signals including a pilot signal and a paging message, the paging message being associated with the subscriber unit, wherein the circuit is further configured to synchronize to the pilot signal and demodulate the paging message; and a transmitter configured such that, when the subscriber unit is first accessing a CDMA network and wants to establish communications with a base station associated with the network over a communication channel to be indicated by the base station, the transmitter successively transmits signals until the subscriber unit receives from the base station an indication that a transmitted one of the signals has been detected by the base station, wherein each transmission of one of the signals by the transmitter, other than a transmission of a first one of the

signals, is at an increased power level with respect to a prior transmission of another one of the signals; the transmitter further configured such that the transmitter transmits to the base station a message indicating to the base station that the subscriber unit wants to establish the communications with the base station over the communication channel to be indicated by the base station, the message being transmitted only subsequent to the subscriber unit receiving the indication, wherein the successively transmitted signals and the message are generated using a same code.

6. A method for use in a code division multiple access subscriber unit for establishing communications between said subscriber unit and a base station, said method comprising: synchronizing to a pilot signal transmitted by said base station; after said synchronizing to the pilot signal, transmitting a plurality of different codes by said subscriber unit to said base station wherein each one of the plurality of different codes, other than a first one of the plurality of different codes, is transmitted at an increased power level with respect to a prior transmission of another one of the plurality of different codes; receiving an acknowledgement by said subscriber unit from said base station and ceasing transmitting the plurality of different codes, said acknowledgement indicating to said subscriber unit that said base station has received at least one of said plurality of different codes; and transmitting, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit, and said plurality of different codes, as transmitted by said subscriber unit, being a function of a same code.

9. A method for use in a code division multiple access subscriber unit for establishing communications between said subscriber unit and a base station, said method comprising: (a) receiving radio frequency signals; (b) down converting the received radio frequency signals to produce baseband signals, the baseband signals include a pilot signal and a paging message, the paging message being associated with the subscriber unit; (c) synchronizing to the pilot signal; (d) demodulating the paging message; (e) after said demodulating the paging message and said synchronizing to the pilot signal, transmitting a first one of a plurality of different codes by said subscriber unit to said base station; (f) if an acknowledgement is not received, transmitting another one of the plurality of different codes by said subscriber

unit to said base station; (g) repeating step (f) until an acknowledgement is received by said subscriber unit from said base station, said acknowledgement indicating to said subscriber unit that said base station has received at least one of said different codes; and (h) transmitting, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal, as transmitted by said subscriber unit, and said different codes, as transmitted by said subscriber unit, being a function of a same code.

11. A subscriber unit for performing an access procedure for establishing communications between said subscriber unit and a base station, said subscriber unit comprising: a circuit configured to synchronize to a pilot signal transmitted by the base station wherein, the circuit is further configured to re-synchronize to the pilot signal if the subscriber unit becomes unsynchronized to the pilot signal during an idle period; a processor configured to control a transmitter such that the transmitter transmits a first one of a plurality of different codes by said subscriber unit to said base station; a receiver configured to receive an acknowledgement wherein if said acknowledgement is not received, the processor is configured to control the transmitter such that the transmitter transmits another one of the plurality of different codes by said subscriber unit to said base station; the processor configured to control said transmitter such that said transmitter repeats the transmitting of another one of the plurality of different codes until said acknowledgement is received by said subscriber unit from said base station, said acknowledgement [sic] indicating to said subscriber unit that said base station has received at least one of said different codes; and said processor further configured to control the transmitter such that the transmitter transmits, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit, and said plurality of different codes, as transmitted by said subscriber unit, being a function of a same code.

(CX-3 at 12:31-13:23, 14:7-36, 14:65-16:14.)

E. Claim Construction

Claim construction is a question of law. Markman v. Westview Instruments, Inc., 52 F.3d

967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996) (Markman); see Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455 (Fed. Cir. 1998). In construing claims, a court should look to intrinsic evidence consisting of the language of the claims, the specification and the prosecution history as it "is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (Vitronics); see Bell Atl. Network Servs., Inc. v. Covad Commc'n Group, Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and, when necessary, to explain what the patentee covered by the claims" See U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997).

The claims themselves "provide substantial guidance as to the meaning of particular claim terms." Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (Phillips), citing Vitronics, 90 F.3d at 1582. It is essential to consider a claim as a whole when construing each term, because the context in which a term is used in a claim "can be highly instructive." Id. In construing claims, the administrative law judge should first look "to the words of the claims themselves . . . to define the scope of the patented invention." Vitronics, 90 F.3d at 1582; see generally Phillips, 415 F.3d at 1312-13. Claim terms "are generally given their ordinary and accustomed meaning." Vitronics, 90 F.3d at 1582. Moreover, each term of a claim should be given its own meaning. See Merck & Co. v. Teva Pharm., USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005), cert. denied 546 U.S. 972 (2005). (Merck & Co.) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.").

In Pause Technology, Inc. v. T.V., Inc., 419 F.3d 1326 (Fed. Cir. 2005) the Court stated:

. . . in clarifying the meaning of claim terms, courts are free to use

words that do not appear in the claim so long as “the resulting claim interpretation . . . accord[s] with the words chosen by the patentee to stake out the boundary of the claimed property.” Cf. Renishaw PLC v. Marposs Societá per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998) (noting that “[w]ithout any claim term susceptible to clarification . . . there is no legitimate way to narrow the property right”).

Id. at 1333. Also, claim terms are presumed to be used consistently throughout the patent, such that the usage of the term in one claim can often illuminate the meaning of the same term in other claims. Research Plastics, Inc. v. Federal Packaging Corp., 421 F.3d 1290, 1295 (Fed. Cir. 2005) (Research Plastics).

The ordinary meaning of a claim term may be determined by reviewing a variety of sources, which may include the claims themselves, dictionaries and treatises, the written description, the drawings and the prosecution history. Ferguson Beauregard/Logic Controls v. Mega Sys., LLC, 350 F.3d 1327, 1338 (Fed. Cir. 2003). “Dictionaries...are often useful to assist in understanding the commonly understood meaning of words and have been used both by our court and the Supreme Court in claim interpretation.” Phillips, 415 F.3d at 1322. The use of a dictionary, however, may extend patent protection beyond what should properly be afforded by a patent. Also, there is no guarantee that a term is used in the same way in a treatise as it would be by a patentee. Id. Moreover, the presumption of ordinary meaning will be “rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1091 (Fed. Cir. 2003).

The presence of a specific limitation in a dependent claim raises a presumption that the limitation is not present in the independent claim. Phillips, 415 F.3d at 1315. This presumption

is especially strong when the only difference between the independent and dependent claims is the limitation in dispute. SunRace Roots Enter. Co., Ltd. v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003). Moreover, “claim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous.” AllVoice Computing PLC v. Nuance Commc’ns, Inc., 504 F.3d 1236, 2007 U.S. App. LEXIS 23949, at *23 (Fed. Cir. 2007). In addition, a claim construction that gives meaning to all the terms of a claim is preferred over one that does not do so. See Merck & Co. 395 F.3d at 1372; Alza Corp. v. Mylan Labs. Inc., 391 F.3d 1365, 1370 (Fed. Cir. 2004) (Alza) (affirming the district court’s rejection of both parties’ claim construction where those constructions meant that “the inclusion of the word ‘base’ in the claims would be redundant”). Differences between the claims are helpful in understanding the meaning of claim terms. Phillips, 415 F.3d at 1314.

The preamble of a claim may be significant in interpreting a claim. Thus, “a claim preamble has the import that the claim as a whole suggests for it.” Bell Commc’ns Research, Inc. v. Vitalink Commc’ns Corp., 55 F.3d 615, 620, 34 U.S.P.Q.2d 1816, 1820 (Fed. Cir. 1995). If said preamble, when read in the context of an entire claim, recites limitations of the claim, or if the claim preamble is “necessary to give life, meaning, and vitality” to the claim, then the claim preamble should be construed as if in the balance of the claim. Kropa v. Robie, 187 F.2d 150, 152 (CCPA 1951) (Kropa); see also Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997) (Rowe); Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989) (Corning Glass). Indeed, when discussing the “claim” in such a circumstance, there is no meaningful distinction to be drawn between the claim preamble and the rest of the claim, for only together do they comprise the “claim.” If, however, the body of the claim fully and intrinsically

sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention's limitations, but rather merely states, for example, the purpose or intended use of the invention, then the preamble may have no significance to claim construction because it cannot be said to constitute or explain a claim limitation. See Rowe, 112 F.3d at 478; Corning Glass, 868 F.2d at 1257; Kropa, 187 F.2d at 152.

In Pitney Bowes Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1306 (Fed. Cir. 1999) (Pitney Bowes), the preamble statement that the patent claimed a method of or apparatus for "producing on a photoreceptor an image of generated shapes made up of spots" was not merely a statement describing the invention's intended field of use. Instead, the Court found that said statement was intimately meshed with the ensuing language in the claim; and that, for example, both independent claims concluded with the clause "whereby the appearance of smoothed edges are given to the generated shapes." Id. Because this was the first appearance in the claim body of the term "generated shapes," the Court found that the term could only be understood in the context of the preamble statement "producing on a photoreceptor an image of generated shapes made up of spots." Id. Similarly, the Court found that the term "spots" was initially used in the preamble to refer to the elements that made up the image of generated shapes that were produced on the photoreceptor; that the term "spots" then appeared twice in each of the independent claims; and that the claim term "spots" referred to the components that together made up the images of generated shapes on the photoreceptor and was only discernible from the claim preamble. Id. The Court concluded that in such a case, it was essential that the preamble and the remainder of the claim be construed as one unified and internally consistent recitation of the claimed invention. Id.

The specification of a patent “acts as a dictionary” both “when it expressly defines terms used in the claims” and “when it defines terms by implication.” Vitronics, 90 F.3d at 1582. For example, the specification “may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.” Phillips, 415 F.3d at 1323 quoting Iredto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004).

Importantly, a person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification. Phillips, 415 F.3d at 1314. Whatever ambiguity may exist with respect to the claim language may be resolved by an examination of the specification.

Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002) (“The specification may assist in resolving ambiguity where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.”)

A patentee may deviate from the conventional meaning of a particular claim term by making the intended meaning of a particular claim term clear (1) in the specification or (2) during the patent’s prosecution history. Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 889 (Fed. Cir. 1984). If using a definition that is contrary to the definition given by those of ordinary skill in the art, however, the patentee’s specification must communicate a deliberate and clear preference for the alternate definition. Kumar v. Ovonic Battery Co., Inc., 351 F.3d 1364, 1368 (Fed. Cir. 2003), citing Apple Computers, Inc. v. Articulate Sys., Inc., 234 F.3d 14, 21 n.5 (Fed. Cir. 2000). In ascribing to an alternative definition rather than the ordinary meaning, the intrinsic evidence must “clearly set forth” or “clearly redefine” a claim term so as to put one reasonably

skilled in the art on notice that the patentee intended to so redefine the claim term. Bell Atl. Network Servs., Inc. v. Covad Communs. Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001).

The prosecution history, including “the prior art cited,” is “part of the ‘intrinsic evidence.’” Phillips, 415 F.3d at 1317. The prosecution history “provides evidence of how the inventor and the PTO understood the patent.” Id. Thus, the prosecution history can often inform the meaning of the claim language by demonstrating how an inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would be otherwise. Vitronics, 90 F.3d at 1582-83; see also Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005) (“The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution” quoting ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988)); Southwall Techs., Inc. v. Cardinal IG Co., F.3d 1570, 1576 (Fed. Cir. 1995); see also Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1306 (Fed. Cir. 2007), citing Microsoft Corp. v. Multi-tech Sys., Inc., 357 F.3d 1340, 1350 (Fed. Cir. 2004) (“We have held that a statement made by the patentee during prosecution history of a patent in the same family as the patent-in-suit can operate as a disclaimer.”) The Federal Circuit in Texas Instruments Inc. v. U.S.I.T.C., 988 F.2d 1165 (Fed. Cir. 1993), the stated:

As a general proposition, prosecution history estoppel is based upon a showing that an applicant amended a claim to avoid a cited prior art reference. ... Amendment of a claim in light of a prior art reference, however, is not the sine qua non to establish prosecution history estoppel. Unmistakable assertions made by the applicant to the Patent and Trademark Office (PTO) in support of patentability, whether or not required to secure allowance of the claim, also may operate to preclude the patentee from asserting equivalency between a limitation of the claim and a substituted structure or

process step.

(emphasis added) Id. at 1174 (internal citations omitted); see also Forest Labs, Inc. v Abbott Labs, 239 F.3d 1305, 1313-14 (stating that “arguments made during prosecution lead to the conclusion that the claims should be limited to their literal scope”); Bayer AG v. Elan Pharm. Corp., 212 F.3d 1241, 1252 (Fed. Cir. 2002); Wang Lab., Inc. v. Mitsubishi Elecs., Inc., 103 F.3d 1571, 1578 (Fed. Cir. 1997). The prosecution history includes any reexamination of the patent. Intermatic Inc. v. Lamson & Sessions Co., 273 F.3d 1355, 1367 (Fed. Cir. 2001).

In addition to the intrinsic evidence, the administrative law judge may consider extrinsic evidence when interpreting the claims. Extrinsic evidence consists of all evidence external to the patent and the prosecution history, including inventor testimony and expert testimony. This extrinsic evidence may be helpful in explaining scientific principles, the meaning of technical terms, and terms of art. See Vitronics, 90 F.3d at 1583; Markman, 52 F.3d at 980. However, “[e]xtrinsic evidence is to be used for the court’s understanding of the patent, not for the purpose of varying or contradicting the terms of the claims.” Markman, 52 F.3d at 981. Also, the Federal Circuit has viewed extrinsic evidence in general as less reliable than the patent and its prosecution history in determining how to read claim terms. Phillips, 415 F.3d at 1318. In addition, while extrinsic evidence may be useful, it 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 1319.

In Nystrom v. Trex Company, 424 F.3d 1136 (Fed. Cir. 2005), the Court stated:

... as explained in Phillips, Nystrom is not entitled to a claim construction divorced from the context of the written description and prosecution history. The written description and prosecution

history consistently use the term “board” to refer to wood decking materials cut from a log. Nystrom argues repeatedly that there is no disavowal of scope of the written description or prosecution history. Nystrom’s argument is misplaced. Phillips, 415 F.3d at 1321 (“The problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive.”). What Phillips now counsels is that in the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public— i.e., those of ordinary skill in the art— that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source. Id.

Id. at 1144-45. In Free Motion Fitness Inc. v. Cybex Int’l Inc., 423 F.3d 1343 (Fed. Cir. 2005),

the Court concluded that:

under Phillips, the rule that “a court will give a claim term the full range of its ordinary meaning”, Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir. 2001), does not mean that the term will presumptively receive its broadest dictionary definition or the aggregate of multiple dictionary definitions. Phillips, 415 F.3d at 1320-1322. Rather, in those circumstances, where references to dictionaries is appropriate, the task is to scrutinize the intrinsic evidence in order to determine the most appropriate definition.

Id. at 1348-49. In Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353 (Fed. Cir. 2005),

the Court concluded:

As we recently reaffirmed in Phillips, “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.” Phillips, 415 F.3d at 1318. Here [expert] Coombs does not support his conclusion [the “download component” need not contain the boot program] with any references to industry publications or other independent sources. Moreover, expert testimony at odds with the intrinsic evidence must be disregarded. Id. (“[A] court should discount any expert testimony that is clearly at odds with the claim construction

mandated by . . . the written record of the patent." (internal quotations and citation omitted). That is the case here.

Id. at 1361.

Patent claims should be construed so as to maintain their validity. However, that maxim is limited to cases in which a court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous. Phillips, 415 F.3d at 1327. If the only reasonable interpretation renders the claim invalid, then the claim should be found invalid. See, e.g., Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999).

1. Whether U.S. Patent No. 5,799,010 Should Be Incorporated By Reference Into The Power Ramp-Up Patents

A preliminary issue is whether U.S. Patent No. 5,799,010 (the '010 patent or CX-52) should be incorporated by reference into the power ramp-up patents.

Complainants have argued that the '010 patent should be incorporated by reference into the common specification of the power ramp-up patents. Specifically, complainants argued that the '010 patent is directly referenced twice in the common specification and indirectly referenced in the common specification via incorporation of the priority '768 patent.⁴ (CBr at 22.) Complainants further argued that the original application for the '768 patent was amended to identify the application which issued as the '010 patent by serial number. (CBr at 23, 28-29.)

⁴ The application of the '004 patent is a continuation of application Ser. No. 10/400,343, filed Mar. 26, 2003 now U.S. Pat. No. 6,839,567 which patent is a continuation of Ser. No. 10/086,320, filed Mar. 1, 2002, which issued on May 27, 2003 as U.S. Pat. No. 6,571,105, which patent is a continuation of application Ser. No. 09/721,034, filed Nov. 22, 2000, which issued on Dec. 10, 2002 as U.S. Pat. No. 6,493,563, which patent is a continuation of application Ser. No. 09/003,104, filed Jan. 6, 1998, which issued on Jan. 30, 2001 as U.S. Pat. No. 6,181,949, which patent is a continuation of application Ser. No. 08/670,162, filed on Jun. 27, 1996, which issued on Nov. 24, 1998 as U.S. Pat. No. 5,841,768 (the '768 patent, or CX-4). (CX-1 at ITC-COMP00005644.)

Complainants also argued that:

The first and second incorporation statements identify the incorporated application not only by title and filing date, but also by subject matter. This information uniquely identifies the ‘010 patent without reference to the application serial number given in the ‘768 patent.

(CBr at 25.) Finally, complainants argued that, even if the ‘010 patent is not incorporated by reference, the ‘010 patent is “nonetheless intrinsic evidence because it is cited as art of record in the ‘966 and ‘847 patents, as reflected on the cover pages of these patents.” (CBr at 29-30.)

Respondents argued that the ‘010 patent was not incorporated by reference, as the incorporation statement in the common specification does not identify the referenced document by application number, patent number, assignee, or inventors. (RBr at Sec. II, p. 15.) Also, respondents argued that the title in the common specification did not accurately identify the application leading to the ‘010 patent. (RBr at Sec. II, p. 14.)

The staff argued that the ‘010 patent is not incorporated by reference into the ‘768 patent because while “[t]he serial number is that of the ‘010 patent ... the title is not.” (SBr at 11) and that “the reference in the specification of the ‘768 patent to two different applications, neither of which correctly sets forth the title of the ‘010 patent, increases the ambiguity that one of ordinary skill in the art would readily see.” (SBr at 12.) Thus, the staff also argued that the common specification does not identify the ‘010 patent by title. (SBr at 8.) Further, the staff argued that:

The confusion may have been somewhat ameliorated had InterDigital identified the referenced application by serial number or some other identifying information, such as inventor or assignee. Indeed, it would have been an easy matter for InterDigital to have made such an amendment during the eight years between the issuance of the ‘010 patent and the issuance of the first of the short code ramp-up patents. But InterDigital failed to amend the

common specification to refer to any of these things. SPFF III.14; see also MPEP § 608.01(p); and 37 C.F.R. §§ 1.57(b)(2) and (g).

(SBr at 9.)

Regarding whether the ‘010 patent is incorporated by reference in the common specification, the two “incorporation statements” relied on by complainants read as follows:

[I]t is extremely important in wireless CDMA communication systems to control the transmission power of all subscriber units. This is best accomplished by using a closed loop power control algorithm once a communication link is established. A detailed explanation of such a closed loop algorithm is disclosed in U.S. patent application entitled Code Division Multiple Access (CDMA) System and Method filed concurrently herewith, which is incorporated by reference as if fully set forth.

* * *

Periodic updating of the short code averages the interference created by the short code over the entire spectrum. A detailed description of the selection and updating of the short codes is outside the scope of this invention. However, such a detailed description is disclosed in the related application U.S. patent application entitled Code Division Multiple Access (CDMA) System and Method.

(CX-1 at 2:31-35, 9:30-35 (emphasis added).) These two “incorporation statements” are also found in ‘768 patent, which is incorporated by reference into and is the priority application for each of the power ramp-up patents. (CFF 1.24, CFF 1.32, CFF 1.41 (undisputed); CX-4 at 2:18-26, 9:18-24.) Thus, the ‘768 patent was filed before the power ramp-up patents, on June 27, 1996.⁵ (CX-4.) The ‘768 patent lists InterDigital Technology Corporation Wilmington, Del. as the assignee. Both of said incorporation statements refer to an application titled Code Division

⁵ The ‘004 patent was filed on June 14, 2004, the ‘966 patent was filed on June 29, 2005, and the ‘847 patent was filed on June 29, 2005. (See CX-1 at ITC-COMP00005644; CX-2 at ITC-COMP00016933; CX-3 at ITC-COMP00021139.)

Multiple Access (CDMA) System and Method.⁶ Neither passage explicitly identifies the referenced patent application by serial number, patent number, inventors, or assignee. The administrative law judge finds it significant that the statement “filed concurrently herewith” in said incorporation statements, supra, discloses both the filing date and the assignee as being the same as that of the ‘768 patent, which was the priority patent of the power ramp-up patents. While the title referred to in said incorporation statements, supra, does not accurately reflect the title of the ‘010 patent, the difference as between the title in the common specification, viz. “Code Division Multiple Access (CDMA) System and Method,” and the title of the ‘010 patent, viz. “Code Division Multiple Access (CDMA) Communication System,” is merely that the former contains the words “System and Method” while the latter reads “Communication System.” (Compare CX-1 at 2:32-34, 9:34-35 with CX-52 at Title Page.) Nine of the patents that issued from other applications filed by the assignee concurrently with the ‘768 patent, i.e., on June 27, 1996, are U.S. Patent Nos. 5,796,776; 5,991,329; 5,912,919; 5,799,010; 5,748,687; 6,487,190; 5,953,346; 5,940,382; and 5,754,803. (CPre at 45-47.) The administrative law judge finds that a person of ordinary skill in the art, at the time of the issuance of the ‘004 patent on October 3, 2006, could ascertain what applications for patents were filed by a particular assignee on a particular date (in this situation, 27, 1996) by, inter alia, reviewing the electronic databases of the U.S. Patent Office. The titles of the applications filed by the assignee on the same day as the application (viz., June 27, 1996) which led to the ‘768 patent follows, with the application for the ‘010 patent listed first, are as follows:

⁶ The Joint Stipulation Regarding Technology At Issue defines CDMA as a method. (SX-4 at 1 (“The multiple access (MA) method used in the ‘004 Patent Family is Code Division Multiple Access (CDMA) ...”).)

Application No.	Patent No.	Title
08/669,775	5,799,010 (CX-52)	Code Division Multiple Access (CDMA) Communication System
08/669,769	5,796,776	Code Sequence Generator in a CDMA Modem
08/669,770	5,991,329	Automatic Power Control System for a Code Division Multiple Access (CDMA) Communications System
08/669,771	5,912,919	Efficient Multipath Centroid Tracking Circuit for a Code Division Multiple Access (CDMA) System
08/669,776	5,748,687	Spreading Code Sequence Acquisition System and Method That Allows Fast Acquisition in Code Division Multiple Access (CDMA) Systems
08/670,160	6,487,190	Efficient Multichannel Filtering for CDMA Modems
08/671,067	5,953,346	CDMA Communication System Which Selectively Suppresses Data Transmissions During Establishment of a Communication Channel
08/671,068	5,940,382	Virtual Locating of a Fixed Subscriber Unit to Reduce Re-Acquisition Time
08/671,221	5,754,803	Parallel Packetized Intermodule Arbitrated High Speed Control and Data Bus

(See CPre at 46; RPre at Sec. II, p. 76.)⁷ As found, supra, the date of filing, viz., June 27, 1996 and the assignee, viz. InterDigital Technology Corporation, is known. The '768 patent states, in the "Background of the Invention" section, that "[t]he present invention relates generally to CDMA communication systems." (CX-1 at 24-25; CX-4 at 1:14-16.) The administrative law judge rejects the argument that, given that an application with the precise title "Code Division Multiple Access (CDMA) System and Method" is not found, a person of ordinary skill in the art

⁷ The administrative has taken judicial notice of said eight patents, which are public documents and have been unambiguously identified in the record as relevant to this investigation, and has included said patents as ALJ exhibits ALJ- Ex. 1 to ALJ-Ex. 8.

would not find and review the patent application titled “Code Division Multiple Access (CDMA) Communication System” filed on June 27, 1996, as indicated, supra. Given the short list of applications filed on June 27, 1996, supra, and the fact that no other application has a title similar to that listed in the incorporation statements, such an argument “presumes stupidity rather than skill” on the part of the person of ordinary skill in the art. See In re Sovish, 769 F.2d 738, 743.

Finally, the Background section of the ‘010 patent reads:

The present invention generally pertains to Code Division Multiple Access (CDMA) communications, also known as spread-spectrum communications. More particularly, the present invention pertains to a system and method for providing a high capacity, CDMA communications system which provides for one or more simultaneous user bearer channels over a given radio frequency, allowing dynamic allocation of bearer channel rate while rejecting multipath interference.

(CX-52 at 1:8-17 (emphasis added).) Thus, the ‘010 patent is consistent with what is stated in the joint stipulation. See SX-4.

Further, the subject matter of the ‘010 patent application which the common specification purports to incorporate by reference is described distinctly as having both a detailed explanation of a closed loop algorithm and a detailed description of the selection and updating of short codes. The administrative law judge finds that a person of ordinary skill in the art would conclude that the specification of the ‘010 patent meets the subject matter description as set forth in the “incorporation statements” in the common specification. (See, generally, CX-52.) In contrast, the administrative law judge has reviewed each of the patents that issued from each of the other applications concurrently filed by the assignee on June 27, 1996, as represented by the application list, supra, and finds that no other of these applications matches the subject matter

detailed in the incorporation statements. Therefore, the administrative law judge finds that the ‘010 patent is identified with sufficient particularity, viz., title, filing date, assignee, and subject matter, to be incorporated by reference. Further, the administrative law judge notes that although respondents and the staff have argued that the incorrect title is confusing, neither respondents nor staff have argued that any particular patent application filed concurrently with the ‘768 patent covered subject matter that was similar to the ‘010 patent. Based on the foregoing, the administrative law judge finds that a person of ordinary skill in the art would understand that the ‘010 patent is incorporated by reference into the power ramp-up patents.

2. The claimed phrases “code,” “code of a first type,” “first code,” “code signal(s)” and “different codes”

The claimed term “code” appears in asserted claims 1, 2, 31, and 59 of the ‘004 patent, asserted claim 1 of the ‘966 patent, and asserted claims 5, 6, 9, and 11 of the ‘847 patent.⁸ A cellular system, such as the one described in the power ramp-up patents, uses certain radio frequency bands that are shared by base stations and subscriber units. (SX-4 at 1.) While there are a number of technical methods that are used to provide simultaneous access by all the base stations and the subscriber units in each frequency band, the method used in the power ramp-up patents is CDMA. (SX-4 at 1.) In CDMA, different codes are used by the base stations and subscriber units to define the different system channels to be used for control and communication. (SX-4 at 1-2.)

Complainants argued that the claim term “code” should be construed as “a sequence of

⁸ Although the remaining asserted claims, viz. claims 3, 8, 9, and 11 of the ‘966 patent, do not contain the claim term “code,” each depend from claim 1 of the ‘966 patent which does and thus, said claim term is relevant to each of the asserted claims of the power ramp-up patents.

“chips,” and that various modifiers of said term code, such as access, pilot, spreading, and short, cannot be imported into claims where the more general term “code” is used. (CBr at 31.)

Complainants further argued that:

By applying the commonly understood meaning of “code,” [which complainants interpreted as “a sequence of chips”] the various different claim clauses using this term can be readily understood. For example, “a first code” would be a “first sequence of chips”; “second code” would be a “second sequence of chips”; “plurality of different codes” would be “multiple different sequences of chips”; and “codes of a first/second type” would be “a sequence of chips that share a common characteristic or are members of the same group.”

(CBr at 32.) Complainants also argued that the term “signal” is generic, and thus that the claimed phrase “code signal” is a “sequence of chips that is broadcast or transmitted as a signal.”

(CBr at 34, n. 8.)

Respondents argued that the claimed phrases “code signal,” “first code,” “code of a/the first type,” “codes” and “signal” in the claims all correspond to the “short codes” in the common specification and argued:

When considered in the context of the Common Specification of the Short Code Ramp-Up Patents, the terms “code signals,” “first code,” “code of a/the first type,” “codes,” and “signals” each correspond to the disclosed “short codes” because only those codes are described as having the characteristics recited in the claims.

(RBr at Sec. II, p. 21.)

The staff argued:

The common specification of the short code ramp-up patents never describes a code that is not a spreading code, and never describes a code to be something other than a spreading code. SPFF III.23. For at least this reason, the Staff submits that “code,” “first code,” “code of a first type,” “different codes,” and “code signals” mean

“a spreading code or a portion of a spreading code.”
(SBr at 19.)

Based on the foregoing, the administrative law judge finds that there is a dispute over the claim terms “code” and “signal,” while there is no substantive disagreement as to the meaning of the claim terms, “first,” “second,” “type,” and “different.” Thus, he finds that “first,” “second,” “type,” and “different” modify the claim term “code” as per their plain and ordinary meaning.

Claim 1 of the ‘004 patent, as recited supra but with certain emphasis reads:

A method for performing power control in a wireless code division multiple access communication system, the method comprising:
transmitting dynamically selected code signals at increasing power levels until an acknowledgement is received indicating that one of said dynamically selected code signals was detected, wherein the transmitted dynamically selected code signals carry no data; and in response to detecting the acknowledgment, transmitting an access signal wherein the access signal is associated with the dynamically selected code signals and each of the dynamically selected code signals are shorter than the access signal.

(CX-1 at 10:62-11:7 (emphasis added).) Thus, the access signal and the dynamically selected code signals are both transmitted, pursuant to the plain language of the claims.

Claim 1 of the ‘966 patent, as recited supra but with certain emphasis, reads:

A wireless code division multiple access (CDMA) subscriber unit comprising: a transmitter configured such that, when the subscriber unit is first accessing a CDMA network and wants to establish communications with a base station associated with the network over a communication channel to be indicated by the base station, the transmitter successively transmits signals until the subscriber unit receives from the base station an indication that a transmitted one of the signals has been detected by the base station, wherein each transmission of one of the signals by the transmitter is at an increased power level with respect to a prior transmission of one of the signals; the transmitter further configured such that the transmitter transmits to the base station a message indicating to the

base station that the subscriber unit wants to establish the communications with the base station over the communication channel to be indicated by the base station, the message being transmitted only subsequent to the subscriber unit receiving the indication, wherein each of the successively transmitted signals and the message are generated using a same code; and wherein each of the successively transmitted signals is shorter than the message.

(CX-2 at 10:62-11:19 (emphasis added).) Further, claim 11 of the ‘847 patent reads in part:

an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit, and said plurality of different codes, as transmitted by said subscriber unit, being a function of a same code.

(CX-3 at 16:7-14 (emphasis added).)⁹ Thus, according to the language of the claims of the ‘004 patent, ‘966 patent, and the’847 patent, the administrative law judge finds that a person of ordinary skill in the art would conclude that there is a relationship between the “access signal,”¹⁰ the “dynamically selected code signals,” and the “plurality of different codes.”

Each of the independent asserted claims, as stated in their preambles, relate to CDMA. (See, e.g., Claim 1 of the ‘966 patent (CX-2 at 10:62-63 (“A wireless code division multiple access (CDMA) subscriber unit...”)); Claim 5 of the ‘847 patent (CX-3 at 12:32-33 (“A wireless code division multiple access (CDMA) subscriber unit...”)); Claim 1 of the ‘004 patent (CX-1 at 10:62-63 (“in a wireless code division multiple access communication system...”)).) The common specification discloses, in the Background of the Invention section:

In a CDMA [Code Division Multiple Access] system, the same

⁹ The full text of claim 11 of the ‘847 patent is reproduced supra.

¹⁰ The asserted claims disclose that a code signal and an access signal are transmitted, and claim 1 of the ‘966 patent discloses that a “signal” is transmitted, the administrative law judge finds that the claimed term “signal” may be used interchangeably with “code signal.”

portion of the frequency spectrum is used for communication by all subscriber units. Each subscriber unit's baseband data signal is multiplied by a code sequence, called the "spreading code", which has a much higher rate than the data. The ratio of the spreading code rate to the data symbol rate is called the "spreading factor" or the "processing gain". This coding results in a much wider transmission spectrum than the spectrum of the baseband data signal, hence the technique is called "spread spectrum". Subscriber units and their communications can be discriminated by assigning a unique spreading code to each communication link which is called a CDMA channel.

(CX-1 at 1:66-2:10 (emphasis added).) Hence, the common specification discloses that spreading codes are an essential component of a CDMA system. Moreover, the '010 patent, which the administrative law judge has found to be incorporated by reference into the common specification, states, in its Description of the Relevant Art:

Spread spectrum modulation refers to modulating a information signal with a spreading code signal; the spreading code signal being generated by a code generator where the period Tc of the spreading code is substantially less than the period of the information data bit or symbol signal. The code may modulate the carrier frequency upon which the information has been sent, called frequency-hopped spreading, or may directly modulate the signal by multiplying the spreading code with the information data signal, called direct-sequence spreading (DS). Spread-spectrum modulation produces a signal with bandwidth substantially greater than that required to transmit the information signal. Synchronous reception and despreading of the signal at the receiver recovers the original information. A synchronous demodulator in the receiver uses a reference signal to synchronize the despreading circuits to the input spread-spectrum modulated signal to recover the carrier and information signals.

* * *

One area in which spread-spectrum techniques are used is in the field of mobile cellular communications to provide personal communication services (PCS). Such systems desirably support large numbers of users, control Doppler shift and fade, and provide

high speed digital data signals with low bit error rates. These systems employ a family of orthogonal or quasi-orthogonal spreading codes, with a pilot spreading code sequence synchronized to the family of codes. Each user is assigned one of the spreading codes as a spreading function. Related problems of such a system are: supporting a large number of users with the orthogonal codes, handling reduced power available to remote units, and handling multipath fading effects. Solutions to such problems include using phased-array antennas to generate multiple steerable beams, using very long orthogonal or quasi-orthogonal code sequences. These sequences may be reused by cyclic shifting of the code synchronized to a central reference, and diversity combining of multipath signals.

(CX-52 at 1:36-53, 2:9-27 (emphasis added).) Thus, spread-spectrum modulation, viz. modulating a information signal with a spreading code signal, produces a signal with bandwidth substantially greater than that required to transmit the information signal. In a further explanation of spreading codes, the '010 patent specification discloses:

The Spreading Codes

The CDMA code generators used to encode the logical channels of the present invention employ Linear Shift Registers (LSRs) with feedback logic which is a method well known in the art. The code generators of the present embodiment of the invention generate 64 synchronous unique sequences. Each RF communication channel uses a pair of these sequences for complex spreading (in-phase and quadrature) of the logical channels, so the generator gives 32 complex spreading sequences. The sequences are generated by a single seed which is initially loaded into a shift register circuit.

(CX-52 at 17:16-26 (emphasis added).) The '010 patent specification also discloses:

The spreading code is a sequence of symbols, called chips or chip values.

(CX-52 at 17:46-47.) Therefore, the administrative law judge finds that the spreading code is a sequence of chips.

The common specification further discloses:

The access code in the preferred embodiment, as previously described herein, is approximately 30 million chips in length. However, the short code is much smaller. The short code can be chosen to be any length that is sufficiently short to permit quick detection. There is an advantage in choosing a short code length such that it divides the access code period evenly. For the access code described herein, the short code is preferably chosen to be 32, 64 or 128 chips in length. Alternatively, the short code may be as short as one symbol length, as will be described in detail hereinafter.

* * *

Referring to FIG. 8, the period of the short code is equal to one symbol length and the start of each period is aligned with a symbol boundary. The short codes are generated from a regular length spreading code. A symbol length portion from the beginning of the spreading code is stored and used as the short code for the next 3 milliseconds. Every 3 milliseconds, a new symbol length portion of the spreading code replaces the old short code. Since the spreading code period is an integer multiple of 3 milliseconds, the same short codes are repeated once every period of the spreading code.

* * *

The transmitter section 74 comprises a spreading code generator 86 which generates and outputs spreading codes to a data transmitter 88 and a short code and access code transmitter 90.

(CX-1 at 8:5-14, 9:18-28, 10:10-13 (emphasis added).) Hence, the codes referred to in the specification are a various number of chips in lengths, which is consistent with being “a sequence of chips,” and the specification discloses that short codes and access codes are generated by a “spreading code generator.”

The phrase “short code,” although not a claimed phrase, is frequently referred to in the common specification. For example, claim 1 of the ‘004 patent recites “each of the dynamically

selected code signals are shorter than the access signal." (CX-1 at 11:6-7 (emphasis added).)

Claim 1 of the '966 patent further recites "wherein each of the successively transmitted signals is shorter than the message." (CX-2 at 11:18-19 (emphasis added).) Referring to extrinsic evidence, complainants' expert Vojcic testified:

Q. Yes. Dr. Vojcic, you indicated spreading codes do not necessarily increase the bandwidth of an information signal.

Are there codes in the '004 patent which are spreading codes but do not increase the bandwidth of information signals?

A. Yes, there are. Like pilot code, short code, and access code.

Q. Is that shown in figure 10 of the '004 patent?

A. That's correct.

(Tr. at 430-31 (emphasis added).) Thus, complainants' expert testified that short codes in the specification were spreading codes. Complainants' expert further stated:

Q. Now, you would agree with me that in the context of the '004 patent, a short code is just part of a spreading code?

A. Yes, I do agree with that.

(Tr. at 609.) Consistent with the testimony of complainants' expert, respondents' expert Lanning testified:

Q. Let me turn to RDX-1167 and ask you if this excerpt from the specification of the short code ramp-up patents informs your opinion as to the proper construction?

A. Yes, the highlighted portions specifically states that the spreading code transmitted by the subscriber unit is much shorter than the rest of the spreading codes. Hence, the term short code.

(Tr. at 1633 (emphasis added).)¹¹

In view of the foregoing, the claim language, the common specification, the specification of the '010 patent, and extrinsic evidence, the administrative law judge finds the claim term "code" to be synonymous with "spreading code," and to be construed as "a sequence of chips."

¹¹ Even Ozlaturk, an inventor of the power ramp-up patents, at the hearing agreed with experts Vojcic and Lanning. Ozlaturk testified:

- Q. You have introduced this term short code in your description of the solution to the interference problem for the access procedure technology. What is a short code in that context?
- A. Well, in this context, the short code is a spreading code, just like all the other codes we use in broadband CDMA. As a spreading code, it is a sequence of chips, chip values.

But I need to give you a little bit more explanation to clarify. Now, we use many, many codes in broadband CDMA. And I call them all spreading codes. They come out of the same spreading code generator.

But some of these codes are reference codes. They provide reference, timing reference, channel information, but they don't spread anything.

We use the term spreading code for all of them, in referring to all of them, but some of these codes, such as the short codes and the access code that I mentioned previously, are the examples of codes that do not spread anything. And they are there for timing reference and as indicators. And then there are other codes that actually do spread, say, user data signals or call setup messages, for example.

And so in that context short codes are spreading codes. As I mentioned, they are the types of spreading codes that do not spread anything. And since all the other codes we generated were very long, to get a short code, we would take a portion of the long code and use it as a short code.

(Tr. at 126-27 (emphasis added).)

Accordingly, the claimed phrase, “first code” is construed as “first sequence of chips;” the claimed phrase “code of a [or the] first type” is construed as “sequence of chips of a/the first type;” and the claimed phrase “different codes” is construed as “different sequences of chips.”

Regarding the term “signal” in the claimed phrase “code signal(s)” the specification and the language of the claims, cited supra, specify that a signal is transmitted. Therefore, the administrative law judge finds that a person of ordinary skill in the art would interpret the claim phrase “code signal” as “a sequence of chips that is transmitted.” Further, the administrative law judge has found, supra, that the claimed phrase “signal” in the context of claim 1 of the ‘966 patent is interchangeable with the claimed phrase “code signal.” Thus said phrase “signal” in said claim is construed as “a sequence of chips that is transmitted.” Also, the administrative law judge finds that each of the claimed terms “codes,” “code signal,” “first code,” “code of a first type,” “code of the first type,” “different codes” and “signals” is a spreading code or a portion of a spreading code, in view of the common specification, the ‘010 specification, and testimony of experts and an inventor. See supra.

Complainants argued that dependent claim 61 of the ‘004 patent and dependent claim 5 of the ‘966 patent defines the word “code” of their respective independent claims as a “spreading code,” and therefore, the asserted claims cannot be limited to including only spreading codes. (CBr at 33-34.) As stated, supra, the presence of a specific limitation in a dependent claim raises a presumption that the limitation is not present in the independent claim, and said presumption is especially strong when the only difference between the independent and dependent claims is the limitation in dispute. Claim differentiation may create a presumption that the various codes mentioned in the asserted independent claims are not spreading codes, because there are

dependent claims that purport to contain a limitation that the codes are spreading codes. This presumption, however, is rebuttable.¹² See Dow Chem. Co. v. United States, 226 F.3d 1334, 1341 (Fed. Cir. 2000) (“The doctrine of claim differentiation can support a broader construction of step (c) of claim 1 because the doctrine creates a rebuttable presumption that each claim in a patent has a different scope.”); Comark Communs. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (“we recognize that the doctrine of claim differentiation is not a hard and fast rule of construction...”); Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 972 (Fed. Cir. 1999) (“the canon of claim differentiation is not a rigid rule”); see also Kraft Foods, Inc. v. International Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000) (“claim differentiation only creates a presumption that each claim in a patent has a different scope”). Significantly, both intrinsic and extrinsic, evidence can rebut any presumption created by claim differentiation. (Tandon Corp. v. U.S. International Trade Com., 831 F.2d 1017, 1024 (Fed. Cir. 1987) (“Whether or not claims differ from each other, one can not interpret a claim to be broader than what is contained in the specification and claims as filed.”); O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1582 (Fed. Cir. 1997) (“Although the doctrine of claim differentiation may at times be controlling, construction of claims is not based solely upon the language of other claims; the doctrine cannot alter a definition that is otherwise clear from the claim language, description, and prosecution history.”); Multiform Desiccants, Inc. v. Medzam Ltd., 133 F.3d 1473, 1480 (Fed. Cir. 1998) (“the doctrine of claim differentiation can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence.”); see also Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361 (Fed.

¹² See, generally, 60 Am Jur 2d Patents § 284.

Cir. 2007).) Finally, “the doctrine of claim differentiation cannot overcome proper claim scope as determined in view of the intrinsic evidence.” See Inv. No. 337-TA-631, Commission Opinion at 9-10 (July 14, 2009). The administrative law judge has found, supra, that the asserted claims each relate to a CDMA system, and that the specification discloses that CDMA systems use spreading codes. As found, supra, complainants have pointed to no evidence in the intrinsic evidence that any codes disclosed in the specification are not spreading codes or portions of spreading codes. Complainants’ expert testified, as found, supra, that short codes are spreading codes in the context of the common specification. Based on the foregoing, the administrative law judge finds that the presumption created by claim differentiation is rebutted, and that the codes referenced in the specification and the claims are all spreading codes.

3. The claimed phrase “access signal”

The claimed phrase “access signal” appears in asserted claims 1 and 59 of the ‘004 patent, and asserted claims 6, 9, and 11 of the ‘847 patent.

Complainants argued that the term “access signal,” in the context of the claims and the common specification, should be construed as “a signal for gaining access to a communication channel.” (CBr at 39 citing CFF 2.226.) Complainants further argued that “[o]ne of ordinary skill in the art at the time of the invention would readily understand that the various call setup messages used to gain access to a communication channel are ‘access signals.’” (CBr 40 citing CFF 2.219.)

Respondents argued that the “access signal” can only be the “access code” that is explicitly defined in the specification as “a known spreading code.” (RBr at Sec. II, p. 37.)

The staff argued that one of ordinary skill in the art would have understood the claim

term “access signal” to mean an access code as described in the context of the common specification; and that the common specification defined an access code as a “known spreading code.” (SBr at 25.)

Claim 1 of the ‘004 patent reads, in relevant part:

transmitting an access signal wherein the access signal is associated with the dynamically selected code signals and each of the dynamically selected code signals are shorter than the access signal.

(CX-1 at 11:4-7.) Hence, the claim language establishes a connection between the code signals and the access signal, and compares the relative length. Further, claim 59 of the ‘004 patent, even more explicitly, states:

said processor configured to control the transmitter such that the transmitter transmits, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber, unit and said base station, said access signal as transmitted by said subscriber unit and said different codes as transmitted by said subscriber unit each being a function of a same code.

(CX-1 at 17:18-25.) Thus, the access signal is described as being a function of the same code as the “said different codes.” Further, while the common specification does not contain the claim phrase “access signal,” the common specification does disclose:

The access code 42 is a known spreading code transmitted from a subscriber unit 16 to the base station 14 during initiation of communications and power ramp-up.

* * *

The transmitter section 74 comprises a spreading code generator 86 which generates and outputs spreading codes to a data transmitter 88 and a short code and access code transmitter 90.

(CX-1 at 6:20-23, 10:10-13 (emphasis added).) Accordingly, the common specification discloses that an access code is transmitted. Given the administrative law judge's construction of the claimed phrase "signal," supra, and based on the claim language and common specification, supra, the administrative law judge finds that the claimed phrase "access signal" is the same as the access code that is transmitted, as disclosed in the common specification. The common specification further discloses:

As the base station 14 transmits the pilot code 40 (step 100), the base station 14 searches (step 101) for an "access code" 42 transmitted by a subscriber unit 16. The access code 42 is a known spreading code transmitted from a subscriber unit 16 to the base station 14 during initiation of communications and power ramp-up. The base station 14 must search through all possible phases (time shifts) of the access code 42 transmitted from the subscriber unit 16 in order to find the correct phase. This is called the "acquisition" or the "detection" process (step 101).

(CX-1 at 6:18-27 (emphasis added).) Thus, the access code is transmitted during initiation of communications. Further, the common specification discloses that transmitting the access code is only a part of the initiation:

Upon detection of the correct phase of the access code by the base station 14, the base station 14 sends an acknowledgment to the subscriber unit 16 (step 216). Reception of the acknowledgment by the subscriber unit 16 concludes the ramp-up process. A closed loop power control is established, and the subscriber unit 16 continues the call setup process by sending related call setup messages (step 218).

(CX-1 at 10:46-53 (emphasis added).) Also, Fig. 6B, in box 178, shows that the steps of "cease increasing transmission power" and "stop transmitting access code" are simultaneous, and Fig. 7 shows the access code ceasing before "the rest of call setup and closed loop power control." (CX-1, Fig. 6B, Fig. 7.) In addition, in reference to Figs. 11A and B, the common specification

discloses:

An overview of the ramp-up procedure in accordance with the preferred current invention is summarized in FIGS. 11A and 11B. The base station 14 transmits a pilot code while searching for the short code (step 200). The subscriber unit 16 acquires the pilot code transmitted from the base station 14 (step 202), starts transmitting a short code starting at a minimum power level P_0 which is guaranteed to be less than the required power, and quickly increases transmission power (step 204). Once the received power level at the base station 14 reaches the minimum level needed for detection of the short code (step 206) the base station 14 acquires the correct phase of the short code, transmits an indication of this detection, and begins searching for the access code (step 208). Upon receiving the detection indication, the subscriber unit 16 ceases transmitting the short code and starts transmitting an access code. The subscriber unit 16 initiates a slow ramp-up of transmit power while sending the access code (step 210). The base station 14 searches for the correct phase of the access code by searching only one phase out of each short code length portion of the access code (step 212). If the base station 14 searches the phases of the access code up to the maximum round trip delay and has not detected the correct phase, the search is repeated by searching every phase (step 214). Upon detection of the correct phase of the access code by the base station 14, the base station 14 sends an acknowledgment to the subscriber unit 16 (step 216). Reception of the acknowledgment by the subscriber unit 16 concludes the ramp-up process. A closed loop power control is established, and the subscriber unit 16 continues the call setup process by sending related call setup messages (step 218).

(CX-1 at 10:23-53 (emphasis added); see also CX-1, Figs. 11A, 11B.) Thus, the access code does not continue for the entire call setup process. Based on the foregoing, the administrative law judge finds that an “access signal” is a known sequence of chips that is transmitted during power ramp-up to facilitate the initiation of communications.

Complainants have argued that the claimed “access signal” contains more than just a known spreading code, as the access signal and the spread call setup message are both

components of the transmitted RF signal, based on a disclosure in the ‘010 patent that the long access pilot code and the call setup message are transmitted together, citing to CX-52 at 58:6, 58:20, 69:35-45. (CBr at 40.) The specification of the ‘010 patent however discloses:

The SU modem monitors, at step 2406, the FBCH AXCH traffic light. When the AXCH traffic light is set to red, the SU assumes the RCS modem has acquired the SAXPT and begins transmitting LAXPT. The SU modem continues to ramp-up power of the LAXPT at a slower rate until Sync-Ind messages are received on the corresponding CTCH. If the SU is mistaken because the traffic light was actually set in response to another SU acquiring the AXCH, the SU modem times out because no Sync-Ind messages are received. The SU randomly waits a period of time, picks a new AXCH channel, and steps 2404 and 2405 are repeated until the SU modem receives Sync-Ind messages. Details of the power ramp up method used in the exemplary embodiment of this invention may be found in the U.S. patent application entitled METHOD OF CONTROLLING INITIAL POWER RAMP-UP IN CDMA SYSTEMS BY USING SHORT CODES filed on even date herewith, which is hereby incorporated by reference.

Next, at step 2407, the RCS modem acquires the LAXPT of the SU and begins sending Sync-Ind messages on the corresponding CTCH. The modem waits 10 msec for the Pilot and AUX Vector correlator filters and Phase locked loop to settle, but continues to send Synch-Ind messages on the CTCH. The modem then begins looking for a request message for access to a bearer channel (MAC_ACC_REQ), from the SU modem.

The SU modem, at step 2408, receives the Sync-Ind message and freezes the LAXPT transmit power level. The SU modem then begins sending repeated request messages for access to a bearer traffic channel (MAC_ACC_REQ) at fixed power levels, and listens for a request confirmation message (MAC_BEARER_CFM) from the RCS modem.

Next, at step 2409, the RCS modem receives a MAC_ACC_REQ message; the modem then starts measuring the AXCH power level, and starts the APC channel. The RCS modem then sends the MAC_BEARER_CFM message to the SU and

begins listening for the acknowledgment MAC_BEARER_CFM_ACK of the MAC_BEARER_CFM message.

At step 2410, the SU modem receives the MAC_BEARER_CFM message and begins obeying the APC power control messages. The SU stops sending the MAC_ACC_REQ message and sends the RCS modem the MAC_BEARER_CFM_ACK message. The SU begins sending the null data on the AXCH. The SU waits 10 msec for the uplink transmit power level to settle.

(CX-52 at 57:44-58:23 (emphasis added); see also Fig. 24.) Respondents dispute complainants' contentions regarding LAXPT. (See, inter alia, RRCFF 2.222B, 2.222C, 2.223B.) The administrative law judge assumes arguendo, that LAXPT and MAC_ACC_REQ are as represented by complainants, viz., that the LAXPT referred to supra corresponds to the access signal of the asserted patents and that the MAC_ACC_REQ also referred to supra corresponds to the call setup message. Thus, the '010 patent discloses that LAXPT is acquired in step 2407 by the base station, and, in step 2408, the LAXPT power level is frozen, and the MAC_ACC_REQ is sent. The common specification discloses that:

Upon detection of the correct phase of the access code by the base station 14, the base station 14 sends an acknowledgment to the subscriber unit 16 (step 216). Reception of the acknowledgment by the subscriber unit 16 concludes the ramp-up process. A closed loop power control is established, and the subscriber unit 16 continues the call setup process by sending related call setup messages (step 218).

(CX-1 at 10:46-53; FIG. 11B; see also FIGS. 5, 7 (showing that the power ramp-up is complete when access code power level is frozen); see also Tr. at 670 (complainants' expert testified that "Q. But you would agree with me that reading this, at least, the ramp-up process is concluded at the time the access code is acquired? A. Yes, I agree. I agree.").) Therefore, LAXPT and

MAC_ACC_REQ cannot be portions of the same signal. Hence, the administrative law judge rejects complainants' argument that the claimed "access" contains more than just a known spreading code.

Respondents and the staff argued that "access signal" should be construed as "a known spreading code." As found with respect to the claim term "code," *supra*, such a construction is incomplete, as said construction does not adequately explain an access signal with respect to the claims or the specification.

4. The claimed phrases "associated with," "generated using a same code" and "function of a same code"

Asserted claims 1, 2, and 31 of the '004 patent in issue contain the claimed phrase "associated with." Asserted claim 1 of the '966 patent and asserted claim 5 of the '847 patent use the claimed phrase, "generated using a same code." Asserted claim 59 of the '004 patent in issue and asserted claims 6, 9, and 11 of the '847 patent in issue use the claimed phrase, "function of a same code."

Complainants argued that the term "associated with" means "that one code or signal is related to another code or signal," (CBr at 41) that "generated using a same code" means "are produced from a common base code," (CBr at 42) and that "function of a same code" means "that the access signal depends on and varies with a code, and each of the different codes depends on and varies with the same code." (CBr at 42.)

Respondents argued that "associated with" should be construed to mean that the first code is a portion of the second code (RBr at Sec. II, p. 46); that "function of a same code" should be construed to require that the "different codes" be a portion of the "access signal" (RBr at Sec. II,

p. 47); and that “generated using a same code” should be construed as meaning that the “short code” is a portion of the “message”. (RBr at Sec. II, p. 48.)

The staff argued that “the proper construction for the terms ‘associated with,’ ‘generated using,’ and ‘function of’ is ‘related to.’” (SBr at 27.)

a. The claimed phrase “associated with”

Asserted claim 1 of the ‘004 patent reads in pertinent part:

transmitting an access signal wherein the access signal is associated with the dynamically selected code signals and each of the dynamically selected code signals are shorter than the access signal.

(CX-1 at 11:3-7 (emphasis added).) The administrative law judge has found, supra, that an access signal is “a known sequence of chips that is transmitted during power ramp-up to facilitate the initiation of communications,” and that access signal is the same as the transmitted access code in the specification. Asserted claim 2 of the ‘004 patent reads in pertinent part:

the transmitter configured such that in response to detecting the acknowledgement, a signal having a second code is transmitted to access a communication channel wherein the second code is associated with the first code.

(CX-1 at 11:20-25 (emphasis added).) Asserted claim 31 of the ‘004 patent reads:

The method of claim 30 wherein said code of a first type is a dynamically selected code associated with said code of a second type.

(CX-1 at 14:27-29 (emphasis added).) Thus, based on the plain language of the claims, the administrative law judge finds that a person of ordinary skill in the art would conclude that “associated with” would mean related to. The common specification, however, as argued by respondents, further explains the nature of related to:

The access code 42 is a known spreading code transmitted from a subscriber unit 16 to the base station 14 during initiation of communications and power ramp-up. The base station 14 must search through all possible phases (time shifts) of the access code 42 transmitted from the subscriber unit 16 in order to find the correct phase.

* * *

The preferred embodiment of the present invention utilizes “short codes” and a two-stage communication link establishment procedure to achieve fast power ramp-up without large power overshoots. The spreading code transmitted by the subscriber unit 16 is much shorter than the rest of the spreading codes (hence the term short code), so that the number of phases is limited and the base station 14 can quickly search through the code. The short code used for this purpose carries no data.

The tasks performed by the base station 14 and the subscriber unit 16 to establish a communication channel using short codes in accordance with the preferred embodiment of the present invention are shown in FIGS. 6A and 6B. During idle periods, the base station 14 periodically and continuously transmits the pilot code to all subscriber units 16 located within the operating range of the base station 14 (step 150). The base station 14 also continuously searches for a short code transmitted by the subscriber unit 16 (step 152). The subscriber unit 16 acquires the pilot code and synchronizes its transmit spreading code generator to the pilot code (step 154). The subscriber unit 16 also periodically checks to ensure it is synchronized. If synchronization is lost, the subscriber unit 16 reacquires the pilot signal transmitted by the base station (step 156).

When a communication link is desired, the subscriber unit 16 starts transmitting a short code at the minimum power level P 0 (step 158) and continuously increases the transmission power level while retransmitting the short code (step 160) until it receives an acknowledgment from the base station 14 that the short code has been detected by the base station 14.

The access code in the preferred embodiment, as previously described herein, is approximately 30 million chips in length. However, the short code is much smaller. The short code can be

chosen to be any length that is sufficiently short to permit quick detection. There is an advantage in choosing a short code length such that it divides the access code period evenly. For the access code described herein, the short code is preferably chosen to be 32, 64 or 128 chips in length. Alternatively, the short code may be as short as one symbol length, as will be described in detail hereinafter.

Since the start of the short code and the start of the access code are synchronized, once the base station 14 acquires the short code, the base station 14 knows that the corresponding phase of the access code is an integer multiple of N chips from the phase of the short code where N is the length of the short code. Accordingly, the base station 14 does not have to search all possible phases corresponding to the maximum round trip propagation delay.

(CX-1 at 6:15-26, 7:41-8:14 (emphasis added).) As seen from the foregoing, the “short code” (of length N) is shorter than the access code, the short code is synchronized to the beginning of the access code, and the algorithm described in the specification assumes that the access code only need be searched in portions of length N. Hence, the administrative law judge finds that the short code must be identical to a portion of the access code. This finding is further supported by the ‘010 patent specification:

Rapid acquisition of the correct code phase by a spread-spectrum receiver is improved by designing spreading codes which are faster to detect. The present embodiment of the invention includes a new method of generating code sequences that have rapid acquisition properties by using one or more of the following methods. First, a long code may be constructed from two or more short codes. The new implementation uses many code sequences, one or more of which are rapid acquisition sequences of length L that have average acquisition phase searches $r=\log 2L$. Sequences with such properties are well known to those practiced in the art. The average number of acquisition test phases of the resulting long sequence is a multiple of $r=\log 2L$ rather than half of the number of phases of the long sequence.

Second, a method of transmitting complex valued

spreading code sequences (In-phase (I) and Quadrature (Q) sequences) in a pilot spreading code signal may be used rather than transmitting real valued sequences. Two or more separate code sequences may be transmitted over the complex channels. If the sequences have different phases, an acquisition may be done by acquisition circuits in parallel over the different code sequences when the relative phase shift between the two or more code channels is known. For example, for two sequences, one can be sent on an In phase (I) channel and one on the Quadrature (Q) channel. To search the code sequences, the acquisition detection means searches the two channels, but begins the (Q) channel with an offset equal to one-half of the spreading code sequence length. With code sequence length of N, the acquisition means starts the search at $N/2$ on the (Q) channel. The average number of tests to find acquisition is $N/2$ for a single code search, but searching the (I) and phase delayed (Q) channel in parallel reduces the average number of tests to $N/4$. The codes sent on each channel could be the same code, the same code with one channel's code phase delayed, or different code sequences.

(CX-52 at 19:26-62 (emphasis added).) Accordingly, the '010 patent discloses not only that the short code is identical to a portion of a longer spreading code, but that said longer code may be created from two or more short codes in the first place. Moreover, the specification of the '004 patent discloses:

The short codes are generated from a regular length spreading code. A symbol length portion from the beginning of the spreading code is stored and used as the short code for the next 3 milliseconds. Every 3 milliseconds, a new symbol length portion of the spreading code replaces the old short code. Since the spreading code period is an integer multiple of 3 milliseconds, the same short codes are repeated once every period of the spreading code.

(CX-1 at 9:20-28 (emphasis added).) Hence, the common specification discloses that a short code may be generated from a spreading code and is a portion of said spreading code. The specification of the '010 patent also discloses:

Short codes are used for the initial ramp-up process when an SU

accesses an RCS. The period of the short codes is equal to the symbol duration and the start of each period is aligned with a symbol boundary. Both SU and RCS derive the real and imaginary parts of the short codes from the last eight feed-forward sections of the sequence generator producing the global codes for that cell.

(CX-52 at 22:11-15 (emphasis added).) Accordingly, the ‘010 patent discloses that the short code may be derived directly from the sequence generator. Therefore, the administrative law judge finds that the short code may be generated in several ways, viz. generated from a portion of the spreading code or derived from a sequence generator.

Based on the foregoing, the administrative law judge finds that the claimed phrase “associated with” means that the shorter of the related codes is a portion of the longer related code. Thus, in claim 1 of the ‘004 patent, the claimed phrase “the access signal is associated with the dynamically selected code signals” is construed as “each of the dynamically selected code signals is a portion of the access signal.” In claim 2 of the ‘004 patent, the claimed phrase “the second code is associated with the first code” is construed as “the first code is a portion of the second code.” Finally, in claim 31, the claimed phrase “code of a first type is a dynamically selected code associated with said code of a second type” is construed as “code of a first type is a dynamically selected code which is a portion of a second type.”

Complainants argued against a finding that “associated with,” means that the shorter of the related codes is a portion of the longer related code stating that:

The incorporated ‘010 patent discloses another embodiment, including the relationship between access channel spreading codes and Long Access Pilot (LAXPT) codes. (CFF 2.238-2.240, CFF 2.218) The long access pilot (LAXPT) code is not a portion of the corresponding access channel (AXCH) spreading code, or vice versa. (CFF 2.217)

(CBr at 43.) The administrative law judge however finds that portions of the specification of the '010 patent cited to by complainants do not support their argument. For example, complainants cite to CX-52 at 14:52-54, 24:48-51. The first reference, CX-52 at 14:52-54, is a portion of the following citation from CX-52 and marked in boldface:

A 'channel' of the prior art is usually regarded as a communications path which is part of an interface and which can be distinguished from other paths of that interface without regard to its content. However, in the case of CDMA, separate communications paths are distinguished only by their content. The term 'logical channel' is used to distinguish the separate data streams, which are logically equivalent to channels in the conventional sense. All logical channels and sub-channels of the present invention are mapped to a common 64 kilo-symbols per second (ksym/s) QPSK stream. Some channels are synchronized to associated pilot codes which are generated from, and perform a similar function to the system Global Pilot Code (GPC). The system pilot signals are not, however, considered logical channels.

Several logical communication channels are used over the RF communication link between the RCS and SU. Each logical communication channel either has a fixed, pre-determined spreading code or a dynamically assigned spreading code. For both pre-determined and assigned codes, the code phase is synchronized with the Pilot Code. Logical communication channels are divided into two groups: the Global Channel (GC) group includes channels which are either transmitted from the base station RCS to all remote SUs or from any SU to the RCS of the base station regardless of the SU's identity. The channels in the GC group may contain information of a given type for all users including those channels used by SUs to gain system access. Channels in the Assigned Channels (AC) group are those channels dedicated to communication between the RCS and a particular SU.

The Global Channels (GC) group provides for 1) Broadcast Control logical channels, which provide point to multipoint services for broadcasting messages to all SUs and paging messages to SUs; and 2) Access Control logical channels which provide point-to-point services on global channels for SUs to access the system and obtain assigned channels.

The RCS of the present invention has multiple Access Control logical channels, and one Broadcast Control group. An SU of the present invention has at least one Access Control channel and at least one Broadcast Control logical channel.

The Global logical channels controlled by the RCS are the Fast Broadcast Channel (FBCH) which broadcasts fast changing information concerning which services and which access channels are currently available, and the Slow Broadcast Channel (SBCH) which broadcasts slow changing system information and paging messages. The Access Channel (AXCH) is used by the SUs to access an RCS and gain access to assigned channels. Each AXCH is paired with a Control Channel (CTCH). The CTCH is used by the RCS to acknowledge and reply to access attempts by SUs. The Long Access Pilot (LAXPT) is transmitted synchronously with AXCH to provide the RCS with a time and phase reference.

(CX-52 at 13:66-14:54 (emphasis added).) Thus, the '010 patent discloses that the LAXPT is a pilot code that is transmitted synchronously with the AXCH, and that AXCH is a logical channel.

Disclosed later in the specification:

In addition, there are pilot signals associated with access channels. These are called the Long Access Channel Pilots (LAXPTs). Short access channel pilots (SAXPTs) are also associated with the access channels and used for spreading code acquisition and initial power ramp-up.

(CX-52 at 24:42-47 (emphasis added).) However, the administrative law judge finds that the claims at issue use “associated with” in the sense of a code associated with another code, e.g., a short code to an access code as shown in Table 23 (CX-52 at 23:1-36) with reference to the relationship between LAXPT and SAXPT, i.e. the long pilot code and the short code and not a logical access channel to a pilot code as complainants argued. Based on the foregoing, complainants’ argument is rejected.

b. The claimed phrase “generated using a same code”

Complainants argued that the claimed phrase “generated using a same code” should be construed as “are produced from a common base code,” based on the widely accepted meaning of commonly understood words. (CBr at 42.)

Respondents argued that this claimed phrase should be construed as meaning that the “transmitted signals” are a portion of the “message.” (RBr at Sec. II, p. 47.)

The staff argued that said claimed phrase means “related to.” (SBr at 27.)

Asserted claim 1 of the ‘966 patent reads in pertinent part:

each of the successively transmitted signals and the message are generated using a same code

(CX-2 at 11:16-17.) Asserted claim 5 of the ‘847 patent reads in pertinent part:

wherein the successively transmitted signals and the message are generated using a same code.

(CX-3 at 12:62-63.) Thus, the administrative law judge finds that a person of ordinary skill in the art would conclude that the plain language of the claims at issue state that the signals and the message are produced using the same code. Further, the common specification discloses:

The short codes are generated from a regular length spreading code. A symbol length portion from the beginning of the spreading code is stored and used as the short code for the next 3 milliseconds. Every 3 milliseconds, a new symbol length portion of the spreading code replaces the old short code. Since the spreading code period is an integer multiple of 3 milliseconds, the same short codes are repeated once every period of the spreading code.

(CX-1 at 9:20-28.) Therefore, the common specification discloses that one way of producing a code is using a symbol length portion of the original code. Also, the ‘010 patent discloses:

The spreading code length is also a multiple of 64 and of 96 for

ISDN frame support. The spreading code is a sequence of symbols, called chips or chip values. The general methods of generating pseudorandom sequences using Galois Field mathematics is known to those skilled in the art; however, a unique set, or family, of code sequences has been derived for the present invention. First, the length of the linear feedback shift register to generate a code sequence is chosen, and the initial value of the register is called a "seed". Second, the constraint is imposed that no code sequence generated by a code seed may be a cyclic shift of another code sequence generated by the same code seed. Finally, no code sequence generated from one seed may be a cyclic shift of a code sequence generated by another seed.

(CX-52 at 17:45-60 (emphasis added).) Hence, the administrative law judge finds that the '010 patent discloses that codes may be generated from a "code seed." Thus, the administrative law judge finds that the specification does not contradict the plain meaning. Based on the foregoing, the administrative law judge finds that the claimed phrase "generated using a same code" is construed as "produced from the same code."

c. The claimed phrase "function of a same code"

Complainants argued that the claimed phrase "function of a same code" means "that the access signal depends on and varies with a code, and each of the different codes depends on and varies with the same code." (CBr at 42.)

Respondents argued that "'function of the same code' should be construed to require that the 'different codes' be a portion of the 'access signal.'" (RBr at Sec. II, p. 47.)

The staff argued that the proper construction for the term "function of" is "related to."
(SBr at 27.)

Claim 59 of the '004 patent reads in pertinent part:

 said access signal as transmitted by said subscriber unit and said different codes as transmitted by said subscriber unit each being a

function of a same code.

(CX-1 at 17:24-25.)¹³ The plain language of the claim would indicate some form of relationship between the “access signal” and the “different codes.” No party has pointed to any intrinsic evidence that discloses how a code is a “function of” another code. Yet, the claimed phrase “generated using a same code” discloses a relationship between codes, supported by the specification, that is substantially the same as the relationship disclosed by the plain language of the claim phrase “function of a same code” in issue. Different language in the claims does not require a different meaning. (See Tandon Corp. v. U.S. International Trade Com., 831 F.2d 1017, 1023 (Fed. Cir. 1987) (“Two claims which read differently can cover the same subject matter.”).)

Further, complainants’ expert Vojcic testified:

- Q. Let me ask you to look and talk about the associated function of generating using limitations. I will ask you to look at and ask you whether that corresponds to the opinions you are about to give.
- A. Yes.
- Q. And the limitations refer to an association or function of the same code generated using the same code. What is the same code that you are relying on for purposes of infringement?
- A. The same code that I refer is Clong1 as it is referred in 3GPP standard.
- Q. Let me ask you to look at CDX-308 and ask you whether InterDigital's proposed construction, particularly for "associated with" meaning related, comports with the ordinary meaning of the term?
- A. Yes, it does.

¹³ Asserted claims 6, 9, and 11 of the ‘847 patent in issue use very similar language. See supra.

- Q. Can you explain where and how the short codes and access code portion of the access signal are derived in the '004 patent?
- A. There are multiple places. First, at column 8, lines 9 to 11, explain that there is an advantage of choosing short code lengths such that it divides the access code period evenly and then in lines 20 to 21 of column 9, it says that short codes are generated from a regular length spreading code.

And the figure 10 shows how first short codes are transmitted from spreading code generator 86 to block 90, and after the first power ramp-up is completed, or has been completed, then access code continues to be transmitted, which is shown symbolically at the bottom of this demonstrative where first short codes is selected from long spreading code. And then after that code is detected, it continues to transmit the access code.

- Q. Now, in the figure you have added to the bottom of CDX-308, which shows the short codes and access codes, are those derived from the same spreading code?

- A. Yes, they are.

- Q. Is that consistent with the disclosure in the power ramp-up patents?

- A. Yes, it is.

(Tr. at 554-56 (emphasis added).) Thus, Vojcic testified that one code would be a function of another, in context of the specification, if both codes were generated by the same code generator. Based on the foregoing, the administrative law judge finds that the claimed phrase “function of a same code” should be construed as “produced from the same code.”

Complainants based their argument regarding the interpretation of the claimed phrase in issue on a dictionary definition, viz., “a variable . . . that depends on and varies with another.” (CBr at 42.) Complainants, however, did not explain how that definition fits within the context of the claims or the specification. Moreover, complainants did not explain why a claim term

should be construed in a way not supported by the intrinsic evidence or by their expert.

5. The claimed phrases “carry no data” and “does not include data”

Asserted claims 1 and 2 of the ‘004 patent contain the claimed phrase “carry no data.”

Non-asserted independent claim 30 of the ‘004 patent, from which asserted dependent claim 31 depends, contains the claimed phrase “(a) transmitting a code of a first type, wherein the code of the first type does not include data of the subscriber unit.”

Complainants argued that “carry no data” of asserted claims 1 and 2 should be construed as “not modulated by data.” Complainants further argued that claim 31 should be construed such that the “the code of the first type does not have data particular to the subscriber unit.” (CBr at 45.)

Respondents argued that the claim term “no data” means “no information.” (RBr at Sec. II, p. 54.) Respondents further argued that one skilled in the art would understand that a code carries no data if it conveys no information. (RBr at Sec. II, p. 54.)

The staff argued that the claim phrases “carry no data” and “does not include data” should be construed as meaning that “no data or information are included.” (SBr at 27.)

The administrative law judge has found, supra, that a “code signal” is “a sequence of chips that is transmitted.” Claim 1 of the ‘004 patent reads, in relevant part:

A method for performing power control in a wireless code division multiple access communication system, the method comprising:
transmitting dynamically selected code signals at increasing power levels until an acknowledgement [sic.] is received indicating that one of said dynamically selected code signals was detected,
wherein the transmitted dynamically selected code signals carry no data...

(CX-1 at 10:62-11:2 (emphasis added).) Thus, the “sequence of chips that is transmitted,” i.e.

the code signal itself, is conceptually separate from any “data” carried, because the plain language of the asserted claims 1 and 2 and unasserted claim 3, shows that “data” may be carried, or not be carried by the code signal. The common specification provides:

The pilot code 40 is a spreading code which carries no data bits.
The pilot code 40 is used for subscriber unit 16 acquisition and synchronization, as well as for determining the parameters of the adaptive matched filter used in the receiver.

(CX-1 at 5:8-12.) Thus, the common specification discloses that data can be represented by bits which are carried by the code. As relates to data, the specification also discloses:

When a communication link is desired, the base station 14 must acquire the signal transmitted from the subscriber unit 16 before it can demodulate the data.

(CX-1 at 5:57-59.) The pilot code, short code, and access codes discussed in the common specification relate to acquiring the signal transmitted from the subscriber unit. (See CX-1, Figs. 4, 6A, 6B, 7, and 11B.) Hence, the common specification discloses that the data must be demodulated after the communication link is established. For the data to be demodulated, it must have first been modulated prior to transmission. The specification of the ‘010 patent, in the Description of the Relevant Art section, discloses:

Spread spectrum modulation refers to modulating a information signal with a spreading code signal; the spreading code signal being generated by a code generator where the period Tc of the spreading code is substantially less than the period of the information data bit or symbol signal. The code may modulate the carrier frequency upon which the information has been sent, called frequency-hopped spreading, or may directly modulate the signal by multiplying the spreading code with the information data signal, called direct-sequence spreading (DS). Spread-spectrum modulation produces a signal with bandwidth substantially greater than that required to transmit the information signal. Synchronous reception and despreading of the signal at the receiver recovers the

original information. A synchronous demodulator in the receiver uses a reference signal to synchronize the despreading circuits to the input spread-spectrum modulated signal to recover the carrier and information signals. The reference signal can be a spreading code which is not modulated by an information signal.

(CX-52 at 1:36-54 (emphasis added).) Thus, the administrative law judge finds that the ‘010 patent discloses that a spreading code can be modulated with the information data signal, and that is how the spreading code carries the data.

Based on the foregoing, the administrative law judge finds that the claimed phrase “carry no data” is construed as “not modulated by an information signal.”

As regards the claimed phrase “does not include data” contained in unasserted independent claim 30 from which asserted claim 31 of the ‘004 patent depends, said claim reads, in pertinent part:

- (a) transmitting a code of a first type, wherein the code of the first type does not include data of the subscriber unit;

(CX-1 at 14:12-14.) Based on the plain language of the claim and the portions of the specification cited, supra, the administrative law judge finds that said claimed phrase is construed as “transmitting a code of a first type, wherein the code of the first type is not modulated by an information signal including information of the subscriber unit.”

The administrative law judge rejects the respondents’ and the staff’s arguments that the claimed phrases in issue, viz. “carry no data” and “does not include data,” should be construed as merely “no information,” because the administrative law judge finds that the word “information” is disclosed in the intrinsic evidence as being carried by a signal.¹⁴ For example, in the

¹⁴ The word “information” does not appear in the text of the common specification or any claims of the power ramp-up patents in issue.

Description of the Relevant Art section of the ‘010 patent:

modulating a information signal with a spreading code signal; the spreading code signal being generated by a code generator where the period Tc of the spreading code is substantially less than the period of the information data bit or symbol signal. The code may modulate the carrier frequency upon which the information has been sent, called frequency-hopped spreading, or may directly modulate the signal by multiplying the spreading code with the information data signal, called direct-sequence spreading (DS).

(CX-52 at 1:36-45 (emphasis added).) Moreover, in the Summary of the Invention section of the ‘010 patent:

The present invention is embodied in a multiple access, spread-spectrum communication system which processes a plurality of information signals received simultaneously over telecommunication lines for simultaneous transmission over a radio frequency (RF) channel as a code-division-multiplexed (CDM) signal. The system includes a radio carrier station (RCS) which receives a call request signal that corresponds to a telecommunication line information signal, and a user identification signal that identifies a user to which the call request and information signal are addressed. The receiving apparatus is coupled to a plurality of code division multiple access (CDMA) modems, one of which provides a global pilot code signal and a plurality of message code signals, and each of the CDMA modems combines one of the plurality of information signals with its respective message code signal to provide a spread-spectrum processed signal.

(CX-52 at 4:66-5:15 (emphasis added).) Thus, the administrative law judge finds that the term “information,” alone, is not sufficient to explain the claimed term “data” in light of the common specification and the specification of the ‘010 patent.

6. The claimed phrase “initial power level”

Complainants argued that the claimed phrase “initial power level” should be construed as “the power level at which the first code is transmitted.” (CBr at 47-48.) Complainants further

argued that said construction follows the “widely accepted meaning of commonly understood words.” (CBr at 48.)

Respondents argued that the claimed phrase at issue should be construed as “a power level guaranteed to be lower than the minimum power level required for communicating with the base station.” (RBr at Sec. II, p. 63.) Respondents further argued that “the Common Specification even acknowledged other methods of determining the initial power level and then specifically and unequivocally disclosed the use of those methods (RFF II-703).” (RBr at Sec. II, p. 63.)

The staff argued that the claim phrase at issue should be construed as “a power level guaranteed to be lower than the minimum power level required for communicating with the base station.” (SBr at 28.)

The claimed phrase, “initial power level” is in the language of asserted independent claim 2 of the ‘004 patent. Said claim 2, with emphasis added reads:

A wireless code division multiple access subscriber unit, the subscriber unit comprising: a transmitter configured such that a first code is transmitted at an initial power level wherein the first code is of a first code type and the transmitter further configured to repeatedly transmit dynamically selected codes of said first code type at increasing power levels wherein the transmitted codes of said first code type carry no data; a receiver configured such that an acknowledgement is detected indicating a code of said first type was received; and the transmitter configured such that in response to detecting the acknowledgement, a signal having a second code is transmitted to access a communication channel wherein the second code is associated with the first code.

(CX-1 at 11:8-24 (emphasis added).) Based on the plain and ordinary meaning of the language of the claim term at issue, “an initial power level” is the first power level at which the first code

is transmitted. The claim, however, also discloses that the first code is transmitted at increasing power levels until an acknowledgment indicating receipt of said first code is received. Thus, the initial power level must be lower than, not equal to or greater than, the power level required for detection.

The common specification, in the Summary of the Invention, discloses:

The ramp-up starts from a power level that is guaranteed to be lower than the required power level for detection by the base station. The subscriber unit quickly increases transmission power while repeatedly transmitting the short code until the signal is detected by the base station. Once the base station detects the short code, it sends an indication to the subscriber unit to cease increasing transmission power.

(CX-1 at 3:23-30 (emphasis added).) Hence, the summary, which is not tied to any particular embodiment, specifically discloses that the starting power level is “guaranteed to be lower than the required power level for detection by the base station.” Likewise the Abstract discloses:

The ramp-up starts from a power level that is lower than the required power level for detection by the base station. The power of the short code is quickly increased until the signal is detected by the base station. Once the base station detects the short code, it transmits an indication that the short code has been detected.

(CX-1 (emphasis added).) Although the word “guaranteed” is not used in the Abstract, the Abstract specifically discloses that the power level is lower than the required power level for detection by the base station. The preferred embodiments are described by the common specification in such a way that makes it clear that a power lower than that need to detect the signal is critical to the invention. For example:

In a first embodiment of the present invention the subscriber unit 16 starts transmitting at a power level guaranteed to be lower than what is required and increases transmission power output until the

correct power level is achieved. This avoids sudden introduction of a strong interference, hence improving system 10 capacity.

(CX-1 at 6:1-6 (emphasis added).) Thus, the common specification discloses that said low transmission power addresses a problem that this invention was designed to solve: strong interference. (See CX-1 at 2:21-24 (“The stronger the signal from a sub-scriber unit arrives at the base station, the more interference the base station experiences when receiving and demodulating signals from other subscriber units.”).) Further, Fig. 4, which is described in the common specification as showing the establishment of a communication channel in accordance with the present invention and the tasks performed by the base station (CX-1 at 6:7-10), is a flow chart which discloses that the subscriber unit, to initiate a call, should, inter alia, “start transmitting access code at minimum power” (CX-1, Fig. 4 (step 106) and a base station must, inter alia, to “detect access code at the correct phase once sufficient power has been achieved.” (CX-1, Fig. 4 (step 110).) Hence, Fig. 4 discloses that a subscriber unit must begin transmitting at minimum power, and the base station is expecting it to do so. There are other examples in the common specification disclosing that a subscriber unit must began transmitting at a minimum power to reduce interference. (See, e.g., CX-1 at 6:57-7:2, 7:11-21, 7:65-8:4, 8:24-27, 10:26-36, Figs. 6A, 11A.) The administrative law judge finds no disclosure in the common specification or the ‘010 specification that the transmit power from a subscriber unit may be higher than or even equal to the minimum required to be detected by the base station. Moreover, complainants’ expert has testified:

Q. Sure. In fact, the '004 specification repeatedly states that the initial power level should be below that detectable by the base station?

A. That's the -- that's the intention. And I think that's correct

interpretation, but doesn't necessarily need to happen that way.

(Tr. at 678 (emphasis added).)

Based on the foregoing, the administrative law judge finds that "initial power level" is construed as "a power level lower than the minimum power level required for communicating with the base station."¹⁵

Complainants argued that the claimed phrase "initial power level" should be construed by taking into account the "widely accepted meaning of commonly understood words," which effectively means without taking into account the rest of the claim limitations or the specification. However as found, supra, the claimed phrase "initial power level" is extensively described in the specification, and even the rest of the claim limitations show that complainants' definition of "initial power level" is insufficient.

7. The claimed phrases "transmitting ... at increasing power levels," "transmit ... at increasing power levels," "repeating (a) at increasing power levels," "transmission ... at an increased power level" and "transmitted at an increased power level"

The claimed phrase "transmitting ... at increasing power levels" appears in asserted claim 1 of the '004 patent. (CX-1 at 10:55-56.) The term "transmit ... at increasing power levels" appears in asserted claim 2 of the '004 patent. (CX-1 at 13-14.) The term "repeating (a) at increasing power levels" appears in unasserted claim 30 of the '004 patent, from which asserted claim 31 depends. (CX-1 at 14:21.) The term "transmission ... at an increased power level" appears in asserted claim 1 of the '966 patent (CX-2 at 11:5-6) and asserted claim 5 of the '847 patent. (CX-3 at 12:50-52.) The term "transmitted at an increased power level" appears in

¹⁵ The administrative law judge finds that the claimed phrase "power level" itself is not in dispute and requires no construction, and thus can be used in his construction despite also appearing in the claim phrase to be construed.

asserted claim 6 of the ‘847 patent. (CX-3 at 13:7.)

Complainants argued that said phrases in issue should be construed as “the power level of a transmission is higher than that of a previous transmission,” which is consistent with the plain language and basic English grammar. (CBr at 49.) Complainants also argued that:

The specifications disclose both continuous and continual increases of the power level. (CFF 2.285) The common ordinary meaning of “continual” in conjunction with the express language of the claims (“levels”) does not permit Respondents to limit the increase to a continuous one. A common dictionary definition of “continual” is “reoccurring in steady, usually rapid succession.” (CFF 2.286) Persons skilled in the art would understand that this common, ordinary meaning of the term “continual” encompasses increasing the transmission power of the subscriber unit, such that a later short code is transmitted at a constant and higher power level than a previous short code was transmitted. (CFF 2.287)

(CBr at 50.)

Respondents argued that “transmitting … at increasing power levels” should be construed as “the transmission of short codes is continuous, the power level of the beginning of a short code is higher than that of the end of the previous code signal, and the power level of a short code increases during transmission.” (RBr at Sec. II, p. 58.)

The staff argued that the claimed phrases should be construed as “the power level of a transmission is higher than that of a previous transmission.” (SBr at 32.) The staff further argued that said construction is “consistent with the plain meaning of those terms and … the intrinsic record discloses no justification to narrow that plain meaning...” (SBr at 32.)

As the administrative law judge has found, supra, the claimed phrase “power level” is not in dispute. The administrative law judge further finds that the claimed terms “transmission” and “transmitting” are also not in dispute. The plain and ordinary language definition of “increasing”

is getting higher or larger.

Based on the foregoing and on the plain and ordinary language of each of the claims in issue, the administrative law judge finds that the claimed phrases in issue should be interpreted as “the power level of a transmission is higher than that of a previous transmission.” Therefore, the claimed language in issue would allow for either a stepwise increase, i.e. each distinct transmission is at a single power level higher than the prior transmission, or a continuous increase, i.e. where each transmission starts at a power level higher than the prior transmission and then increases in power during transmission.

Referring to the common specification, step 108 of Fig. 4 reads “continuously increase transmission power while transmitting.” The common specification, further describing said step 108, reads:

When it is desired to initiate a communication link, the subscriber unit 16 starts transmitting the access code 42 back to the base station 14 (step 106). The subscriber unit 16 continuously increases the transmission power while retransmitting the access code 42 (step 108) until it receives an acknowledgment from the base station 14. The base station 14 detects the access code 42 at the correct phase once the minimum power level for reception has been achieved (step 110). The base station 14 subsequently transmits an access code detection acknowledgment signal (step 112) to the subscriber unit 16. Upon receiving the acknowledgment, the subscriber unit ceases the transmission power increase (step 114). With the power ramp-up completed, closed loop power control and call setup signaling is performed (step 116) to establish the two-way communication link.

Although this embodiment limits subscriber unit 16 transmission power, acquisition of the subscriber unit 16 by the base station 14 in this manner may lead to unnecessary power overshoot from the subscriber unit 16, thereby reducing the performance of the system 10.

The transmission power output profile of the subscriber unit 16 is shown in FIG. 5. At t_0 , the subscriber unit 16 starts transmitting at the starting transmission power level P_0 , which is a power level guaranteed to be less than the power level required for detection by the base station 14. The subscriber unit 16 continually increases the transmission power level until it receives the detection indication from the base station 14. For the base station 14 to properly detect the access code 42 from the subscriber unit 16 the access code 42 must: 1) be received at a sufficient power level; and 2) be detected at the proper phase. Accordingly, referring to FIG. 5, although the access code 42 is at a sufficient power level for detection by the base station 14 at t_p , the base station 14 must continue searching for the correct phase of the access code 42 which occurs at t_A .

Since the subscriber unit 16 continues to increase the output transmission power level until it receives the detection indication from the base station 14, the transmission power of the access code 42 exceeds the power level required for detection by the base station 14. This causes unnecessary interference to all other subscriber units 16. If the power overshoot is too large, the interference to other subscriber units 16 may be so severe as to terminate ongoing communications of other subscriber units 16.

(CX-1 at 6:57-7:34 (emphasis added).) Thus, according to common specification the transmission power increases for each re-submission of the access code, which increase ceases after the access code has been detected. As disclosed by the common specification with respect to Fig. 5 the transmission power increases during the transmission of an individual access code, resulting in an overshoot. The common specification further discloses:

Referring to FIG. 7, although the starting power level P_0 is the same as in the prior embodiment, the subscriber unit 16 may ramp-up the transmission power level at a much higher rate by using a short code. The short code is quickly detected after the transmission power level surpasses the minimum detection level, thus minimizing the amount of transmission power overshoot.

* * *

An overview of the ramp-up procedure in accordance with the preferred current invention is summarized in FIGS. 11A and 11B. The base station 14 transmits a pilot code while searching for the short code (step 200). The subscriber unit 16 acquires the pilot code transmitted from the base station 14 (step 202), starts transmitting a short code starting at a minimum power level P_0 , which is guaranteed to be less than the required power, and quickly increases transmission power (step 204). Once the received power level at the base station 14 reaches the minimum level needed for detection of the short code (step 206) the base station 14 acquires the correct phase of the short code, transmits an indication of this detection, and begins searching for the access code (step 208). Upon receiving the detection indication, the subscriber unit 16 ceases transmitting the short code and starts transmitting an access code. The subscriber unit 16 initiates a slow ramp-up of transmit power while sending the access code (step 210). The base station 14 searches for the correct phase of the access code by searching only one phase out of each short code length portion of the access code (step 212). If the base station 14 searches the phases of the access code up to the maximum round trip delay and has not detected the correct phase, the search is repeated by searching every phase (step 214). Upon detection of the correct phase of the access code by the base station 14, the base station 14 sends an acknowledgment to the subscriber unit 16 (step 216). Reception of the acknowledgment by the subscriber unit 16 concludes the ramp-up process.

(CX-1 at 9:7-13, 10:23-50 (emphasis added).) Thus, this FIG. 7 embodiment discusses “overshoot,” therefore disclosing that the transmission power of the short code is increased during transmission, just as in the embodiment cited, supra. Moreover, the ‘010 patent discloses:

The SU starts from very low transmit power and increases its power level while transmitting the short code SAXPT; once the RCS modem detects the short code it turns off the traffic light. Upon detecting the changed traffic light, the SU continues ramping-up at a slower rate this time sending the LAXPT. Once the RCS modem acquires the LAXPT and sends a message on CTCH to indicate this, the SU keeps its transmit (TX) power constant and sends the MAC-Access-Request message.

(CX-52 at 58:53-62 (emphasis added).) Hence, the ‘010 patent discloses increasing the power

level of the short code transmission during transmission. Moreover, the Field of the Invention section of the common specification, which is part of the Background of the Invention section, reads:

The present invention relates generally to CDMA communication systems. More specifically, the present invention relates to a CDMA communication system which utilizes the transmission of short codes from subscriber units to a base station to reduce the time required for the base station to detect the signal from a subscriber unit. The improved detection time allows a faster ramp-up of the initial transmit power from the subscriber units while reducing the unnecessary power overshoot.

(CX-1 at 1:24-32 (emphasis added).) As found, supra, the asserted claims of the ‘004, ‘966 and ‘847 patents show that the invention is a CDMA system. In addition, the common specification discloses that one of the stated goals of the invention is to reduce overshoot in CDMA systems which, as shown, supra, occurs because the power level of a short code or access code is increased during the time in which said code is being transmitted. Therefore, the administrative law judge finds that the common specification discloses that the power level of a transmission increases during the transmission, and that such an increase is important to the invention. Thus, reading the claims in light of the common specification and the specification of the ‘010 patent, which has been found to be incorporated by reference into the common specification, the administrative law judge finds that the phrases at issue should be construed as “the power level of the beginning of a code signal is higher than that of the end of the previous code signal, and the power level of a code signal increases during transmission.”

Complainants have argued that the “common, ordinary meaning of the term ‘continual’ encompasses increasing the transmission power of the subscriber unit, such that a later short code

is transmitted at a constant and higher power level than a previous short code was transmitted.”

(CBr at 50.) In other words, complainants argued that the language of the claims could encompass both increasing the power level of a transmission during the transmission, as well as increasing the power level of a transmission in relation to a prior transmission while leaving the power level of that transmission at a constant level. The staff has argued that the plain meaning of the claim phrases at issue should control. (SBr at 32.) Yet, as found, supra, the language of the asserted claims, when read in light of the specification, do not support complainants’ or staff’s arguments. Also, as found, supra, the common specification discloses that the fact that the power level increases during the transmission is an integral part of the invention.

Respondents argued that “[t]he Common Specification consistently and exclusively describesx the ramp-up procedure as a ‘continuous’ increase in transmission power, and never even mentions a scenario where there is a break or drop in the transmission power (RFF II-657-660).” (RBr at Sec. II, p. 58.) As found, supra, the plain language of the claims is broad enough to encompass both a continuous and a non-continuous transmission of code signals. The common specification further discloses, in reference to a preferred embodiment:

Although the same short code may be reused by the subscriber unit 16 , in the preferred embodiment of the present invention the short codes are dynamically selected and updated in accordance with the following procedure. Referring to FIG. 8, the period of the short code is equal to one symbol length and the start of each period is aligned with a symbol boundary. The short codes are generated from a regular length spreading code. A symbol length portion from the beginning of the spreading code is stored and used as the short code for the next 3 milliseconds. Every 3 milliseconds, a new symbol length portion of the spreading code replaces the old short code. Since the spreading code period is an integer multiple of 3 milliseconds, the same short codes are repeated once every period of the spreading code.

(CX-1 at 9:14-28 (emphasis added).) Also, Fig. 8 shows no gaps between the short code transmissions. (CX-1 at Fig. 8.) Complainants have not shown any support in said specification for any such gaps. However, unlike the power level increasing during transmission, the administrative law judge finds no disclosure in the specification that teaches against said gaps.

Thus, the plain language of the claims controls and the administrative law judge rejects respondents' argument.

8. The claimed phrases "repeatedly transmit," "successively transmits" and "repeats the transmitting"

Asserted claim 2 of the '004 patent recites in part "repeatedly transmit." Asserted claim 1 of the '966 patent and claim 5 of the '847 patent contain the limitation "successively transmits." Asserted claim 59 of the '004 patent and claim 11 of the '847 patent recite in part "repeats the transmitting." Asserted claim 9 of the '847 patent recites in part "repeating step (f)." The administrative law judge refers to said claimed phrase as the "repeating" terms.

Complainants argued that "each of the above claim terms means 'to transmit one after the other'" and that said construction is consistent with the widely accepted meaning of commonly understood words. (CBr at 52.) Complainants also argued that said construction is supported by the common specification, because said specification nowhere indicates that continuous, uninterrupted transmission of the short codes is the only method that can be used. (CBr at 52.)

Respondents argued that said claim phrases in issue should be construed as "transmitting signals in an uninterrupted sequence." (RBr at Sec. II, p. 65.) The respondents further argued that "the only method of transmission disclosed in the Common Specification is continuous - meaning no gaps..." (RBr at Sec. II, p. 66.)

The staff argued that said phrases in issue should be construed as “to transmit one after the other.” (SBr at 32.)

The administrative law judge finds, based on the plain meaning of the asserted claims, supra that the “repeating” terms should be construed as “to transmit one after the other.” Based on the same findings, supra made for the claimed term “transmitting . . . at increasing power levels,” supra, the administrative law judge rejects respondents’ argument that the signals must be transmitted in an uninterrupted sequence. He also finds that “sequence” is substantially the same as “one after the other” and that with the exception of said rejected argument of respondents, there is no substantive difference between the constructions of the parties.

9. The claimed phrases “synchronize to the pilot signal,” “synchronize to a pilot signal,” “synchronizing to the pilot signal,” “synchronizing to a pilot signal” and “re-synchronize to the pilot signal”

Said claimed phrases in issue appear in asserted claims 5, 6, 9, and 11 of the ‘847 patent. (CX-5 at 12:38-40; 13:3, 14:17, 15:1, 3-5.)

Complainants argued that “[t]he process of synchronization is so routine and commonplace that InterDigital did not believe a claim construction of this term was necessary.” (CBr at 53.) Complainants argued that, if it is necessary to do so, the claimed phrases like “synchronizing to a pilot signal transmitted by said base station” should be construed as “establishing a timing reference with the pilot signal transmitted by said base station.” (CBr at 53.) Complainants further argued that “re-synchronize to the pilot signal” should be construed as re-establishing the timing reference between the subscriber unit’s locally generated code and the pilot signal received from the base station. (CBr at 55-56.)

Respondents argued that “synchronize/synchronizing to a/the pilot signal” would be

construed, by one of ordinary skill in the art, to mean “to align the beginning of the subscriber unit’s receive and transmit spreading codes to the beginning of a pilot code.” (RBr at Sec. II, p. 68.) The respondents further argued that the common specification only discloses one type of synchronization. (RBr at Sec. II, pp. 68-69.) Respondents also argued that “re-synchronize to the pilot signal” should mean “re-aligning the beginning of the subscriber unit’s receive and transmit spreading codes to the beginning of a pilot code when the beginning of the receive and transmit spreading codes are not in alignment with the beginning of the pilot code or the pilot signal has been lost.” (RBr at Sec. II, p. 68.)

The staff argued that said synchronizing claim terms should be construed as “to align the beginning of the subscriber unit’s receive and transmit spreading codes to the beginning of a pilot code.” (SBr at 33.) The staff further argued that “re-synchronize to the pilot signal” is “re-aligning the beginning of the subscriber unit’s receive and transmit spreading codes to the beginning of the pilot code when the beginning of the receive and transmit spreading codes are not in alignment with the beginning of the pilot code or the pilot signal has been lost.” (SBr at 33.)

Asserted claim 5 of the ‘847 patent reads in relevant part:

A wireless code division multiple access (CDMA) subscriber unit comprising:

a circuit configured to receive and down convert radio frequency signals to produce baseband signals, the baseband signals including a pilot signal and a paging message, the paging message being associated with the subscriber unit,

wherein the circuit is further configured to synchronize to the pilot signal and demodulate the paging message...

(CX-3 at 12:32-41 (emphasis added).) Asserted claim 6 reads in relevant part:

synchronizing to a pilot signal transmitted by said base station...

(CX-3 at 13:1-2.) Asserted claim 9 reads in relevant part:

(b) down converting the received radio frequency signals to produce baseband signals, the baseband signals include a pilot signal and a paging message, the paging message being associated with the subscriber unit;

(c) synchronizing to the pilot signal...

(CX-3 at 14:16 (emphasis added).) Asserted claim 11 reads in relevant part:

a circuit configured to synchronize to a pilot signal transmitted by the base station wherein, the circuit is further configured to re-synchronize to the pilot signal if the subscriber unit becomes unsynchronized to the pilot signal during an idle period;

(CX-3 at 15:1-5 (emphasis added).) The administrative law judge finds that the language of the claims supra does not explain how to perform said synchronizing, although said language shows that the pilot signal must first be received from the base station. The common specification discloses, in reference to a preferred embodiment:

Referring to FIG. 3, the signaling between a base station 14 and a subscriber unit 16 is shown. In accordance with the present invention, the base station 14 continuously transmits a pilot code 40 to all of the subscriber units 16 located within the transmitting range of the base station 14. The pilot code 40 is a spreading code which carries no data bits. The pilot code 40 is used for subscriber unit 16 acquisition and synchronization, as well as for determining the parameters of the adaptive matched filter used in the receiver.

The subscriber unit 16 must acquire the pilot code 40 transmitted by the base station 14 before it can receive or transmit any data. Acquisition is the process whereby the subscriber unit 16 aligns its locally generated spreading code with the received pilot code 40. The subscriber unit 16 searches through all of the possible phases of the received pilot code 40 until it detects the correct phase, (the

beginning of the pilot code 40).

The subscriber unit 16 then synchronizes its transmit spreading code to the received pilot code 40 by aligning the beginning of its transmit spreading code to the beginning of the pilot code 40. One implication of this receive and transmit synchronization is that the subscriber unit 16 introduces no additional delay as far as the phase of the spreading codes are concerned. Accordingly, as shown in FIG. 3, the relative delay between the pilot code 40 transmitted from the base station 14 and the subscriber unit's transmit spreading code 42 received at the base station 14 is $2\Delta t$, which is solely due to the round trip propagation delay.

In the preferred embodiment, the pilot code is 29,877,120 chips in length and takes approximately 2 to 5 seconds to transmit, depending on the spreading factor. The length of the pilot code 40 was chosen to be a multiple of the data symbol no matter what kind of data rate or bandwidth is used. As is well known by those of skill in the art, a longer pilot code 40 has better randomness properties and the frequency response of the pilot code 40 is more uniform. Additionally, a longer pilot code 40 provides low channel cross correlation, thus increasing the capacity of the system 10 to support more subscriber units 16 with less interference. The use of a long pilot code 40 also supports a greater number of random short codes. For synchronization purposes, the pilot code 40 is chosen to have the same period as all of the other spreading codes used by the system 10. Thus, once a subscriber unit 16 acquires the pilot code 40, it is synchronized to all other signals transmitted from the base station 14.

During idle periods, when a call is not in progress or pending, the subscriber unit 16 remains synchronized to the base station 14 by periodically reacquiring the pilot code 40. This is necessary for the subscriber unit 16 to receive and demodulate any downlink transmissions, in particular paging messages which indicate incoming calls.

(CX-1 at 5:4-56 (emphasis added).) Thus, the common specification discloses that synchronization is aligning the beginning of a receive or transmit spreading code to the beginning of the pilot code. Further, the specification of the '010 patent discloses:

Referring to FIGS. 9 and 12, the RF receiver 950 of the present embodiment accepts analog input I and Q CDMA channels, which are transmitted to the CDMA modems 1210, 1211, 1212, 1215 through the MIUs 931, 932, 933 from the VDC 940. These I and Q CDMA channel signals are sampled by the CDMA modem receive section 1302 (shown in FIG. 13) and converted to I and Q digital receive message signal using an Analog to Digital (AID) converter 1730, shown in FIG. 17. The sampling rate of the A/D converter of the exemplary embodiment of the present invention is equivalent to the despreading code rate. The I and Q digital receive message signals are then despread with correlators using six different complex spreading code sequences corresponding to the despreading code sequences of the four channels (TR0, TR1, TR2, TR3), APC information and the pilot code.

Time synchronization of the receiver to the received signal is separated into two phases; there is an initial acquisition phase and then a tracking phase after the signal timing has been acquired. The initial acquisition is done by shifting the phase of the locally generated pilot code sequence relative to the received signal and comparing the output of the pilot despreaders to a threshold. The method used is called sequential search. Two thresholds (match and dismiss) are calculated from the auxiliary despreaders. Once the signal is acquired, the search process is stopped and the tracking process begins. The tracking process maintains the code generator 1304 (shown in FIGS. 13 and 17) used by the receiver in synchronization with the incoming signal.

(CX-52 at 44:39-67 (emphasis added).) Hence, the administrative law judge finds that the '010 patent discloses that synchronization can be accomplished by shifting the phase of the pilot code sequence relative to the received signal until they are aligned, or match. Along the same lines, the '010 patent specification further discloses:

The acquisition and tracking algorithms are used by the receiver to determine the approximate code phase of a received signal, synchronize the local modem receiver despreaders to the incoming pilot signal, and track the phase of the locally generated pilot code sequence with the received pilot code sequence. Referring to FIGS. 13 and 17, the algorithms are performed by the Modem controller 1303, which provides clock adjust signals to code generator 1304.

These adjust signals cause the code generator for the despreaders to adjust locally generated code sequences in response to measured output values of the Pilot Rake 1711 and Quantile values from quantile estimators 1723B. Quantile values are noise statistics measured from the In-phase and Quadrature channels from the output values of the AUX Vector Correlator 1712 (shown in FIG. 17). Synchronization of the receiver to the received signal is separated into two phases; an initial acquisition phase and a tracking phase. The initial acquisition phase is accomplished by clocking the locally generated pilot spreading code sequence at a higher or lower rate than the received signal's spreading code rate, sliding the locally generated pilot spreading code sequence and performing sequential probability ratio test (SPRT) on the output of the Pilot Vector correlator 1711. The tracking phase maintains the locally generated spreading code pilot sequence in synchronization with the incoming pilot signal.

(CX-52 at 46:66-47:23 (emphasis added).) The administrative law judge finds that the portions of the '010 specification cited, supra, disclose that the receiver is synchronized to the received signal, and do not mention the transmitter of the subscriber unit. Thus, he finds that the common specification discloses that synchronization is to align the beginning of the subscriber unit's receive and transmit spreading codes to the beginning of a pilot code. The specification of the '010 patent further discloses matching the two codes which, of necessity, would mean that the beginning of the pilot code is aligned with the beginning of the spreading code. Moreover, respondents' expert Lanning has testified:

- Q. Can we look in RDX-1197. Can you tell us how, if at all, this excerpted portion of the specification informs your opinion?
- A. Yes. It is almost identical to the construction. It is from CX-001, column 5, lines 13 through 31. And it states in the highlighted portion, "the subscriber unit 16 then synchronizes its transmit spreading code to the received pilot code 40 by aligning the beginning of its transmit spreading code to the beginning of the pilot code 40."

Q. Can you tell us whether or not, in your view, there is any difference between synchronizing and resynchronizing in the context of this patent?

A. No, there is not. The patent discloses that the resynchronization procedure, if the mobile happens to lose synchronization with the base station is accomplished using the same procedure.

(Tr. at 1661 (emphasis added).)

Based on the foregoing, the administrative law judge finds that the “synchronize/synchronizing” claimed phrases in issue should be construed as “to align the beginning of the subscriber unit’s spreading codes to the beginning of a pilot code.” Thus it follows that “re-synchronize to the pilot signal” should be construed as “re-aligning the beginning of the subscriber unit’s spreading codes to the beginning of a pilot code when the beginning of the spreading codes are not in alignment with the beginning of the pilot code or the pilot signal has been lost.”

Complainants argued that:

The incorporated ‘010 patent describes an embodiment in which the subscriber unit adjusts the phase of its locally generated pilot and spreading codes relative to the received pilot code (Global Pilot) to make the subscriber unit appear to the base station to be located at a predetermined fixed distance from the base station.

* * *

In the synchronization scheme described in the incorporated ‘010 patent, a timing reference between the locally generated codes and the received pilot code is established even though the beginning of the locally generated transmit code is offset from the beginning of the received pilot code by an amount corresponding to the predetermined fixed distance.

(CFF 2.317, 2.318 (emphasis added).) However, the ‘010 patent discloses, in relevant part:

However, after the initial acquisition, the SU can calculate the delay between the RCS and the SU by measuring the time difference between sending a short access message to the RCS and receiving an acknowledgment message, and using the received Global Pilot channel as a timing reference. The SU can also receive the delay value by having the RCS calculate the round trip delay difference from the code phase difference between the Global Pilot code generated at the RCS and the received assigned pilot sequence from the SU, and then sending the SU the value on a predetermined control channel. Once the round trip delay is known to the SU, the SU may adjust the code phase of the locally generated assigned pilot and spreading code sequences by adding the delay required to make the SU appear to the RCS to be at the predetermined fixed distance from the RCS. Although the method is explained for the largest delay, a delay corresponding to any predetermined location in the system can be used.

(CX-52 at 36:26-43 (emphasis added).) Thus, the '010 patent discloses that, after the initial acquisition, an offset may be added to "adjust the code phase" of the locally-generated pilot and spreading code sequences to fool the base station into believing the SU is at a particular distance away from the base station. Moreover, as seen from the foregoing, the system still uses the Global Pilot channel as a timing reference, and thus the locally generated codes are still being synchronized to the pilot code as described in the prior analysis, supra, with the only difference being where the "beginning" of the locally-generated codes is changed in such a way to make the SU appear to be either further or nearer the base station. Based on the foregoing, the administrative law judge rejects complainants' offset argument supra.

Respondents argued that the construction of the synchronization claim terms at issue should include the phrase "receive and transmit spreading codes." Synchronizing to the pilot code could refer to either a receive or transmit spreading code, as found, supra. The administrative law judge finds that the language of the asserted claims, however, discloses that

synchronization is referred to only in terms of the receiver, or synchronization between the receiver and the received pilot code. Thus, he rejects respondents' argument, as respondents appear to be importing language from other elements of the asserted claim into the claimed synchronization terms.

F. Infringement

The unfair acts covered under Section 337 include "all forms of infringement, including direct, contributory, and induced infringement." Certain Home Vacuum Packaging Machines, Inv. No. 337-TA-496, Order No. 44, 2004 ITC LEXIS 202 * 2 n.2 (March 3, 2004). To establish infringement, there must be a preponderance of evidence. See Kao Corp. v. Unilever United States, Inc., 441 F.3rd 963 (Fed. Cir. 2006). A determination of patent infringement encompasses a two-step analysis. Advanced Cardiovascular Systems, Inc. v. Scimed Life Systems, Inc., 261 F.3d 1329, 1336 (Fed. Cir. 2001) (Scimed). First, the court determines the scope and meaning of the patent claims asserted, and then properly construed claims are compared to the allegedly infringing device. Id. "Literal infringement of a claim exists when each of the claim limitations reads on, or in other words is found in, the accused device." Allen Engineering Corp. v. Bartell Indus., 299 F.3d 1336, 1345 (Fed. Cir. 2002).

Under the doctrine of equivalents, "a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is equivalence between the elements of the accused product or process and the claimed elements of the patented invention." Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 21 (1997). Equivalency may be determined using the "triple identity test" and thus "focusing on the function served by a particular claim element, the way that element serves that function, and the

result . . . obtained by that element . . . ” Id. at 39. Regardless of the linguistic framework of the test used, the “essentially inquiry” is: “[d]oes the accused product or process contain elements identical or equivalent to each claimed element of the patented invention?” Id. at 40.

Direct infringement includes the making, using, selling, offering for sale and importing into the United States an infringing product, without authority. 35 U.S.C. § 271(a). To prove direct infringement, the plaintiff must establish by a preponderance of the evidence that one or more claims of the patent read on the accused device either literally or under the doctrine of equivalents. Scimed, 261 F.3d at 1336.

A person may also infringe a patent claim indirectly. Section 271 (b) of the Patent Act provides that “[w]hoever actively induces infringement of a patent shall be liable as an infringer.” To establish liability for induced infringement, “a patent holder must prove that once the defendants knew of the patent, they actively and knowingly aided and abetted another’s direct infringement.” DSU Med. Corp. v. JMS Co., 471 F.3d 1293, 1305 (Fed. Cir. 2006) (DSU Med. Corp.) (citations omitted). However, “[t]he mere knowledge of possible infringement by others does not amount to inducement; specific intent and action to induce infringement must be proven.” Id.

Additionally, 35 U.S.C. § 271(c) provides that:

[w]hoever offers to sell or sells within the United States . . . a component of a patented machine, manufacture, combination or composition . . . 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 of commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

Thus, “[i]n order to succeed on a claim of contributory infringement, in addition to proving an

act of direct infringement, plaintiff must show that defendant knew that the combination for which its components were especially made was both patented and infringing, and that defendant's components have no substantial non-infringing uses.” Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1312 (Fed. Cir. 2005).

Direct infringement is a necessary element of induced and contributory infringement. DSU Med. Corp., 471 F.3d at 1303.

1. Accused Products

All of the accused Nokia handsets, which would include those identified in Section III supra, operate in the same manner with respect to the features accused of infringing the asserted claims in the power ramp-up patents. (CFF 3.402 (undisputed).) In particular, the random access procedure is the same for all accused Nokia handsets. (CFF 3.526 (undisputed).)

2. The ‘004 Patent

In issue are asserted claims 1, 2, 31 and 59 of the ‘004 patent.

Referring to claim 1 of the ‘004 patent in issue, complainants argued that the accused products literally meet the claim limitation “transmitting dynamically selected code signals at increasing power levels...” under both respondents’ and complainants’ claim construction. (CBr at 93, 112.) More specifically, complainants argued that all of the “increased power level” and “increasing power levels” and “repeatedly/successively transmit” limitations are met because, as shown in the {

} (CBr at 94.) Further, complainants argued that:

Nokia's construction for the "repeatedly-successively transmit" limitations requires "transmitting signals in an uninterrupted sequence." Assuming Nokia's construction is adopted, the accused handsets infringe the "increased power level"/"increasing power levels" and "repeatedly-successively transmit" limitations under the doctrine of equivalents. (CFF 3.061.)

(CBr at 112.) Complainants also argued that increasing the power level of successive PRACH Preambles in discrete, interrupted steps is equivalent to and known to be interchangeable with continuously increasing the power level in a linear ramp, as required by Nokia's claim construction. (CBr at 112-13.)

Respondents argued that the claimed phrase "code signals" corresponds to a "short code, and construed as meaning a "spreading code or a portion of a spreading code." (RBr at Sec. II, p. 21.){

}

{

}

(SBr at 46-47.)

The administrative law judge has found, supra, that the claimed phrase “code signal” should be construed as “a sequence of chips that is transmitted,” and are a spreading code or a portion of a spreading code, as per the specification. Further, the administrative law judge has construed “increasing power level” as “the power level of the beginning of a code signal is higher than that of the end of the previous code signal, and the power level of a code signal increases during transmission”{

}

The WCDMA standard specifies the power control methods that user equipment in WCDMA systems must use in performing a random access procedure (RACH procedure). (CFF 3.513 (undisputed).) As found, supra,{

}

{

} According to the WCDMA standard, a handset transmits preambles in a RACH procedure. (CFF 3.539 (undisputed).) Thus, the UE in a WCDMA system sends PRACH preambles during the random access procedure, or power ramp-up phase, in order to get access to the base station. During the random access procedure in WCDMA, a handset first transmits PRACH preambles, followed by a PRACH message. (CFF 3.540 (undisputed in relevant part).) {

} The administrative law judge has explicitly found, supra, in the context of the power ramp-up patents, that the power level of a transmission increases during the transmission. Therefore, the administrative law judge finds that complainants have not established, by a preponderance of evidence, that the accused products meet the limitation of “increasing power level.”

Regarding whether a PRACH preamble is a spreading code or a portion of a spreading code, according to the WCDMA standards, a preamble is a combination of signature and scrambling code. (CFF 3.619 (undisputed).) If either portion of the preamble, viz. said scrambling code or said signature, is a spreading code or a portion of a spreading code, then this limitation may be literally met.

Regarding whether the PRACH scrambling code is a spreading code or a portion of a spreading code, CX-58 is titled “Universal Mobile Telecommunications System (UMTS); Spreading and modulation (FDD) (3GPP TS 25.213 version 5.6.0 Release 5).” (CX-58, Title

Page.) CX-58 describes spreading as follows:

Spreading is applied to the physical channels. It consists of two operations. The first is the channelisation operation, which transforms every data symbol into a number of chips, thus increasing the bandwidth of the signal. The number of chips per data symbol is called the Spreading Factor (SF). The second operation is the scrambling operation, where a scrambling code is applied to the spread signal.

With the channelisation, data symbols on so-called I- and Q- branches are independently multiplied with an OVSF^[16] code. With the scrambling operation, the resultant signals on the I- and Q-branches are further multiplied by [a] complex-valued scrambling code, where I and Q denote real and imaginary parts, respectively.

(CX-58 at 7.) CX-58 also refers to the channelisation being performed by “channelisation code C_c .” (CX-58 at 7.) A channelization code is generally referred to as spreading code, while a scrambling code is a separate code, as is shown by the following:

Figure 2 illustrates the principle of the spreading and scrambling of the PRACH message part, consisting of data and control parts. The binary control and data parts to be spread are represented by real-valued sequences, i.e. the binary value "0" is mapped to the real value +1, while the binary value "1" is mapped to the real value -1. The control part is spread to the chip rate by the channelisation code cc , while the data part is spread to the chip rate by the channelisation code cd .

¹⁶ “OVSF” is an abbreviation of “Orthogonal Variable Spreading Factor.” (CX-58 at 7.)

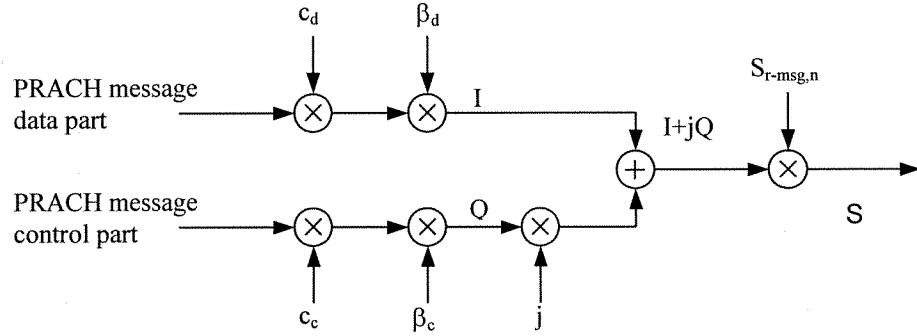


Figure 2: Spreading of PRACH message part

After channelisation, the real-valued spread signals are weighted by gain factors, β_c for the control part and β_d for the data part. At every instant in time, at least one of the values c and d has the amplitude 1.0. The β -values are quantized into 4 bit words. The quantization steps are given in section 4.2.1.

After the weighting, the stream of real-valued chips on the I- and Q-branches are treated as a complex-valued stream of chips. This complex-valued signal is then scrambled by the complex-valued scrambling code $S_{r\text{-}msg,n}$. The 10 ms scrambling code is applied aligned with the 10 ms message part radio frames, i.e. the first scrambling chip corresponds to the beginning of a message part radio frame.

(CX-58 at 9-10.) Therefore, the administrative law judge finds that said channelisation code C_c

is an OVSF code and is a spreading code, and a scrambling code is not a spreading code.

Therefore, the PRACH preamble scrambling code is not a spreading code or a portion of a spreading code.

{

}

{

{

} The administrative law

judge finds that,{

} the PRACH preamble signature is not a spreading code or a portion of a spreading code.

Moreover, the administrative law judge has found, infra, that the PRACH signature is data. Therefore, the PRACH preamble, taken as a whole, cannot be a spreading code. Further, complainants have admitted that{

} (RFF II-450 (undisputed).) Based on the foregoing, the administrative law judge finds that the accused products do not literally practice the element “transmitting dynamically selected code signals at increasing power levels...” of asserted claim 1 of the ‘004 patent.

Regarding the doctrine of equivalents, equivalency may be determined by analyzing the function served by a particular claim element, the way that element serves that function, and the result obtained by that element. The administrative law judge has found, supra, that the codes in issue{

} Thus, at issue under the doctrine of equivalents, is only whether the PRACH preambles of the accused products are equivalent to the “code signals” of the claim, which code signal the administrative law judge has construed as “a sequence of chips” that is a spreading code.

The PRACH preamble is a sequence of chips. (CFF 3.730 (undisputed); CX-58 at 15; CX-453 at 14.) {

} The common specification

discloses that the code signal used is randomly generated from a spreading code, and is a spreading code or a portion of a spreading code. (See, supra; see also CX-1 at 5:33-50.) {

} Based on the foregoing, complainants have not shown by a preponderance of the evidence that this claim element is practiced by the accused products under the doctrine of equivalents.

Regarding the claimed phrase “wherein the transmitted dynamically selected code signals carry no data,” complainants argued that each of the accused products literally practices the said claim element under Nokia’s construction. (CBr at 109.) More specifically, complainants argued that the {

}

{

} (CBr at 110.)

Respondents argued that the PRACH preambles do not meet this claim limitation because,{

} (RBr at Sec. II, p.

56.)

The staff argued that the preponderance of the evidence does not demonstrate that the accused Nokia handsets literally infringe any asserted claim of the short code ramp-up patents. (SBr at 47.)

The administrative law judge has construed the claimed phrase “carry no data” as “not modulated by an information signal.” {

}

As for the PRACH signature, it is undisputed that{

} (CX-58 at 15-16.) A scrambling code is a code that serves to scramble other codes. (CX-58 at 12-15.) The PRACH preamble scrambling code, however, is unique to a particular cell. (CFF 3.567 (undisputed); CX-58 at 15.) As stated, supra, {

} (CFF 3.619 (undisputed).) Therefore, the administrative law judge finds that the PRACH preamble is modulated by data, as the signal, as modulated by the scrambling code, uniquely identifies the cell.

Moreover, it is undisputed that{

} (CX-565 at 39; CX-564 at 304-305, 503.)

{

} Based on the foregoing, the administrative law judge finds that complainants have not shown by a preponderance of the evidence that this element is practiced by the accused products.

Complainants argued that the accused products literally practice the claimed phase “and in response to detecting the acknowledgment, transmitting an access signal...” because each

{

}

The staff argued that “the preponderance of the evidence does not show that the accused Nokia handsets contain, either literally or by equivalents, the ‘short code’ limitations” of the power ramp-up patents in issue. (SBr at 48.)

The administrative law judge has found, supra, that an “access signal” is a known sequence of chips that is transmitted during power ramp-up to facilitate the initiation of communications, and must be a spreading code.{

}

{

}

The administrative law judge has found, supra, that a scrambling code is not a spreading code, either literally or under the doctrine of equivalents. Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that the accused products practice this element.

Regarding the claimed phrase “wherein the access signal is associated with the dynamically selected code signals...” the administrative law judge has found, supra, that the accused products contain{ } Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that this element is practiced by the accused products.

Referring to the claimed phrase “and each of the dynamically selected code signals are shorter than the access signal.” The administrative law judge has found, supra, that the accused products contain{ } Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that this element is practiced by the accused products.

Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that respondents accused products infringe claim 1 of the ‘004 patent.

Referring to claim 2 of the ‘004 patent and the claimed phrase “a transmitter configured such that a first code is transmitted at an initial power level...” the parties treat the claimed phrase “first code” of this claim identically to the claimed phrase “code signal” from claim 1 of the ‘004 patent for the purpose of infringement analysis. (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge has found, supra, that the claimed phrase “first code” is construed as “first sequence of chips” and that a “first code” is a spreading code. The administrative law judge finds that the “first code” is analogous to the “code signal” of the first claim element of claim 1 of the ‘004 patent. As the administrative law judge has found that the accused products{

} Based on the foregoing, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that this limitation is practiced by the accused products.

Referring to the claimed phrase “wherein the first code is of a first code type...” the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that this claim element is practiced by the accused products.

Referring to the claimed phrase in asserted claim 2 “and the transmitter further configured to repeatedly transmit dynamically selected codes of said first code type at increasing power levels...,” the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, this claim element is practiced by the accused products.

As for the claimed phrase “wherein the transmitted codes of said first code type carry no data...” of asserted claim 2, the administrative law judge has found, supra, that the accused products{

}

Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that this claimed phrase is practiced by the accused products.

Referring to the claimed phrase “a receiver configured such that an acknowledgment is detected indicating a code of said first type was received...” the administrative law judge has found, supra, that the accused products{ } Thus, the administrative law judge finds that this claim element is not practiced by the accused products.

The parties treat the claimed phrase “signal having a second code” of asserted claim 2 and the claimed phrase “and the transmitter configured such that in response to detecting the acknowledgment, a signal having a second code is transmitted to access a communication channel...” identically to the claimed phrase “access signal” from claim 1 of the ‘004 patent. (CBr at 87-88; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge finds that the “signal having a second code” recited in this claim phrase is analogous to the “access signal” limitation of claim 1 of the ‘004 patent. The administrative law judge has found, supra, that the accused products{ } Based on the foregoing, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that this claim phrase is practiced by the accused products.

Regarding the claimed phrase, “wherein the second code is associated with the first code,” the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that this claim phrase is practiced by the accused products.

Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that claim 2 of the ‘004 patent is infringed by the accused products.

Referring to claim 31 and the claimed phrase “[t]he method of claim 30 wherein said code of a first type is a dynamically selected code associated with said code of a second type...,” for the purpose of infringement, the parties have treated the claimed phrase “code signal” of claim 1 of the ‘004 patent as identical to the claimed phrases “code of a first type” of this limitation of claim 31 of the ‘004 patent. (CBr at 87-88; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge finds that the claimed phrase “code of a first type” and “dynamically selected code” are analogous to “code signal” of claim 1 of the ‘004 patent, and that “code of a second type” is analogous to “access signal” of claim 1 of the ‘004 patent. The administrative law judge has found, supra, that the accused products{

} Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that claim 31 is practiced by the accused products.

With reference to claim 59, for the purpose of infringement, the parties have treated the claimed phrase “code signal” of claim 1 of the ‘004 patent as identical to the claimed phrases “codes” or “different codes” of the claimed phrase “a processor configured to control a transmitter such that the transmitter transmits a first one of a plurality of different codes by said subscriber unit to said base station...” of claim 59 of the ‘004 patent. (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge finds that the claimed term “different codes” is analogous to the claimed phrase “code signal.” The administrative law judge has found, supra, that the accused products{ } Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the this claimed element is practiced by the accused products.

Referring to the claimed phrase of claim 59:

a receiver configured to receive an acknowledgement wherein if said acknowledgement is not received, the processor configured to control the transmitter such that the transmitter transmits another one of the plurality of different codes by said subscriber unit to said base station...

for the purpose of infringement, the parties have treated the claimed phrase “code signal” of claim 1 of the ‘004 patent as identical to the claimed phrases “different codes” of said limitation claimed phrase of claim 59 of the ‘004 patent. (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge finds that the parties have treated the claimed term “different codes” as analogous to the claimed phrase “code signal.” (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge has found, supra, that the accused products{ } Thus, the administrative law judge finds that

complainants have not established, by a preponderance of the evidence, that the claimed phrase in issue is practiced by accused products.

For the purpose of infringement, the parties have treated the claimed phrase “code signal” of claim 1 of the ‘004 patent as identical to the claimed phrases “different codes” of the claimed phrase:

the processor configured to control said transmitter such that said transmitter repeats the transmitting of another one of the plurality of different codes until said acknowledgement is received by said subscriber unit from said base station, said acknowledgement indicating to said subscriber unit that said base station has received at least one of said different codes...

of claim 59 of the ‘004 patent. (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge has found, supra, that the parties treat the claimed phrase “different codes” as analogous to the claimed phrase “code signal.” (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that said claimed phrase is practiced by the accused products.

For the purpose of infringement, the parties have treated the claimed phrase “code signal” of claim 1 of the ‘004 patent as identical to the claimed phrases “different codes” of the claimed phrase:

and said processor configured to control the transmitter such that the transmitter transmits, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit and said different codes as transmitted by said subscriber unit each being a function of a same code.

of claim 59 of the ‘004 patent. (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge finds that the claimed term “different codes” is analogous to the claimed phrase “code signal.” The administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the claimed phrase in issue element is practiced by the accused products.

Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that claim 59 of the ‘004 patent is infringed by the accused products.

3. The ‘966 Patent

In issue are asserted claims 1, 3, 8, 9 and 11 of the ‘966 patent.

Referring to claim 1 of the ‘966 patent and the claimed phrase in said claim 1:

a transmitter configured such that, when the subscriber unit is first accessing a CDMA network and wants to establish communications with a base station associated with the network over a communication channel to be indicated by the base station, the transmitter successively transmits signals until the subscriber unit receives from the base station an indication that a transmitted one of the signals has been detected by the base station, wherein each transmission of one of the signals by the transmitter is at an increased power level with respect to a prior transmission of one of the signals...”

the parties treat the word “signal” in said claimed phrase from the ‘966 patent identically, for the purpose of infringement analysis, as the claimed phrase “code signal” from claim 1 of the ‘004 patent. (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) The administrative law judge has

found, supra, that the accused products{

} Based on the foregoing, the

administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the claimed phrase in issue of claim 1 of the '966 patent is met by the accused products.

Referring to the claimed phrase of claim 1 of the '966 patent:

the transmitter further configured such that the transmitter transmits to the base station a message indicating to the base station that the subscriber unit wants to establish the communications with the base station over the communication channel to be indicated by the base station, the message being transmitted only subsequent to the subscriber unit receiving the indication, wherein each of the successively transmitted signals and the message are generated using a same code...

the administrative law judge has found, supra, that the accused products{ }

Therefore, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that this element of claim 1 of the '966 patent is met by the accused products.

Referring to the claimed phrase in claim 1 of the '966 patent, "and wherein each of the successively transmitted signals is shorter than the message" the administrative law judge has found, supra, that the accused products{ } Therefore, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the claimed phrase in issue of claim 1 of the '966 patent is met by the accused products.

Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that claim 1 of the ‘966 patent is infringed by the accused products.

With reference to asserted claims 3, 8, 9, and 11 of the ‘966 patent, each of said claims depend from independent asserted claim 1 of the ‘966 patent. A defendant claim cannot infringe if the independent claim from which it depends does not infringe. See Jeneric/Pentron, Inc. v. Dillon Co., 205 F.3d 1377 (Fed. Cir. 2000) (“dependent claims cannot be found infringed unless the claims from which they depend have been found to have been infringed.” (Jeneric/Pentron citing Wahpeton Canvas Co., v. Frontier, Inc., 870 F.2d 1546, 1553, 10 USPQ2d 1201, 1208 (Fed.Cir.1989).) Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that each of asserted dependent claims 3, 8, 9 and 11 are infringed by the accused products.

4. The ‘847 Patent

In issue are asserted claims 5, 6, 9 and 11 of the ‘847 patent.

With reference to claim 5 of the ‘847 patent, complainants argued that the accused products literally practice the “generated using a same code” limitation under complainants’ construction. (CBr at 89-91.) Complainants further argued that the accused products literally practice the “synchronize to the pilot signal” limitation, as {

} Complainants also argued that said claimed phrase is

met literally or under the doctrine of equivalents under respondents' claim construction. (CBr at 113-115.)

Respondents argued that the accused products:

{

}

(RBr at Sec. II, p. 69.)

The staff argued that the accused Nokia handsets do not infringe, either literally or under the doctrine of equivalents, any of the asserted claims of the power ramp-up patents. (SBr at 44-48.)

Regarding the claimed phrase of claim 5:

"a circuit configured to receive and down convert radio frequency signals to produce baseband signals, the baseband signals including a pilot signal and a paging message, the paging message being associated with the subscriber unit, wherein the circuit is further configured to synchronize to the pilot signal and demodulate the paging message..."

the administrative law judge has construed "synchronize to a pilot signal" as "to align the beginning of the subscriber unit's spreading codes to the beginning of a pilot code." As defined in the WCDMA standard, a base station broadcasts synchronization codes on primary and

secondary synchronization channels (P-SCH and S-SCH). (CFF 3.457 (undisputed).) The accused Nokia handsets{

}

Nokia's accused handsets{

} Moreover, the WCDMA standard does not require that the P-CPICH

be used for synchronization. (CFF 3.456 (undisputed in relevant part) ("the base station broadcasts signals to be used in cell search and initial synchronization procedure, including a

primary synchronization channel (P-SCH), secondary synchronization channel (S-SCH), and/or a common pilot channel (CPICH). (CX-0453, §§ 5.3.3.1.1 and 5.3.3.5; CX-0148, Annex C.)” (emphasis added).) Also, neither channel can literally be a pilot signal, as the claims require that the pilot signal be a spreading code. Based on the foregoing, the administrative law judge finds that complainants have not established, by a preponderance of the evidence that the accused products{ }and therefore that said products do not practice the claimed phrase in issue of claim 5 of the ‘847 patent.

Regarding the doctrine of equivalents, complainants do not argue that{ }

{ } Based on the foregoing, the administrative law judge finds that complainants have not established, by preponderance of the evidence, that the accused products have a pilot signal under the doctrine of equivalents.

The parties treat the claimed phrase “signal” from the ‘847 patent and in the claimed phrase of claim 5:

“and a transmitter configured such that, when the subscriber unit is first accessing a CDMA network and wants to establish communications with a base station associated with the network

over a communication channel to be indicated by the base station, the transmitter successively transmits signals until the subscriber unit receives from the base station an indication that a transmitted one of the signals has been detected by the base station, wherein each transmission of one of the signals by the transmitter, other than a transmission of a first one of the signals, is at an increased power level with respect to a prior transmission of another one of the signals..."

identically, for the purpose of infringement analysis, as the claimed phrase "code signal" from claim 1 of the '004 patent. (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) Thus, the administrative law judge finds that, for the purpose of infringement, the claimed phrase "signal" at issue in the '847 patent in claim 5 is analogous to the claimed phrase "code signal" from claim 1 of the '004 patent. The administrative law judge has found, supra, that the accused products{

} Based on the foregoing, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the claimed phrase in issue of claim 5 of the '847 patent is met by the accused products.

The administrative law judge has found that the accused products{
}
} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the claimed phrases of claim 5:

the transmitter further configured such that the transmitter transmits to the base station a message indicating to the base station that the subscriber unit wants to establish the communications with the base station over the communication channel to be indicated by the base station, the message being transmitted only subsequent to the subscriber unit receiving the indication, wherein the successively transmitted signals and the message are generated using a same code.

which recites signals is practiced by the accused products.

Based on the foregoing, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that claim 5 of the ‘847 patent is infringed by the accused products.

Regarding claim 6 of the ‘847 patent, the administrative law judge has found, supra, that the accused products{

} Therefore, the administrative law judge finds that complainants have not established, by preponderance of the evidence, that “synchronizing to a pilot signal transmitted by said base station...” of claim 6 of the ‘847 patent is practiced by the accused products.

The parties treat the phrase “different codes” in the claimed phrase of claim 6:

“after said synchronizing to the pilot signal, transmitting a plurality of different codes by said subscriber unit to said base station wherein each one of the plurality of different codes, other than a first one of the plurality of different codes, is transmitted at an increased power level with respect to a prior transmission of another one of the plurality of different codes...”

as identical to the claimed phrase “code signal” in claim 1 of the ‘004 patent for the purpose of infringement. (CBr at 86-87; RBr at Sec. II, pp. 21-32; SBr at 44-48.) Thus, the administrative law judge finds that said “different codes” are analogous to said “code signal.” The administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that accused products practice said claimed phrase of claim 6 of the ‘847 patent.

Regarding the claimed phrase of claim 6:

receiving an acknowledgement by said subscriber unit from said base station and ceasing transmitting the plurality of different codes, said acknowledgement indicating to said subscriber unit that said base station has received at least one of said plurality of different codes...

the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the accused products practice said claimed phrase of claim 6 of the ‘847 patent.

Regarding the claimed phrase of claim 6:

and transmitting, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit, and said plurality of different codes, as transmitted by said subscriber unit, being a function of a same code.

the administrative law judge has found, supra, that the accused products{

}

Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the accused products practice said claimed phrase in issue of claim 6 of the ‘847 patent.

Based on the foregoing, the administrative law judge finds that complainants have not shown, by a preponderance of the evidence, that the accused products infringe claim 6 of the ‘847 patent.

Regarding claim 9 of the ‘847 patent and the claimed phrase

(b) down converting the received radio frequency signals to produce baseband signals, the baseband signals include a pilot signal and a paging message, the paging message being associated with the subscriber unit...

the administrative law judge has found, supra, that the accused products{

} Therefore, the administrative law

judge finds that complainants have not established, by a preponderance of the evidence that element of claim 9 of the ‘847 patent is practiced by the accused products.

Regarding the claimed phrase “(c) synchronizing to the pilot signal...” of claim 9, the administrative law judge has found, supra, that the accused products{

} Therefore, the administrative law judge finds

that complainants have not established, by a preponderance of evidence that said claimed phrase of claim 9 of the ‘847 patent is practiced by the accused products.

Regarding the claimed phrase of claim 9:

(e) after said demodulating the paging message and said synchronizing to the pilot signal, transmitting a first one of a plurality of different codes by said subscriber unit to said base station...

the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the accused products practice said claimed phrase of claim 9 of the ‘847 patent.

Referring to the claimed phrase “(f) if an acknowledgement is not received, transmitting another one of the plurality of different codes by said subscriber unit to said base station...” of claim 9 the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established that the accused products practice this element of claim 9 of the ‘847 patent.

Regarding the claimed phrase of claim 9:

“(g) repeating step (f) until an acknowledgement is received by said subscriber unit from said base station, said acknowledgement indicating to said subscriber unit that said base station has received at least one of said different codes...”

the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the accused products practice said claimed phrase of claim 9 of the ‘847 patent.

Referring to the claimed phrase of claim 9:

“ and (h) transmitting, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal, as transmitted by said subscriber unit, and said different codes, as transmitted by said subscriber unit, being a function of a same code.”

the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the accused products practice said claimed phrase of claim 9 of the ‘847 patent.

Based on the foregoing, the administrative law judge finds that complainants have not established by a preponderance of the evidence that the accused products infringe claim 9.

With respect to claim 11 of the ‘847 patent and specifically regarding the claimed phrase of claim 11:

a circuit configured to synchronize to a pilot signal transmitted by the base station wherein, the circuit is further configured to re-synchronize to the pilot signal if the subscriber unit becomes unsynchronized to the pilot signal during an idle period...

the administrative law judge has found, supra, that the accused products{

} Therefore, the administrative law

judge finds that complainants have not established by a preponderance of the evidence that said claimed phrase of claim 11 of the ‘847 patent is practiced by the accused products.

Regarding the claimed phrase of claim 11:

“a processor configured to control a transmitter such that the transmitter transmits a first one of a plurality of different codes by said subscriber unit to said base station...”

the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a preponderance of the evidence that the accused products practice said claimed phrase of claim 11 of the ‘847 patent.

Referring to the claimed phrase of claim 11:

a receiver configured to receive an acknowledgement wherein if said acknowledgement is not received, the processor is configured to control the transmitter such that the transmitter transmits another one of the plurality of different codes by said subscriber unit to said base station...

the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that

complainants have established by a preponderance of the evidence that the accused products

practice said claimed phrase of claim 11 of the '847 patent.

Referring to the claimed phrase of claim 11:

the processor configured to control said transmitter such that said transmitter repeats the transmitting of another one of the plurality of different codes until said acknowledgement is received by said subscriber unit from said base station, said acknowledgement [sic] indicating to said subscriber unit that said base station has received at least one of said different codes...

the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have

not established, by a preponderance of the evidence, that the accused products practice said

claimed phrase of claim 11 of the '847 patent.

Referring to the claimed phrase of claim 11:

and said processor further configured to control the transmitter such that the transmitter transmits, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit, and said plurality of different codes, as transmitted by said subscriber unit, being a function of a same code.

the administrative law judge has found, supra, that the accused products{

} Thus, the administrative law judge finds that complainants have not established, by a

preponderance of evidence that the accused products practice said claimed phrase of claim 11 of the ‘847 patent. Hence, the administrative law judge finds that complainants have failed to show, by a preponderance of the evidence, that the accused products infringe claim 11 of the ‘847 patent.

G. Validity

Although a patent is presumed valid upon issue, see 35 U.S.C. § 282, it is invalid as anticipated if it “was known or used by others in this country, or patented or described in a printed publication” before the claimed invention, id. § 102(a), or if it was “patented or described in a printed publication . . . more than one year prior” to the filing date. Id. § 102(b). However, for anticipation, “all of the elements and limitations of the claim must be shown in a single prior reference, arranged as in the claim.” Karsten Mfg. Corp. v. Cleveland Golf Co., 242 F.3d 1376, 1383 (Fed. Cir. 2001) (emphasis added).

Under 35 U.S.C. § 103, 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 to which said subject matter pertains.” 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 Inc. v. The Upjohn Co., 122 F.3d 1476, 1479 (Fed. Cir. 1997); Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1570 (Fed. Cir. 1997). To establish obviousness, the patent challenger must demonstrate, by clear and convincing evidence, that “there is a reason, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the references, and that would also suggest a reasonable likelihood of

success.” Ruiz v. A.B. Chance Co., 234 F.3d 654, 664-65 (Fed. Cir. 2000) (Ruiz). The Federal Circuit has rejected “broad conclusory statements regarding the teaching of multiple references” so as to guard against “the subtle but powerful attraction of a hindsight-based obviousness analysis.” In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999). It is not proper to use the patents in issue as templates from which to piecemeal prior art references. As the Federal Circuit has stated: “[t]o draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction--an illogical and inappropriate process by which to determine patentability.” Sensonics, Inc. v. Aerosonic Corp., 81 F.3d 1566, 1570 (Fed. Cir. 1996); (citing (W.L. Gore & Assoc. v. Garlock, Inc., 721 F.2d 1540, 1553 (Fed. Cir. 1983)). “The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made.” (Id. citing Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1138 (Fed. Cir. 1985).)

After construing the claims, the next “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 nonobviousness, also known as ‘objective indicia of nonobviousness.’” Ruiz, 234 F.3d at 660; Graham v. John Deere Co., 383 U.S. 1, 17 (1966). Secondary considerations, also part of the Graham factors, include commercial success, long-felt but unresolved need, failure of others, copying, and unexpected results. Id.

With respect to the scope and content of the prior art, as the Federal Circuit stated in State Contracting & Engineering Corp. v. Condotte America, Inc., 346 F.3d 1057 (Fed. Cir. 2003) (citing In re Clay, 966 F.2d 656, 658 (Fed. Cir. 1992)): “A prerequisite to making a finding on the scope and content of the prior art is to determine what prior art references are pertinent.” References within the statutory terms of 35 U.S.C. § 102 (anticipation) can qualify as prior art for an obviousness determination only when analogous to the claimed invention. In re Clay, 966 F.2d 656, 658 (Fed. Cir. 1992). The Federal Circuit restated the test for determining the scope and content of the prior art to be considered for obviousness purposes in In re Bigio as follows:

Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. In re Deminski, 796 F.2d 436, 442 (Fed. Cir. 1986); see also In re Wood, 599 F.2d 1032, 1036 (CCPA 1979).

In re Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (emphasis added); accord State Contracting, 346 F.3d at 1069. One of ordinary skill in the art would have known of such art because such a person is a hypothetical person who is presumed to be aware of all the pertinent prior art. Custom Accessories, Inc. v. Jeffrey-Allan Industries, Inc., 807 F.2d 955, 962 (Fed. Cir. 1992).

In KSR Int'l v. Teleflex, 127 S.Ct. 1727 (2007) (KSR), the Supreme Court reaffirmed its long-standing obviousness test:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances

surrounding the origin of the subject matter sought to be patented.

Id. at 1734 (quoting Graham v. John Deere Co., 383 U.S. 1, 17-18, (1966)). However, the Supreme Court found that the Federal Circuit in the case below had addressed the question of obviousness in a manner contrary to 35 U.S.C. § 103 and Supreme Court precedents. Thus it stated:

Seeking to resolve the question of obviousness with more uniformity and consistency, the Court of Appeals for the Federal Circuit has employed an approach re-ferred to by the parties as the “teaching, suggestion, or motivation” test (TSM test), under which a patent claim is only proved obvious if “some motivation or suggestion to combine the prior art teachings” can be found in the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art. See, e.g., Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1323-1324 (CA Fed. 1999). KSR challenges that test, or at least its application in this case. See 119 Fed. Appx. 282, 286-290 (CA Fed. 2005). Because the Court of Appeals addressed the question of obviousness in a manner contrary to § 103 and our precedents, we granted certio-rari, 547 U.S. , 126 S. Ct. 2965, 165 L. Ed. 2d 949 (2006). We now reverse.

127 S.Ct. at 1734-35, (emphasis added).

Title 35 U.S.C. § 112, ¶ 1 requires, in relevant part, that the patent specification “set forth the best mode contemplated by the inventor of carrying out his invention.” The Federal Circuit has articulated a “two-prong” inquiry for determining best mode disclosure compliance:

Our case law explicating the best mode requirement focuses on a two-prong inquiry. . . . First, the factfinder must determine whether, at the time of filing the application, the inventor possessed a best mode for practicing the invention. . . . Second, if the inventor possessed a best mode, the factfinder must determine whether the written description disclosed the best mode such that one reasonably skilled in the art could practice it. . . . The first prong involves a subjective inquiry, focusing on the inventor's state of mind at the time of filing. . . . The second prong involves

an objective inquiry, focusing on the scope of the claimed invention and the level of skill in the art.

Eli Lilly & Co. v. Barr Laboratories, Inc., 251 F.3d 955, 963 (Fed. Cir. 2001) (emphasis added).

The Federal Circuit has explained the subjective nature of the best mode inquiry:

Unlike enablement, the existence of a best mode is a purely subjective matter depending upon what the inventor actually believed at the time the application was filed. Because of the subjective nature of the best mode inquiry, the best mode disclosure requirement – unlike enablement – cannot be met by mute reference to the knowledge of one of skill in the art.

Bayer AG v. Schein Pharms., Inc., 301 F.3d 1306, 1314 (Fed. Cir. 2002) (emphasis added).

Compliance with the best mode requirement is a question of fact. Northern Telecom Ltd. v. Samsung Electronics Co., Ltd., 215 F.3d 1281, 1286 (Fed. Cir. 2000). Moreover

“the first task in any best mode analysis is to define the invention at hand. The definition of the invention, like the interpretation of the patent claims, is a legal exercise, wherein the ordinary principles of claim construction apply.”

Id. at 1286-87. A finding of patent invalidity based on best mode “requires clear and convincing evidence that the inventor both knew of and concealed a better mode of carrying out the claimed invention than that set forth in the specification.” Liquid Dynamics Corp. v. Vaughan Co., 449 F.3d 1209, 1223 (Fed. Cir. 2006) (citations omitted). See also Panduit Corp. v. Dennison Mfg., Co., 810 F.2d 1561, 1570 (Fed. Cir. 1987).

Title 35 U.S.C. § 112, ¶ 2 provides that “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” A patentee’s failure to do so renders the patent indefinite and invalid. See Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc., 412 F.3d 1291, 1298 (Fed. Cir. 2005). A determination of claim indefiniteness is a legal conclusion that is

drawn from the court's performance of its duty as the construer of patent claims. *Id.*, citing Atmel Corp. v. Information Storage Devices, 198 F.3d 1374, 1378 (Fed. Cir. 1999).

A decision on whether a claim is invalid under 35 U.S.C. § 112 ¶ 2, requires, inter alia a determination of “whether a person experienced in the field of the invention would understand the scope of the claim when read in light of the specification.” Energizer Holdings, Inc. v. International Trade Comm'n, 435 F.3d 1366, 1369 (Fed. Cir. 2006). However, “[c]laim definiteness is analyzed ‘not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art.’” Id., quoting In re Moore, 439 F.2d 1232, 1235 (C.C.P.A. 1971). Moreover, because a claim is presumed valid, a claim is indefinite only if the “claim is insolubly ambiguous, and no narrowing construction can properly be adopted.” Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

Respondents argued that the RACH power ramp-up patents are not entitled to complainants' claimed conception date, because:

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(RBr at Sec. II, p. 89.) Respondents further argued that each of the asserted claims is invalidated by the Lucas reference (RX-157), the IS-95 references (RX-131, RX-132, RX-133), and the CODIT reference (RX-142). (RBr at Sec. II, p. 79 - Sec. II, p. 92.)

1. Priority Date For RACH Power Ramp-Up Patents

The effective filing date for each of the ‘004, the ‘966, and the ‘847 patents is June 27, 1996. Complainants argued that they are entitled to an earlier invention date{

} (CBr at 163, n. 36; CFF 4.453.) Complainants rely on

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}

Respondents argued that the RACH power ramp-up patents are not entitled to complainants’ claimed conception date, because:

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}

(RBr at Sec. II, p. 89.)

The staff does not address whether the power ramp-up patents are entitled to an invention date before the effective filing date, but argued that “the evidence establishes that the Lucas reference (RX-157) is prior art to the short code ramp-up patents” because the Lucas reference is a printed publication. (SBr at 59-60.)

“Conception exists when a definite and permanent idea of an operative invention, including every feature of the subject matter sought to be patented, is known.” Sewall v. Walters, 21. F.3d 41 1, 41 5 (Fed. Cir. 1994). However, “[a]n inventor’s testimony, standing alone, is

insufficient to prove conception. Conception requires corroboration of the inventor's testimony."

Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1576 (Fed. Cir. 1997) (internal citations omitted). This corroboration requirement is met "preferably by showing a contemporaneous disclosure," Burroughs Wellcome Co. v. Barr Laboratories, Inc., 40 F.3d 1223, 1228 (Fed. Cir. 1994), and originated out of a concern that "inventors testifying in patent infringement cases would be tempted to remember facts favorable to their case by the lure of protecting their patent" Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1577 (Fed. Cir. 1996).

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See supra. If a relied-upon reference does not disclose "every feature of the subject matter to be patented," Sewall, supra, then it cannot support an earlier invention date for the Ramp Up patents. The parties treated the ramp up patents in their briefs, findings of fact, and at the evidentiary hearing, as a single inventive concept. (See, e.g., CBr at 19; RBr at Sec. I, pp. 1-2; SBr at 1.) Neither private party has argued for or against an invention date of any one of the ramp-up patents individually. (See, inter alia, CFF 4.453; RRCFF 4.453; RBr at Sec. II, p. 71.) Moreover, in response to the respondents' argument that{

} complainants nowhere argued that said elements were only required for any one of the patents. (See, inter alia, CRBr at 67-85.) Therefore, the findings, infra, treat all elements in dispute as required to show conception for all of the power ramp-up patents.

Regarding{

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}

Respondents argued that{

} (RBr at Sec. II, p. 89.)

Complainants argued that{

} (CORFF II-128.)

The staff did not address{

}

The administrative law judge has construed the claimed term “different codes” to mean “different sequences of chips.” See supra. The claimed term appears several times in the ‘847 patent, for example:

6. A method for use in a code division multiple access subscriber unit for establishing communications between said subscriber unit and a base station, said method comprising:

... transmitting a plurality of different codes by said subscriber unit to said base station wherein each one of the plurality of different codes, other than a first one of the plurality of different codes, is transmitted at an increased power level with respect to a prior transmission of another one of the plurality of different codes....

(CX-5 12:64-13:22 (emphasis added).) Claim 59 of the ‘004 patent similarly recites:

59. A subscriber unit for performing an access procedure for establishing communications between said subscriber unit and a base station, said subscriber unit comprising:

a processor configured to control a transmitter such that the transmitter transmits a first one of a plurality of different codes by said subscriber unit to said base station;

a receiver configured to receive an acknowledgement wherein if said acknowledgement is not received, the processor configured to control the transmitter such that the transmitter transmits another one of the plurality of different codes by said subscriber unit to said base station;

the processor configured to control said transmitter such that said transmitter repeats the transmitting of another one of the plurality of different codes until said acknowledgement is received by said subscriber unit from said base station, said

acknowledgement indicating to said subscriber unit that said base station has received at least one of said different codes; and

said processor configured to control the transmitter such that the transmitter transmits, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit and said different codes as transmitted by said subscriber unit each being a function of a same code.

(CX-1 at 17:65-18:25 (emphasis added).)

The{

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Complainants argued that{

}

{

} (CX-1578C at IDC-ITC-000850670

(emphasis added).)

Asserted claims 1 and 2 of the ‘004 patent also recite that “transmitted dynamically selected code signals carry no data” (CX-1 at 11:1-2 (emphasis added)) and “the transmitted codes of said first code type carry no data” (CX-1 at 11:15-16 (emphasis added).)

The administrative law judge has construed the claimed term “carry no data” as “not modulated by an information signal.” See supra. {

} (CX-1578C at IDC-ITC-

000850670.) Thus, the administrative law judge finds that complainants have not shown by clear and convincing evidence that{

}

Claim 1 of the ‘966 patent recites that “each of the successively transmitted signals and the message are generated using a same code.” (CX-4 at 11:16-17 (emphasis added).) Claim 59 of the ‘004 patent, see supra, recites that “said different codes as transmitted by said subscriber unit each being a function of a same code.” (CX-5 at 17:23-25 (emphasis added).) Claim 6 of the ‘847 patent recites that “said access signal as transmitted by said subscriber unit, and said plurality of different codes, as transmitted by said subscriber unit, being a function of a same code.” The administrative law judge has construed the claimed terms “generated using a same code” and “function of a same code” to have substantially the same meaning, viz. “produced from the same code.” See supra. Yet,{

}

Based on the foregoing, the administrative law judge finds that complainants have not show, by clear and convincing evidence, that {

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Referring to the{

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}

(CX-1580C at IDC-ITC-000848968.) {

} (CX-1580C at IDC-ITC-000848970 to 000848971.)

The claimed term “dynamically selected” appears several times in the Ramp Up patents.

For example, the claim 1 of ‘004 patent recites:

1. A method for performing power control in a wireless code division multiple access communication system, the method comprising:
 - transmitting dynamically selected code signals at increasing power levels until an acknowledgement is received indicating that one of said dynamically selected code signals was detected, wherein the transmitted dynamically selected code signals carry no data; and
 - in response to detecting the acknowledgment, transmitting an access signal wherein the access signal is associated with the dynamically selected code signals and each of the dynamically selected code signals are shorter than the access signal.

(CX-1 at 10:62-11:7.) Claim 2 of the ‘004 patent recites:

2. A wireless code division multiple access subscriber unit, the subscriber unit comprising:
 - a transmitter configured such that a first code is transmitted at an initial power level wherein the first code is of a first code type and the transmitter further configured to repeatedly transmit dynamically selected codes of said first code type at increasing power levels wherein the transmitted codes of said first code type carry no data;

a receiver configured such that an acknowledgement is detected indicating a code of said first type was received; and

the transmitter configured such that in response to detecting the acknowledgement, a signal having a second code is transmitted to access a communication channel wherein the second code is associated with the first code.

(CX-1 at 11:8-24 (emphasis added).) Claim 31 of the '004 patent recites:

31. The method of claim 30 wherein said code of a first type is a dynamically selected code associated with said code of a second type.

(CX-1 at 14:27-29 (emphasis added).) As found, supra, "dynamically selected code signals," means "sequences of chips that are selected during operation and transmitted." To be selected during operation, more than one of such sequences of chips must be available. See supra.

{ }
{ }
}

(CX-1580C at IDC-ITC-847857 (emphasis added).) {

} See supra.

“[D]ynamically selected code signals,” “dynamically selected codes,” and “dynamically selected code,” as recited in the asserted claims of the ‘004 patent set forth, supra, are taken to mean the “short codes” in the specification. See supra. {

}

Based on the foregoing, the administrative law judge finds that complainants have not show, by clear and convincing evidence, that{

}

Regarding the{

}

Respondents argued that {

}

Complainants argued that {

} (CRRFF II-128A.)

The term “dynamically selected” appears in multiple asserted claims of the ramp-up patents, particularly in the term “dynamically selected code” or “dynamically selected code signal.” See supra. As found, supra, with reference to the Lucas reference, “dynamically selected code signals,” means “sequences of chips that are selected during operation and transmitted.” To be selected during operation, more than one of such sequences of chips must be available. See supra. {

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(CX-1579C at IDC-ITC-000849425 (emphasis added).) {

}

Multiple asserted claims of the ramp-up patents also require an “access signal.” For example, claim 1 of the ‘004 patent recites:

1. A method for performing power control in a wireless code division multiple access communication system, the method comprising:

... in response to detecting the acknowledgement, transmitting an access signal wherein the access signal is associated with the dynamically selected code signals and each of the dynamically selected code signals are [sic] shorter than the access signal.

(CX-1 at 10:62-11:7 (emphasis added).) Claim 6 of the ‘847 patent recites:

6. A method for use in a code division multiple access subscriber unit for establishing communications between said subscriber unit and a base station, said method comprising:

... transmitting, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station, said access signal as transmitted by said subscriber unit, and said plurality of different codes, as transmitted by said subscriber unit, being a function of the same code.

(CX-5 at 12:64-13:22 (emphasis added).) The administrative law judge has construed the claimed term “access signal” as a known sequence of chips that is transmitted during power ramp-up to facilitate the initiation of communications. See supra.

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}

Therefore, the administrative law judge finds that complainants have not shown, by clear and convincing evidence, that {

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Based on the foregoing, the administrative law judge finds that complainants have not shown, by clear and convincing evidence, that the RACH power ramp-up patents are entitled to an invention date earlier than their effective filing date, viz. June 27, 1996.

2. Lucas Reference

Respondents argued that the Lucas reference, which describes the CODIT Testbed, teaches all elements of the claimed short code invention (RBr at Sec. II, p. 79) or renders the claims obvious. (RBr at Sec. II, p. 82.) Respondents further argued that Lucas was published in

May 1994, before { } and hence is prior art. (RBr at Sec. II, pp. 75-77.)

Complainants argued that respondents have not shown that the Lucas reference was publicly available prior to the invention. (CBr at 79-84.) Specifically, complainants argued that the evidence presented by respondents is insufficient to prove that the Lucas reference was a printed publication. (CBr at 79-84.)

The staff argued that the Lucas reference has been established as prior art based on testimony by respondents' witness Malkamaki (SBr at 59-60) and because "RX-2812, a letter from a University librarian in Hannover, Germany, undoubtedly establishes that the library made Lucas 'available to the public from 21 June 1995.'" (SBr at 60.)

RX-3270 is a copy of the proceedings of the 1994 Race Mobile Telecommunications Workshop in Amsterdam. (RFF II-761 (undisputed in relevant part).) The Lucas reference (RX-157) is contained, in its entirety, in RX-3270. (RFF II-762 (undisputed).) The Lucas reference is dated May, 1994. (RX-157 at 1.) A Nokia employee, Malkamäki, attended the 1994 Race Mobile Telecommunications Workshop in Amsterdam in May, 1994 (RFF II-760 (undisputed).) There were over 140 confirmed registrants at the 1994 Race Mobile Telecommunications Workshop. (RFF II-773 (undisputed).) The Lucas reference "provides a description of the synchronization aspects in the CODIT Testbed system." (CFF 4.331 (undisputed).) CODIT stands for "Code Division Testbed" (RFF II-804 (undisputed).) Respondents do not argue that the CODIT testbed, as described in the Lucas reference, was not invented, used, or on sale in the United States before June 27, 1995, i.e., one year prior to the earliest effective filing date of the '004, '966, and '847 patents. (See, generally, RBr at Sec. II, p. 74 to Sec. II, p. 79.) Thus, to

qualify as “prior art” under 35 U.S.C. § 102 (a), (b), the Lucas reference must be a “printed publication” under U.S. law. Whether a reference is a “printed publication” depends on whether it was publicly accessible prior to the invention. See, e.g., Bruckelmyer v. Ground Heaters, Inc., 445 F.3d 1374, 1378 (Fed. Cir. 2006). A reference is “publicly accessible” if it has been made available to the extent that persons of ordinary skill in the art, exercising reasonable diligence, can locate it. Id.; SRI Int'l, Inc. v. Internet Sec. Sys., Inc., 511 F.3d 1186, 1194 (Fed. Cir. 2008). The decision whether a reference is a “printed publication” is determined on a case-by-case basis. See, e.g., SRI Int'l, Inc., 511 F.3d at 1194 (quoting In re Cronyn, 890 F.2d 1158, 1161 (Fed. Cir. 1989)). In this instance, there is case law analogous to this investigation. In In re Hall, 781 F.2d 897 (Fed. Cir. 1986), the Federal Circuit affirmed the rejection by the Board of Patent Appeals and Interferences of an application based on a prior art doctoral thesis accessible in the Library of Freiburg University in (what was the the Federal Republic of) Germany. In holding that the doctoral thesis was a “printed publication” accessible to the public before the critical date, the Court relied on unrebutted communications from the library director “to establish an approximate time when a thesis became accessible.” Hall, 781 F.2d at 899. In the current investigation, there is more than just an approximate time when Lucas became accessible, as a precise date when Lucas was accessible to the public, June 21, 1995, is known. (RX-2812 at 1.) Also, the precise shelfmarks in the Hannover library, viz. RR 5214 (1994,1) and RR 5214 (1994,2), where Lucas could have been accessed were known. (RX-2812 at 1.) Here, as in Hall, the evidence is unrebutted that Lucas was accessible at the TIB/UB library prior to the critical date. Thus, the administrative law judge finds that respondents have shown that the Lucas reference is prior art to the RACH power ramp-up patents. See also Ethicon, Inc. v. United States Surgical Corp., 762

F. Supp. 480, 501 (D. Conn. 1991) (“Although the court in In re Hall suggested that there is no absolute requirement that specific indexing and cataloguing information be available ... there was no dispute that the doctoral dissertation was eventually placed in the library -- the only question was when it was actually catalogued. In contrast, the defendant in this case has only been able to offer evidence suggesting how the system was designed to work.”); Honeywell Int'l, Inc. v. United States, 81 Fed. Cl. 514, 526 (Fed. Cl. 2008) (“The court agrees that ‘competent evidence of the general library practice’ may be used to ‘establish an approximate time when a thesis became available,’” citing In re Hall, 781 F.2d at 898-99).

Referring to claim 1 of the ‘004 patent, regarding the claimed phrase, “dynamically selected code signals,” respondents argued that Lucas discloses multiple short codes, and thus discloses the “dynamic selection” of these codes or the transmission of “different codes.” (RBr at Sec. II, pp. 79-82.)

Complainants argued that “dynamically selected code signals” or code signals are not disclosed by the Lucas reference. (CBr at 146.) Specifically, complainants argued that the Lucas reference “discloses a system that repeatedly transmits a single short code during a power ramping phase of a random access procedure.” (CBr at 147 (emphasis in original).) Complainants further argued that in the Lucas reference’s disclosure of access codes, the ellipsis following “Random Access” makes it so that one of ordinary skill in the art would be unable to understand what the reference meant, and that a reference ambiguous as to the presence of an element cannot anticipate a claim containing that element. (CBr at 148.)

The staff argued that “under the proper claim constructions, the evidence does not clearly and convincingly demonstrate that the Lucas reference anticipates or renders obvious the asserted claims of the short code ramp-up patents.” (SBr at 60.)

The administrative law judge has found, supra, that a “code signal” is “a sequence of chips that is transmitted” and that said code signal is also a spreading code. No party has disputed the claimed term “dynamically selected.” The administrative law judge further finds that “dynamically selected,” in the context of the specification, means “selected during operation.” Thus, “dynamically selected code signals” is construed as “sequences of chips that are selected during operation and transmitted.” Said codes are also spreading codes. To be selected during operation, more than one of such sequences of chips must be available. The Lucas reference, however, discloses only a single code. For example, a diagram in the Lucas reference shows a Short Code of length 127 as part of the random access channel. (RX-157 at 3.) Also, the Lucas reference states:

Once the code is known for RA [random access], the MS sends a Random Access

* * *

The RA signal is divided into two parts: an unmodulated part followed by RA informations [sic] spread by a Gold sequence of length 127

(RX-157 at 5 (emphasis added).) Finally, the Lucas reference discloses a diagram showing “unmodulated sequence Gold code (length 127)” for power ramping phase. (RX-157 at 6 (emphasis added).) Thus, the Lucas reference discloses a single code sent by the handset during random access. Further, the Lucas reference states:

SYNCHRONISATION CHANNELS

Common Control Channels sent by the BS :

Broadcast Channel (BCH) : network information, information concerning the BS parameters, access codes for Random Access, ...

* * *

SYNCHRONISATION IN THE DOWNLINK (3)

Broadcast Information

Broadcast channel [sic] provides several information concerning the network (e.g. PICH of neighbouring cells for HandOver and Inter Frequency HandOver) and the codes used for the Random Access (RA)

Once the code is known for RA, the MS sends a Random Access

(RX-157 at 2, 5 (emphasis added).) Thus, the cited portion's reference to "codes" is with respect to "codes" sent over the BCH by the base station, not sent by a handset. Thus, said citation does not disclose dynamic selection of a code.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that the Lucas reference (RX-157) anticipates or renders obvious the concept of "dynamically selected code signals."

Regarding the claimed phrase "in response to detecting the acknowledgement, transmitting an access signal...," respondents argued that said phrase is disclosed in Lucas because the Lucas reference "discloses that the short Gold code is transmitted 'till the BS detects it' at which point the mobile transmits a preamble and RA Information bits that are a known

spreading code (Nokia's construction) under Dr. Vojcic's understanding of the term spreading and a signal (plain and ordinary meaning - InterDigital's construction)...” (RFF II-866.)

Complainants argued that Lucas fails to disclose “in response to detecting the acknowledgement, transmitting an access signal” as recited in claim 1 of the ‘004 patent because “Lucas does not disclose what procedures are subsequently performed in the CODIT system after synchronization is achieved.” (CBr at 150-51.)

The staff argued that “under the proper claim constructions, the evidence does not clearly and convincingly demonstrate that the Lucas reference anticipates or renders obvious the asserted claims of the short code ramp-up patents.” (SBr at 60.)

The administrative law judge has found, supra, that the claimed phrase “access signal” is a known sequence of chips that is transmitted during power ramp-up to facilitate the initiation of communications. Based on the plain language of the claims, such a signal would need to be sent “in response to detecting the acknowledgement,” which acknowledgement is sent only after the base station has detected the RACH access attempt. Lucas discloses that the RA signal is divided into two parts: an unmodulated part followed by RA information spread by a Gold sequence of length 127. (RX-157 at 5; CFF 4.340 (undisputed).) At the beginning of a RACH access attempt, the handset in Lucas transmits the unmodulated Gold code during a power ramping phase. (RX-157 at 5; CFF 4.346 (undisputed in relevant part).) Said Gold code is “used to obtain chip synchronisation at the BS side and uses a power ramping phase which prevents from increasing the interferences during a RA.” (RX-157 at 5.) During the power ramping phase, the power of the RACH increases until the BS detects the signal or until a timeout is reached. (RX-157 at 5.) The next step disclosed by the Lucas reference reads:

The initial power of the transmitting power on the RA is sent by the BS on the BCH, but due to non reciprocity of radio channels the MS begins its transmission with a marge of 30dB. The power is controlled by the BS in sending power control bits on the PCCH of the Access Grant CHannel.

(RX-157 at 5.) The Lucas reference had previously disclosed that the Access Grant Channel is used to send “acknowledgement of the BS of a Random Access.” (RX-157 at 2.) Thus, the “power control bits” sent by the base station via the access grant channel are an acknowledgement sent by the base station that the base station has received the first part of the RA signal, which ends the power ramping phase. It is undisputed that, after the power ramping phase, the handset sends the RA information bits (spread by the Gold code) to the BS. (CFF 4.348 (undisputed in relevant part).) Thus, the administrative law judge finds that the Lucas reference describes said RA identification bits being sent by the handset in response to an acknowledgement sent by the base station. However, as the Lucas reference discloses that said RA identification bits are sent by the subscriber unit after the power ramping phase is completed, the RA identification bits cannot be an “access signal” as per claim 1 of the ‘004 patent, because an “access signal” is sent during power ramp up. Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that the Lucas reference discloses the limitation of “in response to detecting the acknowledgement, transmitting an access signal” as recited in claim 1 of the ‘004 patent.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that the Lucas reference anticipates or renders obvious claim 1 of the ‘004 patent.

With respect to claims 2, 31 and 59 of the ‘004 patent, respondents argued, with respect to claim 2 of the ‘004 patent, that the claim limitation “dynamically selected code signals” is “disclosed by Lucas for the same reasons discussed above with respect to claim 1 of the ‘004 Patent.” (RFF II-874.) Respondents further argued that the limitation “the transmitter configured such that in response to detecting the acknowledgement, a signal having a second code is transmitted to access a communication channel” of claim 2 is disclosed by Lucas “for the same reasons it discloses the “in response to detecting the acknowledgement, transmitting an access signal” limitation of Claim 1 of the 004 patent...” (RFF II-878.) The administrative law judge has, however, found supra that neither of said limitations from claim 1 of the ‘004 patent are disclosed by the Lucas reference. Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that claim 2 of the ‘004 patent is rendered invalid by the Lucas reference.

With respect to claim 31 of the ‘004 patent, respondents argued that the Lucas reference discloses ““(d) transmitting a code of a second type after it is determined that the subscriber unit has received the acknowledgement signal’ for the same reasons it discloses transmitting an ‘access signal’ in Claim 1 of the 004 patent...” (RFF II-887.) The administrative law judge has found, supra, that the Lucas reference does not disclose said claim limitation of claim 1 of the ‘004 patent. Thus, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that the Lucas reference renders claim 31 of the ‘004 patent invalid.

Regarding the validity of claim 59 of the ‘004 patent, respondents argued that Lucas reference discloses ““a processor configured to control a transmitter such that the transmitter transmits a first one of a plurality of different codes by said subscriber unit to said base station”

for the same reasons it discloses ‘dynamically selected code signals’ in Claim 1 of the 004 patent...” (RFF II-892.) The administrative law judge has found, supra, that said “different codes” are analogous to the “code signals” in claim 1 of the ‘004 patent. Respondents further argued that the Lucas reference discloses “‘said access signal as transmitted by said subscriber unit and said different codes as transmitted by said subscriber unit each being a function of a same code’ because it discloses that the same Gold code is used during the ramping phase and is used to spread the RA Information bits, thus the two codes depend on and vary with a common Gold code (InterDigital’s construction) and the RA Information bits are a part of the spreading code transmitted during ramping (Nokia’s construction) (Lanning Tr. 1668:13-17; RX0157 at -005, -006; RDX-1203; RDX-1209.5; see RFF II-854-859, above).” (RFF II-897.) The administrative law judge finds that said argument fails for the same analysis as for claim 1, supra.
Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that claim 59 of the ‘004 patent is anticipated or rendered obvious by the Lucas reference.

With respect to claim 1 of the ‘966 patent, regarding the limitation “a message indicating to the base station that the subscriber unit wants to establish the communications with the base station,” respondents argued that “none of the asserted claims, the Common Specification, or any party’s construction of the term ‘message’ requires that it be ‘used to establish a call’ (RFF II-843).” (RBr at Sec. II, p. 84.)

Complainants argued that the Lucas reference does not disclose the claimed phrase “a message indicating to the base station that the subscriber unit wants to establish the communications with the base station” as recited in asserted claim 1 of the ‘966 patent. (CBr at

150-53.) Complainants further argued that Lucas's disclosure is limited to only those aspects of synchronization that are implemented in the CODIT system and does not disclose what procedures are subsequently performed in the CODIT system after synchronization is achieved. (CBr at 150.) Thus, complainants argued, Lucas fails to disclose any subsequent transmission of a message. (CBr at 150-51.)

The staff argued that "under the proper claim constructions, the evidence does not clearly and convincingly demonstrate that the Lucas reference anticipates or renders obvious the asserted claims of the short code ramp-up patents." (SBr at 60.)

It is undisputed that, as evidenced by its title, Lucas discloses, inter alia, a "Synchronisation Procedure in Up & Down Link in the CoDiT Testbed." (CFF 4.330 (undisputed in relevant part).) Further, Lucas discloses an uplink synchronization procedure comprising a "Random Access" procedure. (CFF 4.336 (undisputed).) Said Random Access procedure is described as for synchronizing a handset and a base station . (RX-157 at 5 ("The unmodulated part of the RA is used to obtain chip synchronisation at the BS side...").) The Lucas reference discloses that said random access procedure "preceeds [sic] also a call initiated by the MS [handset]." (RX-157 at 2.) Thus, any message sent by the handset indicating to the base station that the subscriber unit wants to establish the communications with the base station would need to be sent after the random access procedure is concluded. The last sentence of the section titled "INITIAL SYNCHRONISATION PROCEDURE" in the Lucas reference reads "[i]f acknowledgement is OK, the MS [handset] is ready to listen the Paging CHannel or to send a call, the MS is declared synchronised." (RX-157 at 2.) Thus, again, the Lucas reference discloses that after the synchronization is complete, the handset is ready to send a call. The final step of

the section in Lucas titled “SYNCHRONISATION IN THE UPLINK” reads “[t]hese identification bits are sent back to the MS for acknowledgement, if they are correct synchronisation is OK.” (RX-157 at 5.) Therefore, the final listed step merely completes the synchronization, and the exchange of the identification bits, viz. the handset transmitting the identification bits to the base station and the base station transmitting the identification bits back to the handset, does not disclose that a call is being initiated by the handset, and can not disclose call setup messages. Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that the Lucas reference discloses the limitation of “a message indicating to the base station that the subscriber unit wants to establish the communications with the base station” in claim 1 of the ‘966 patent.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that the Lucas reference anticipates or renders obvious claim 1 of the ‘966 patent.

As for claims 3, 8, 9 and 11 of the ‘966 patent, said claims depend from claim 1 of the ‘966 patent. The administrative law judge has found, supra, that claim 1 of the ‘966 patent is not rendered anticipated or obvious by the Lucas reference. Further, with respect to claim 3, respondents argued that the Lucas reference “discloses the limitation of Claim 3 of the 966 patent that ‘some of the transmitted signals are different’ for the same reasons it discloses ‘dynamically selected code signals’ in Claim 1 of the 004 patent...” (RFF II-907.) The administrative law judge has found, supra, that the Lucas reference does not disclose dynamically selected code signals. Thus, none of said dependent claims 3, 8, 9, and 11 are rendered anticipated or obvious by Lucas for, inter alia, the same analysis.

In further reference to claim 9 of the '966 patent, respondents argued that the claimed phrase "wherein the communication channel is indicated by the base station in response to the message" is disclosed by Lucas because it discloses that the "identification bits are sent back to the MS for acknowledgement," which the administrative law judge finds is substantively the same reasons as the limitation "in response to detecting the acknowledgement, transmitting an access signal" in claim 1 of the '004 patent. (RFF II-909.) The administrative law judge has found, supra, that said limitation of claim 1 is not disclosed in the Lucas reference.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that any of claims 3, 8, 9 and 11 are rendered anticipated or obvious by the Lucas reference.

Referring to claim 5 of the '847 patent, respondents argued that "[t]he Lucas reference discloses 'the transmitter further configured such that the transmitter transmits to the base station a message indicating to the base station that the subscriber unit wants to establish the communications with the base station over the communication channel to be indicated by the base station' for the same reasons it discloses these claim limitations in Claim 1 of the 966 patent (See RFF II-902, above)." (RFF II-918.)

The administrative law judge has found with respect to claim 1 of the '966 patent, supra, that said limitation is not disclosed by the Lucas reference. Based on the foregoing, the administrative law judge finds that respondents have failed to show, by clear and convincing evidence, that claim 5 of the '847 patent is anticipated or rendered obvious by the Lucas reference.

As for claim 6 of the ‘847 patent, regarding the “plurality of different codes” limitation, respondents argued that said limitation is disclosed “for the same reasons it discloses transmitting ‘dynamically selected code signals’ in Claim 1 of the 004 patent (See RFF II-812-834, 861, above).” (RFF II-923.) Regarding the “transmitting, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station” limitation, respondents argued that said limitation is disclosed “for the same reasons it discloses transmitting an ‘access signal’ in Claim 1 of the 004 patent (See RFF II-866, above).” (RFF II-926.) The administrative law judge has found, supra, that said limitations of claim 1 of the ‘004 patent are not disclosed by the Lucas reference.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that claim 6 of the ‘847 patent is anticipated or rendered obvious by the Lucas reference.

Referring to claim 9 of the ‘847 patent, respondents argued that the Lucas reference “discloses ‘(e) after said demodulating the paging message and said synchronizing to the pilot signal, transmitting a first one of a plurality of different codes by said subscriber unit to said base station’ for the same reasons it discloses ‘dynamically selected code signals’ in Claim 1 of the 004 patent (See RFF II-812-834, 861, above).” (RFF II-934.) Respondents further argued that the Lucas reference “discloses ‘(h) transmitting, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station’ for the same reasons it discloses transmitting an ‘access signal’ in Claim 1 of the 004 patent (See RFF II-866, above).” (RFF II-938.) The administrative law judge has found,

supra, that neither of said claim elements of asserted claim 1 are disclosed by the Lucas reference.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that claim 9 of the '847 patent is anticipated or rendered obvious by the Lucas reference.

Referring to claim 11 of the '847 patent, respondents argued that the Lucas reference "discloses 'a processor configured to control a transmitter such that the transmitter transmits a first one of a plurality of different codes by said subscriber unit to said base station' for the same reasons it discloses 'dynamically selected code signals' in Claim 1 of the 004 patent (See RFF II-812-834, 861, above)." (RFF II-943.) Respondents further argued that the Lucas reference "discloses 'and said processor further configured to control the transmitter such that the transmitter transmits, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber unit and said base station' for the same reasons it discloses transmitting an 'access signal' in response to an acknowledgement in Claim 1 of the 004 patent (See RFF II-866, above)." (RFF II-947.) The administrative law judge has found with respect to asserted claim 1 of the '004 patent, supra, that these limitations are not disclosed by the Lucas reference.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that claim 11 of the '847 patent is rendered anticipated or obvious by the Lucas reference.

3. The IS-95 References

The Proposed EIA/TIA Interim Standard: Wideband Spread Spectrum Digital Cellular System Dual Mode Mobile Station Base Station Compatibility Standard (April 21, 1992) (1992 Proposed Standard) (RX-131), the TIA/EIA Interim Standard: Mobile Station Base Station Compatibility Standard for Dual Mode Wideband Spread Spectrum Cellular System (July 1993) (IS-95) (RX-132), and the TIA/EIA Interim Standard: Mobile Station Base Station Compatibility Standard for Dual Mode Wideband Spread Spectrum Cellular System (May 1995) (IS-95A) (RX-133) (collectively, IS-95 References) have the same disclosure for purposes of this investigation. (CFF 4.467 (undisputed).) The IS-95 references are three versions of the IS 95 TIA/EIA standards or proposed standards. (CFF 4.463 (undisputed).) The publication date of each of the collective IS-95 references are prior to the established priority date of the RACH power ramp-up patents. (RX-131, RX-132, RX-133.) Thus, the administrative law judge finds that the IS-95 references are prior art to the RACH power ramp-up patents.

Respondents have argued that the claims are obvious in light of IS-95 and CODIT. (RBr at Sec. II, p. 86.)

Referring to claim 1 of the ‘004 Patent, respondents argued that the “IS-95 references render the Short Code Ramp-Up Patents obvious because one of ordinary skill in the art would understand to split the preamble and message components of the access probe into separate transmissions (RFF II-962-967).” (RBr at Sec. II, p. 86.) Respondents further argued that:

If one splits the preamble and message capsule, the preamble in IS-95 carries no data under either party’s construction (RFF II-966). An IS-95 preamble is a series of zeros that is spread by a long code mask (RFF II-964, 965). Similarly, one of ordinary skill in the art would immediately and unquestionably appreciate that, once the preamble and message capsule are split and transmitted separately, the base station must transmit an acknowledgement or

indication that triggers the mobile to transmit the message capsule in response (RFF II-968).

(RBr at Sec. II, p. 87.)

Complainants argued that the IS-95 references fail to disclose an “acknowledgement” or an indication as required by each of the asserted claims of the ‘004,’ 966, and ‘847 patents. (CBr at 154-55.) Complainants further argued that the IS-95 references failed to disclose the “carry no data” limitation of claims 1 and 2 of the ‘004 patent and the limitation “does not include data of the subscriber unit” of claim 31 of the ‘004 patent. (CBr at 155.) Complainants further argued that “the IS-95 standard repeatedly discloses that the message capsule portion of an access probe must be transmitted ‘immediately following’ its corresponding preamble portion.” (CBr at 154.)

The staff argued that “under the proper claim construction, the evidence does not clearly and convincingly demonstrate that the IS-95 reference anticipates or renders obvious the asserted claims of the short code ramp-up patents.” (SBr at 61.)

The IS-95 references define a UE BS compatibility standard in a wideband spread spectrum cellular system. (CFF 4.470 (undisputed).) In the IS-95 references, when the UE wants to access the BS, the UE transmits signals referred to as “access probes.” (CFF 4.471 (undisputed).) The UE transmits the access probes over an Access Channel. (CFF 4.472 (undisputed).) The UE transmits the access probes in one or more “access probe sequences.” (CFF 4.475 (undisputed).) The UE transmits the first access probe in an access probe sequence at an initial power level and transmits each subsequent access probe in the access probe sequence at a higher power level than the previously transmitted access probe. (CFF 4.476 (undisputed).) Each such access probe contains two parts: (1) a preamble; and (2) a message capsule. (CFF

4.477 (undisputed).) The IS-95 references do not permit the access probe preamble to be sent separately from its corresponding access probe message capsule. (CFF 4.478 (undisputed).) More specifically, the IS-95 references do not permit the UE to first transmit the access probe preamble, then wait for an “acknowledgement” or “indication” from the BS before transmitting the access probe message capsule. (RX-131 at 6.7.1.1 (“The mobile station shall transmit an Access Channel message capsule immediately following the preamble.”), 6.7.1.2; RX-131 at 6, n. 16 (“‘Shall’ and ‘shall not’ identify requirements to be followed strictly to conform to the standard and from which no deviation is permitted.”).) Therefore, the IS-95 references do not disclose that the code signal carries no data as, *inter alia*, the message capsule contains data. Further, as the IS-95 references specifically state that the preamble and message cannot be sent separately, the administrative law judge finds that the IS-95 references do not make it obvious that the preamble and the message could be sent separately. Therefore, the administrative law judge finds that the IS-95 references do not disclose an access signal as required by claim 1 of the ‘004 patent. Moreover, respondents have admitted that an additional acknowledgement, which does not exist in IS-95, would be required in the IS-95 system if the access probe preamble and message capsule were separately transmitted. (CFF 4.516 (undisputed).) Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that these limitations are disclosed by the IS-95 reference.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that claim 1 of the ‘004 patent is rendered obvious by the IS-95 references.

With respect to claims 2, 31 and 59 of the ‘004 patent, regarding the validity of claims 2 and 31 of the ‘004 patent, respondents argued that the IS-95 references disclose “‘wherein the transmitted codes of said first code type carry no data’ for the same reasons it discloses that the code signals in Claim 1 of the 004 patent ‘carry no data’ (See RFF II-980, above).” (RFF II-991.) Respondents further argued that the IS-95 references disclose “‘a receiver configured such that an acknowledgement is detected indicating a code of said first type was received’ for the same reasons it discloses the ‘until an acknowledgement is received...’ limitation of Claim 1 of the 004 patent (See RFF II-979, above).” (RFF II-992.) With respect to claim 31 of the ‘004 patent, respondents argued that the IS-95 references disclose “‘wherein the code of the first type does not include data of the subscriber unit’ for the same reasons it discloses the ‘no data’ limitation of Claim 1 of the 004 patent (See RFF II-980, above).” (RFF II-998.) The respondents also argued that the IS-95 references disclose “‘the acknowledgement signal being an indication to the subscriber unit that the base station has received a code of the first type’ for the same reason it discloses an ‘acknowledgement’ in Claim 1 of the 004 patent (See RFF II-979, above).” (RFF II-1000.) The administrative law judge has found, supra, that the IS-95 references do not disclose said limitations. Thus, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that the IS-95 references render claims 2 and 31 of the ‘004 patent obvious.

With respect to the validity of claim 59 of the ‘004 patent, respondents argued that the IS-95 references disclose “‘a receiver configured to receive an acknowledgement wherein if said acknowledgement is not received, the processor configured to control the transmitter such that the transmitter transmits another one of the plurality of different codes by said subscriber unit to

said base station' for the same reasons it discloses 'detecting an acknowledgement' in Claim 1 of the 004 patent (See RFF II-979, above)." (RFF II-1008.) The administrative law judge has found, supra, that respondents have not shown that said limitation of claim 1 is rendered invalid by the IS-95 references. Therefore, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that the claim limitation "the transmitter transmits, in response to receipt of said acknowledgement, an access signal to facilitate communication initialization between said subscriber, unit and said base station..." of claim 59 of the '004 patent is disclosed by the IS-95 references.

Therefore, the administrative law judge finds respondents have not shown, by clear and convincing evidence, that claim 59 of the '004 patent is rendered obvious by the IS-95 references.

Referring to claim 1 of the '966 patent, respondents argued that the IS-95 references disclose "'until the subscriber unit receives from the base station an indication that a transmitted one of the signals has been detected by the base station' for the same reasons it discloses 'detecting an acknowledgement' in Claim 1 of the 004 patent (See RFF II-979, above)." (RFF II-1015.) Respondents further argued that the IS-95 references disclose "'the message being transmitted only subsequent to the subscriber unit receiving the indication' for the same reasons it discloses transmitting an access signal 'in response to' an acknowledgement in Claim 1 of the 004 patent (See RFF II-981, above)." (RFF II-1018.) The administrative law judge has found, supra, that said limitations of claim 1 of the '004 patent are not rendered obvious by the IS-95 references.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that said limitations of claim 1 of the '966 patent are rendered obvious by the IS-95 references.

As for claims 3, 8, 9 and 11 of the '966 patent, said claims depend from claim 1 of the '966 patent. The administrative law judge has found, supra, that claim 1 of the '966 patent is not rendered obvious by the IS-95 references. Thus, he finds that none of said dependent claims 3, 8, 9, and 11 are rendered obvious by IS-95 for, inter alia, the same reasons.

Referring to claim 5 of the '847 patent, respondents argued that the IS-95 references disclose “until the subscriber unit receives from the base station an indication that a transmitted one of the signals has been detected by the base station” for the same reasons it discloses these claim limitations in Claim 1 of the 966 patent (See RFF II-1015, above).” (RFF II-1031.) The administrative law judge, however, found supra that respondents have not shown that said limitation of claim 1 of the '966 patent is obvious over the IS-95 references.

Based on, inter alia, the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that claim 5 of the '847 patent is rendered obvious by the IS-95 references.

As for claims 6, 9 and 11 of the '847 patent, respondents argued that the IS-95 references disclose “receiving an acknowledgement by said subscriber unit from said base station and ceasing transmitting the plurality of different codes, said acknowledgement indicating to said subscriber unit that said base station has received at least one of said plurality of different codes” for the same reasons it discloses ‘detecting the acknowledgement’ in Claim 1 of the 004 patent (See RFF II-979, above).” (RFF II-1040.) Respondents further argued that the IS-95 references

disclose “‘said acknowledgement indicating to said subscriber unit that said base station has received at least one of said different codes’ for the same reason it discloses an ‘acknowledgement’ in Claim 1 of the 004 patent (See RFF II-979, above).” (RFF II-1052.) Respondents also argued that the IS-95 references disclose “‘a receiver configured to receive an acknowledgement’ for the same reason it discloses an ‘acknowledgement’ in Claim 1 of the 004 patent (See RFF II-979, above).” (RFF II-1059.) The administrative law judge, however, found supra that respondents have not shown that said limitations of claim 1 of the ‘004 patent are obvious over the IS-95 references.

Based on the foregoing, the administrative law judge finds that respondents have not shown, by clear and convincing evidence, that claims 6, 9, or 11 of the ‘847 patent are rendered obvious by the IS-95 references.

4. The CODIT Final Review Reference

Respondents argued that the asserted claims of the power ramp-up patents are all rendered obvious in light of the CODIT Final Report and IS-95, and that it would have been obvious to combine the two references. (RBr at Sec. II, p. 89-92.) Respondents also argued that the CODIT Final Review is prior art to the power ramp-up patents, as it was a printed publication as of November 21, 1995. (RBr at Sec. II, p.89.)

Complainants argued that respondents have not shown that the CODIT Final Review Report is prior art to the power ramp-up patents. (CBr at 162.) Complainants also argued that the respondents’ expert did not analyze the CODIT Final Review Report under respondents’ claim construction. (CBr at 157.) Moreover, complainants argued that the CODIT Final Review does not disclose at least three limitations that are recited in each of the power ramp-up patents. (CBr

at 159-62.) Complainants further argued that the CODIT Final Review fails to disclose several limitations that appear in some, but not all, of the power ramp-up patents, including “a plurality of different codes,” “dynamically selected” codes or code signals, signals that are “different.” (CBr at 157-59.)

The staff argued that “the evidence does not clearly and convincingly show that the asserted claims of the power ramp-up patents would have been obvious to one of ordinary skill in the art in light of the CODIT Final Review Report, considered alone or in combination with the IS-95 references. (SBr at 61.)

A reference is considered a printed publication, and thus prior art, “upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it and recognize and comprehend therefrom the essentials of the claimed invention without need of further research or experimentation.” In re Wyer, 655 F.2d 221, 226 (C.C.P.A. 1981) (citing I.C.E. Corp. v. Armco Steel Corp., 250 F. Supp. 738, 743 (S.D.N.Y. 1966)). Courts have placed the burden of such a showing on the party alleging that the reference is a printed publication:

The proponent of the publication bar must show that prior to the critical date the reference was sufficiently accessible, at least to the public interested in the art, so that such a one by examining the reference could make the claimed invention without further research or experimentation.

In re Hall, supra, at 899; see also Depuy Inc. v. Zimmer Holdings, Inc., 343 F.Supp.2d 675, 682

(N.D. Ill. 2004) (finding references were not publicly available based only on assumptions by proponent's 30(b)(6) witness as to publication and distribution without any personal knowledge or knowledge gained from party's records); NESEA Const., Inc. v. Bilco Co., 2007 WL 1852289 at *3 (D.N.J. 2007) (finding references not to be printed publications where proponent offered only assertions stating that the references were publicly available and "indexed without restriction").

The CODIT Final Review is dated November 21, 1995. (RX-142 at 1). The CODIT Final Review also discloses a "contractual date of delivery" of September 1995. (RX-142 at 1.) Respondents argued that these dates establish that the reference was, therefore, published on November 21, 1995. (RBr at Sec. II, p. 89.) Respondents offer no other evidence that the reference was publicly available prior to the invention of the power ramp-up patents.

The CODIT Final Review includes a cover page that indicates a "Deliverable Type" of "Public." (RX-142 at 1.) There is no indication in the reference, however, that the CODIT Final Review was ever actually made available to the public. (RX-142 at 1-94.) The first page of the CODIT Final Review Report shows an "Actual Date of Delivery to the CEC" which is left blank. (RX-142 at 1.) Thus, the administrative law judge finds that the cover page does not show that "the reference was sufficiently accessible, at least to the public interested in the art...." See In re Hall, supra, at 899. Furthermore, assumptions without personal knowledge or examination of records "do not provide clear and convincing evidence of date and extent of publication." Depuy, supra; see also Aluminum Co. of America v. Reynolds Metal Co., 1989 WL 165064 at *2 (N.D. Ill. 1989) (holding that a report distributed to 33 government, corporate, and individual parties with only a restriction barring export from the United States was not a printed publication where

no evidence was offered to show any receiving parties made the document public); but see Ex Parte Bersuch, 2006 WL 2700807 at *11 (B.P.A.I. 2006) (holding that a publication presented to forty to fifty conference attendees and made available to any interested party is a printed publication). Moreover, though the cover page of the CODIT Final Review discloses a “Keyword list” (RX-142 at 1), which lists the keywords “UMTS,” “CODIT,” and “CDMA,” there is no indication on the cover page, nor any evidence offered by respondents, to show that the CODIT Final Review was indexed in such a way that the reference was “sufficiently accessible ... to the public interested in the art.” See Depuy, supra.

Based on the foregoing, the administrative law judge finds that the CODIT Final Review is not a printed publication for purposes of 35 U.S.C. § 102(a)-(b), and thus is not prior art to the power ramp-up patents.

Respondents argued, with respect to the public availability of the CODIT Final Review, that “[o]nce the CODIT Final Review Report was entered into evidence, InterDigital bore the burden of production to show conception and reasonable diligence toward reduction to practice from a date just prior to the November 21, 1995 publication date until June 27, 1996...” (RBr at Sec. II, p. 89.) {

} the burden to establish whether a reference is publicly available is on the party asserting invalidity. See supra. Respondents offer only the bare assertions that the document is dated November 21, 1995, and thus was publicly available on that date. The administrative law judge finds that respondents have not met their burden of showing public availability of the CODIT Final Review Report.

H. Prosecution Laches

Nokia argued that InterDigital's impermissible expansion of the scope of the power ramp-up patents, their failure to timely disclose them to ETSI (European Telecommunication Standards Institute) and their efforts to seek an injunction based thereon is contrary to public policy and constitutes patent misuse. (RBr at IV-16.) Thus Nokia argued that InterDigital delayed for nearly a decade before presenting the asserted claims to the Patent Office; that those asserted claims were added late in prosecution in an effort to cover intervening developments that InterDigital and the inventors never thought of themselves, never disclosed to the public, and never considered as their invention; that InterDigital learned of those intervening developments from others in the industry, including Nokia, as a result of InterDigital's monitoring of the standardization activities relevant to the RACH procedure for WCDMA; and that InterDigital's strategy of prosecutorial delay and manipulation of the statutory patent system during prosecution of the power ramp-up patents claims constitutes prosecution laches sufficient to preclude InterDigital from enforcing those patents Nokia. (RBr at Sec. IV, p. 2.)

Complainants argued that they diligently pursued allowance of the power ramp-up patents; that the time spent prosecuting said patents and the number of continuations are reasonable; that no court has ever found prosecution laches under similar facts; and that complainants' continuation practice does not prejudice public rights. (CBr at 89-94.)

The staff argued that the evidence does not support a determination that the power ramp-up patents are unenforceable due to prosecution laches. (SBr at 69-70.)

In Symbol Technologies, Inc. v. Lemelson Med., Educ. & Research Found., LP 277 F.3d 1367 (Fed. Cir. 2002) (Symbol II) the sole issue on appeal was whether, as a matter of law, the

equitable doctrine of laches may be applied to bar enforcement of patent claims that issued after an unreasonable and unexplained delay in prosecution even though the applicant complied with pertinent statutes and rules, Id. at 1363. On appeal the Federal Circuit, reversing the district court's conclusion that the defense of prosecution laches was "unavailable" as a matter of law, remanded the case to the district court for further proceedings consistent with its opinion. Id. at 1368. The Federal Circuit thereafter in Symbol Technologies, Inc. v. Lemelson Med., Educ. & Research Found., LP, 277 F.3d 1378 (Fed. Cir. 2005) (Symbol)¹⁷ found that said district court did not abuse its discretion in holding that 76 claims of Lemelson's patent were unenforceable under the doctrine of prosecution laches. Id. at 1380. Significantly the following language is found in Symbol:

We agree with Symbol that the court did not abuse its discretion in holding that Lemelson's patents are unenforceable under the doctrine of prosecution laches. The doctrine of prosecution laches is an equitable defense, Symbol II, 277 F.3d at 1366 (quoting P.J. Federico, Commentary on the New Patent Act, 75 J. Pat. & Trademark Off. Soc'y 161, 215 (1993)), and we review the judgment of the district court on that issue for an abuse of discretion, Bridgestone/Firestone Research v. Auto. Club, 245 F.3d 1359, 1361 (Fed.Cir.2001). This court has earlier held in this case that prosecution laches may render a patent unenforceable when it has issued only after an unreasonable and unexplained delay in prosecution. Symbol II, 277 F.3d at 1363, 1368. We did not set forth any firm guidelines for determining when such laches exists, but left this determination to the district court on remand, as the defense exists as an equitable doctrine. In so doing, however, we discussed precedent such as Woodbridge v. United States, 263 U.S. 50, 44 S.Ct. 45, 68 L.Ed. 159 (1923), and Webster Electric Co. v. Splitdorf Electrical Co., 264 U.S. 463, 44 S.Ct. 342, 68 L.Ed. 792 (1924), wherein the Supreme Court applied the doctrine of prosecution laches to render patents unenforceable. Although those

¹⁷ The Federal Circuit in Symbol characterized Symbol's declaratory action against Lemelson in the district court (301 F.Supp. 2d 1147 (D.Nev. 2004) as Symbol III.

cases involved a nine-and-a-half-year delay and an eight-year delay, respectively, the Court later held that the presumptive two-year time limit referred to in Webster was dictum because it was not directly applicable to the issue of laches on which the case was decided. Thus, there are no strict time limitations for determining whether continued refiling of patent applications is a legitimate utilization of statutory provisions or an abuse of those provisions. The matter is to be decided as a matter of equity, subject to the discretion of a district court before which the issue is raised.

There are legitimate grounds for refiling a patent application which should not normally be grounds for a holding of laches, and the doctrine should be used sparingly lest statutory provisions be unjustifiably vitiated. The doctrine should be applied only in egregious cases of misuse of the statutory patent system.

Filing a divisional application in response to a requirement for restriction is one such legitimate reason for refiling a patent application. Given one's entitlement to claim an invention in various ways, and the PTO's practice of limiting its examination of an application to only one of what it considers to be several inventions, it cannot, without more, be an abuse of the system to file divisional applications on various aspects that the PTO has considered to be separate and distinct from each other. See 35 U.S.C. § 121 (2000); 37 C.F.R. § 1.142 (2005); see also Manual of Patent Examining Procedure §§ 803, 818 (8th ed., rev. 2 2004). That is so even when one defers the filing of a divisional application until just before the issuance of the parent application. Such action is expressly allowed by statute. 35 U.S.C. § 121. Moreover, one might legitimately refile an application containing rejected claims in order to present evidence of unexpected advantages of an invention when that evidence may not have existed at the time of an original rejection. Commonly, and justifiably, one might refile an application to add subject matter in order to attempt to support broader claims as the development of an invention progresses, although entitlement to an earlier filing date for any claimed subject matter may of course be necessary to avoid a statutory bar created by intervening events outlined in 35 U.S.C. §§ 102 and 103. One may also refile an application even in the absence of any of these reasons, provided that such refiling is not unduly successive or repetitive.

However, refiling an application solely containing previously-allowed claims for the business purpose of delaying their issuance can be considered an abuse of the patent system. See Bogese, 303 F.3d at 1368-69 (discussing Ex parte Hull, 191 USPQ 157 (Bd. Pat.App. & Interfs.1975)). In particular, multiple examples of repetitive refilings that demonstrate a pattern of unjustifiably delayed prosecution may be held to constitute laches. Taken singly, the delay in the prosecution on any one particular application will surely not appear to merit relief by the courts in equity. On the other hand, an examination of the totality of the circumstances, including the prosecution history of all of a series of related patents and overall delay in issuing claims, may trigger laches.

The district court here heard considerable evidence that that was what occurred in this case. The court found that an 18- to 39-year time period had elapsed between the filing and issuance of the patents in suit. Symbol III, 301 F.Supp.2d at 1155. That period of time is not what is contemplated by the patent statute when it provides for continuation and continuation-in-part applications. Patent applications should normally be permitted to issue when they have been allowed and the statutory requirements complied with. The court also found that Lemelson had engaged in "culpable neglect" during the prosecution of these applications and it recognized the adverse effect on businesses that were unable to determine what was patented from what was not patented. Id. at 1156. It noted that the Lemelson patents occupied the "top thirteen positions" for the longest prosecutions from 1914 to 2001. Id. The court also cited the existence of "intervening private and public rights." Id. at 1157. It concluded that "[i]f the defense of prosecution laches does not apply under the totality of circumstances here, the Court can envision very few circumstances under which it would." Id. at 1156. Under those circumstances, we can hardly conclude that the court abused its discretion in holding the involved patents unenforceable on this ground. The court thoroughly examined the facts and the equities, and it exercised its discretion reasonably. We therefore affirm the district court's holding of unenforceability as to the 76 asserted claims.

(422.F.3d at 1384-86) (emphasis added). In Bogese cited by the Federal Circuit in Symbol supra, the Federal Circuit found that:

During the course of adjudicating the patentability of Bogese's patent claims and after Bogese had filed eleven file wrapper continuation applications over an eight-year period, the examiner required Bogese to make a "substantive amendment to advance prosecution" or risk losing his right to a patent. Bogese had an opportunity to respond to the PTO's requirement after the PTO gave that notice, but he did not, and instead filed another file wrapper continuation application without making a substantive amendment to advance prosecution.

On appeal, Bogese makes no serious claim that the PTO acted unreasonably on the facts of this case in requiring him to make a "substantive amendment to advance prosecution" or in finding forfeiture. . . . Rather, Bogese challenges the PTO's authority to require applicants to advance prosecution, urging that he was entitled to continue his chain of continuation applications. We disagree and hold that the PTO has authority to order forfeiture of rights for unreasonable delay. There is no basis for finding the PTO's action to be arbitrary on the facts of this case, given that Bogese filed twelve continuation applications over an eight-year period and did not substantively advance prosecution of his application when required and given an opportunity to do so by the PTO.

In re Bogese 303 F.2d 1362, 1369 (Fed. Cir. 2002) (footnote omitted) (emphasis added).

It is undisputed that the power ramp-up '004 patent (CX-1) was filed on June 14, 2004, and the applications resulting in the '966 power ramp-up patent (CX-2) and power ramp-up '847 patents (CX-3) were both filed on June 29, 2005 (CFF 1.23, CFF 1.31, and CFF 1.40) (all undisputed); that both the '966 and '847 patents are continuations of the '004 patent (CFF 1.33 and CFF 1.42 (all undisputed).); and that these patents claim priority to an application that resulted in U.S. Patent No. 5,841,768 (the '768 patent), which was filed on June 27, 1006 (CFF 1.24, CFF 1.32, and 1.41 (all undisputed).) After the claims of the '768 patent were allowed, five continuation applications were successively filed, which led to the issuance of the '004 patent as shown by the title page of the '004 patent. (CX-1.) The '966 and '847 patents are continuations

from the '004 patent as also shown by the title pages of said patents (CX-2, CX-3) so there are a total of six continuation applications that were filed, and which led to the issuance of there two power ramp-up patents. All of those continuation applications resulted in eight issued patents which the private parties have termed the power ramp-up patents (RFF IV-224 (undisputed in relevant part). Thus the six continuation applications starting from the '768 patent and leading to the '966 and '847 patents all resulted in issued patents: the '004 patent, '966 patent, '847 patent, '768 patent, U.S. Patent No. 6,181,949 (the '949 patent), U.S. Patent No. 6,493,563 (the '563 patent), U.S. Patent No. 6,571,105 (the '105 patent), and U.S. Patent No. 6,839,567 (the '567 patent) (CX-1, CX-2, CX-3, CX-4, CX-16, CX-15, CX-13, and CX-260.) (CFF 6.3 (undisputed).) As for any claim of priority for the power ramp-up patents in issue, the claim of priority for the '004 patent spans 10 years and just over 3 months; the claim of priority for the '966 patent spans 10 years and just over 8 months; the claim of priority for the '847 patent spans 11 years and close to 4 months. (CFF 6.4-6.6 (all undisputed).) However, it is also undisputed that InterDigital substantively responded to all office actions to address rejections in prosecution of the power ramp-up patents instead of waiting until the last day of the response period and filing a continuation without a substantive response. (CX-8, CX-9, CX-10, CX-17, CX-14, CX-11, CX-256, and CX-258.) (CFF 6.7 (undisputed).) In addition during the collective prosecution of the applications resulting in the '768, '949, '563 , '105, and '567 patents, there was only one instance in which applicants took an extension to respond to an office action and that response was filed only three days after the original due date. (CX-14, IDC-007949804 - IDC-ITC-007949813 (8/11/200 reply and extension of time in application leading to the '949 patent); see also, CX-17, CX-14, CX-11, CX-256, and CX-258.) Moreover during the prosecution of the

'004 patent, the Examiner issued only one office action and the claims were allowed within two years of the filing date. (CX-8 at ITC-COMP00007717 - ITC-COMP00007728 (notice of allowance regarding the '004 patent)). During the prosecution of the '004 patent, InterDigital substantively responded to the office action with an examiner interview, claim amendments, and a terminal disclaimer. (CX-8 at ITC-COMP00007242 - ITC-COMP00007278 (summary of interview conducted on 2/22/06, Reply, and Terminal Disclaimer dated 2/24/06)). In addition, the '966 and '847 patents were prosecuted in parallel. (CX-9 and CX-10). Moreover, during prosecution of both the applications leading to the '966 and '847 patents, InterDigital filed preliminary amendments and terminal disclaimers before the issuance of any office action and both of these applications were subsequently allowed on the first action. (CX-9 at NITC-COMP00003615 - NITC-COMP00003636 (preliminary amendments dated 11/7/06 and 11/9/06 relating to the '966 patent), NITC-COMP00003641 - NITC-COMP00003643 [11/01/06 terminal disclaimer relating to the '966 patent], and NITC-COMP00003660 - NITC-COMP00003663 (notice of allowance relating to the '966 patent); CX-10 at IDC-ITC-010498163 - IDC-ITC-010498185 (11/8/06 preliminary amendment relating to the '847 patent), IDC-ITC-010498194 - IDC-ITC-010498211 (11/10/06 terminal disclaimer relating to the '847 patent), and IDC-ITC-010498221 - IDC-ITC-010498249 (notice of allowance relating to the '847 patent)).

Nokia argued that InterDigital took more than 10 years to prosecute the '004 patent measured from the priority date of the 768 patent to the issuance of the '004 patent, even though {

} (RRCFF 6.1A and 6.1B.) Nokia however measures the time record from the priority date of the '768 patent, although Nokia cites no precedent for starting with the priority date. To the contrary, courts in treating the issue have started with the filing of the U.S. application. Thus the Court in Novo Nordisk Pharma., Inc. v. Bio-Technology General Corp., 2004 WL 1739720 (D.Del. 2004) in finding that defendants may not rely on the doctrine of prosecution laches to render a '352 patent unenforceable stated:

Even if the court were to consider the merits of this defense, defendants fail to prove the defense of prosecution laches by clear and convincing evidence. The Federal Circuit held in Symbol Tech. v. Lemelson Med., 277 F.3d 1361 (Fed.Cir.2002), that the equitable doctrine of laches may be applied to bar enforcement of patent claims that issued after an unreasonable and unexplained delay in prosecution, even though the applicant complied with pertinent statutes and rules. Since neither Congress nor the Federal Circuit has provided any further guidance on the legal standard applicable to the prosecution laches defense, this court has focused the inquiry on two precepts. The initial inquiry is based on the "unreasonable and unexplained delay" rule set forth in In re Bogese, 303 F.3d 1362, 367 (Fed.Cir.2002), with primary attention on the "reasonableness of the delay." Intuitive Surgical, Inc. v. Computer Motion, Inc., No. 01-203-SLR, 2002 WL 31833867, *3 (D.Del. Dec.10, 2002). Second, in reviewing the record to determine whether the delay at issue was unreasonable and unexplained, the court must consider the fact that prosecution laches is an equitable tool which has been used sparingly in only the most egregious of cases. Id. There is no evidence of record to suggest that plaintiffs unreasonably delayed in filing claim 1 of the '352 patent. To the contrary, plaintiffs appear to have actively pursued the invention of claim 1 from the filing of the 1984 U.S. application through a series of five continuation applications to the application which granted as the '352 patent. The court also does not consider a ten year span from the filing of the 1984 U.S. application to the filing of the application which became the '352 patent surprising or even uncommon since the prosecution of a single application often requires significant time, on average from

three to five years. Indeed, at least one other district court has held, post-Symbol, that a delay of more than nine years between the filing of a parent application and the issuance of a continuation or divisional patent is not unreasonable. See Gen-Probe Inc. v. Vysis, Inc., No. 99-CV-2668H (S.D.Cal. Aug. 5, 2002) (holding that an eleven year delay between the filing and the issuance of a patent is not unreasonable). Moreover, this court has held that the relevant inquiry is not whether the patentee unreasonably delayed in filing specific claims in a patent application. Intuitive Surgical, 2002 WL 31833867 at *5. Rather, it is whether the patentee unreasonably delayed in prosecuting those claims once filed. Thus, the court concludes that plaintiffs did not obtain claim 1 of the '352 patent after an unreasonable and unexplained delay in prosecution. Accordingly, defendants may not rely on the doctrine of prosecution laches to render the '352 patent unenforceable.

Id. at 33. (emphasis added).

With respect to pendency of patent applications in the Patent Office, the administrative law judge has taken judicial notice of web sites which show the following: the United States Patent and Trademark Office issues a Performance and Accountability Report each fiscal year and measures the "Patent Average Total Pendency" (See, e.g., USPTO, Performance and Accountability Report: Fiscal Year 2007, p. 16, which is publicly available at <http://www.uspto.gov/web/offices/com/annual/2007/2007annualreport.pdf>); the United States Patent and Trademark Office defines "Patent Average Total Pendency" as a measure of "the time from filing until the application is issued as a patent or abandoned by the applicant" (USPTO, Performance and Accountability Report: Fiscal Year 2007, p. 16, which is publicly available at <http://www.uspto.gov/web/offices/com/annual/2007/2007annualreport.pdf>) in 2006; the United States Patent and Trademark Office measured the "Patent Average Total Pendency" as 31.3 months (USPTO, Performance and Accountability Report: Fiscal Year 2007, p. 16, which is publicly available at <http://www.uspto.gov/web/offices/com/annual/2007/2007annualreport.pdf>);

and in 2007, the United States Patent and Trademark Office measured the "Patent Average Total Pendency" as 31.9 months. (USPTO, Performance and Accountability Report: Fiscal Year 2007, p. 16, which is publicly available at <http://www.uspto.gov/web/offices/com/annual/2007/2007annualreport.pdf>). In addition from the filing date to the issue date, the time of pendency of the '768 patent was only 2 years, 4 months, and 29 days. (CX-4 at ITC-COMP00014411.) From the filing date to the issue date, the time of pendency of the '949 patent was only 3 years and 25 days. (CX-16 at ITC-COMP00008021.) From the filing date to the issue date, the time of pendency of the '563 patent was only 2 years and 19 days. (CX-15 at RX0009-001.) From the filing date to the issue date, the time of pendency of the '105 patent was only 1 year, 2 months, and 27 days. (CX-13 at ITC-COMP00001270.) From the filing date to the issue date, the time of pendency of the '567 patent was only 1 year, 9 months, and 10 days. (CX-260 at ITC-COMP00000701.) From the filing date to the issue date, the time of pendency of the '004 patent was only 2 years, 3 months, and 20 days. (CX-1 at ITC-COMP00005644.) From the filing date to the issue date, the time of pendency of the '966 patent was only 1 year, 8 months, and 14 days. (CX-2 at ITC-COMP00016933.) From the filing date to the issue date, the time of pendency of the '847 patent was only 2 years, 3 months, and 25 days. (CX-3 at ITC-COMP00021139.) Thus the time of pendency for the '004 patent, the '966 patent, the '847 patent and the patents from which the '004, '966, and '847 patents claim priority is summarized in the following chart:

Patent	Filing Date	Issue Date	Time of Pendency
5,841,768	June 27, 1996	November 24, 1998	2 years, 4 months, 29 days
6,181,949	January 6, 1998	January 30, 2001	3 years, 25 days
6,493,563	November 22, 2000	December 10, 2002	2 years, 19 days

6,571,105	March 1, 2002	May 27, 2003	1 year, 2 months, 27 days
6,839,567	March 26, 2003	January 4, 2005	1 year, 9 months, 10 days
7,117,004	June 14, 2004	October 3, 2006	2 years, 3 months, 20 days
7,190,966	June 29, 2005	March 13, 2007	1 year, 8 months, 14 days
7,286,847	June 29, 2005	October 23, 2007	2 years, 3 months, 25 days

(CX-4 at ITC-COMP00014411; CX-16 at ITC-COMP00008021; CX-15 at RX0009-001; CX-13 at ITC-COMP00001270; CX-260 at ITC-COMP00000701; CX-1 at ITC-COMP00005644; CX-2 at ITC-COMP00016933; CX-3 at ITC-COMP00021139.) As seen from said chart, the time of pendency for the '004, '966, and '847 patents is less than the "Patent Average Total Pendency" for issued or abandoned U.S. patent applications in 2006 and 2007 found supra. Also the time of pendency for the patents from which the '004, '966, and '847 patents claim priority is consistent with the 2006 and 2007 measurements of "Patent Average Total Pendency" by the United States Patent and Trademark Office found supra even though these patents issued before 2006.

Regarding Nokia's argument that{

} (JX-

10C at 109-110, 123, 130-131.)¹⁸

Nokia relies on{

} (JX-9C at 87-88, JX-10C at 75.)

Nokia, references{

} See

JX-17C, Boles Dep. Tr. at 187-207; JX-23C, Dowling Dep. Tr. at 118-120, 121-124.

Nokia relying on{

¹⁸ While Nokia had the burden to establish an unreasonable and unexceptional delay in prosecution, Nokia did not call{ } to testify live at the evidentiary hearing.

Donch, Dep. Tr. at 70-72.)

Nokia argued that InterDigital's delays in prosecution prejudiced Nokia and the public. The administrative law judge however can find nothing in the statute or regulations, which require that an applicant pursue in the Patent Office all of his or her inventions in parallel. Moreover, the facts in this case are nowhere comparable to the almost 30-year period of uncertainty between the disclosures first made public by Lemelson in his 1962 and 1963 patents and the claims finally granted in 1989 and the early 1990 on those same disclosures. See Symbol II, 301 F. Supp.2d at 1155-56.

Nokia argued that since 1999, Nokia has invested a significant amount of money into research, development, and production of 3G WCDMA compliant handsets worldwide. (RFF IV-1120.) and that InterDigital's "intentional delays" in prosecution prejudiced Nokia and the public (RBr at Sec. IV, p. 8.) The administrative law judge has found supra that any delays were not unreasonable. Moreover, Nokia has invested a significant amount of money into its standards activities which include: {

}

Based on the foregoing the administrative law judge finds that respondents have not sustained their burden in establishing that the power ramp-up patents are unenforceable due to prosecution laches.

V. The ‘579 Patent

The ‘579 patent is titled “Generation of User Equipment Identification specific Scrambling Code for the High Speed Shared Control Channel” and is issued on December 6, 2005. (CFF 1.12; 1.13 (both undisputed).) The inventors of the ‘579 patent are Stephen G. Dick, Nader Bolourchi, and Sung-Hyuk Shin. (CFF 1.14 (undisputed).) The ‘579 patent is based on Patent Application Serial No. 10/187,640, filed on July 1, 2002. (CFF 1.15 (undisputed).) The ‘579 patent has 5 independent claims and 5 dependent claims. (CFF 1.17 (undisputed).) Claims 1, 3, and 4 of the ‘579 patent are being asserted against Nokia in this investigation. (CFF 1.18 (undisputed).)

A. Undisputed Facts

The parties have stipulated to the following involving undisputed technology relating to the ‘579 patent:

In wireless cellular systems, a user equipment (“UE”) (or as also commonly referred to “a cellular phone,” “a handset,” “a subscriber unit,” or “a mobile station”) is configured to communicate with one or more base station.

When the UE is used to send or receive information, it does so by communicating with a base station serving the area in which the UE is located.

The wireless communication link over which information is transmitted from the base station to the UE is generally referred to as the “downlink” or “forward-link.”

The wireless communication link over which information is

transmitted from the UE to the base station is generally referred to as the “uplink” or “reverse-link.”

In order to allow for increased amounts of information to be transmitted from a base station to one or more UEs, a technology referred to as High Speed Downlink Packet Access (“HSDPA”) is used. HSDPA is a wireless communication protocol that provides for increased data transmission rates available in the downlink.

HSDPA uses both data and control channels. High Speed Shared Control Channels (“HS-SCCH”) carry control information from the base station to UEs, and High Speed Physical Downlink Shared Channels (“HS-PDSCH”) carry data from the base station to UEs.

To support HSDPA operations, HSDPA also includes an uplink channel that allows a UE to send certain types of information to the base station. This HSDPA uplink channel is not relevant to any of Complainants’ and Respondents’ disputes regarding the ‘579 Patent.

The base station transmits information to several UEs simultaneously over several sets of channels.

Each set of channels includes an HS-SCCH and one or more HS-PDSCHs. Because these are “shared” channels, each UE receives each of the channels – and therefore, each UE needs to determine whether transmitted information is intended for it (rather than for one of the other UEs).

The HS-SCCHs are transmitted from the base station to the UEs two time slots (a time slot is 2/3 of a millisecond) before the HS-PDSCHs are transmitted – i.e., the UEs receive the HS-SCCH ahead of the HS-PDSCHs. The information on the HS-SCCH can be used by a UE to determine whether data intended for that UE has been transmitted on one or more HS-PDSCHs.

The HS-SCCH is formed of two parts, Part 1 and Part 2.

The HS-SCCH Part 1 information contains control information that a UE needs to read data transmitted on a HS-PDSCH. Specifically, the Part 1 information includes information for identifying a set of channelization codes and a modulation scheme used on the HS-PDSCHs.

The HS-SCCH part 2 information contains additional control information for reading data transmitted on the HS-PDSCHs and detecting transmission errors that the control information may have been subjected to.

In order to address a particular UE, the network assigns each UE a UE identifier, or “UE ID”. The UE ID is used by the base station and the UE to generate a user specific scrambling sequence.

(SX-4 at 2-4.)

B. Experts

Complainants’ expert Dr. Richard Gitlin was qualified as an expert on telecommunications and wireless technology. (Tr. at 942.)

Respondents’ expert Dr. Apostolos Kakaes was qualified as an expert on wireless mobile communications. (Tr. at 1283-1284; see RFF III-72 (undisputed).)

C. Person of Ordinary Skill In The Art

Complainants’ expert Gitlin opined that for the ‘579 patent, a person of ordinary skill would have a bachelor’s or a master’s degree in electrical engineering or related fields of physics, math, or computer science, with three to five years experience in said fields. (Tr. at 945 at 16-21.)

Respondents’ expert Kakaes opined that for the ‘579 patent, a person of ordinary skill would have a bachelor’s or master’s degree in electrical engineering, computer science, mathematics or a related field, with four years of experience in the area of wireless communications, including at least about two years of experience dealing with issues related to coding. (Tr. at 1288.) Kakaes opined that, alternatively, one of ordinary skill could have a Ph.D. in one of said fields and less experience, including at least one year of experience with coding schemes used in communications. (Tr. at 1288.)

Based on the testimony of the experts and the technology in issue the administrative law judge finds that a person of ordinary skill in the art would have at least a bachelor's degree in electrical engineering, computer science, mathematics or a related field, and at least some working experience in the area of wireless communications including issues related to coding with the exact amount of working experience dependent on the person's degrees.

D. Claims In Issue

Asserted claims 1, 3 and 4 are at issue. Asserted independent claim 1 recites:

1. An apparatus comprising: an input configured to accept a user identification comprising L bits; and a 1/2 rate convolutional encoder for processing at least the bits of the user identification by a 1/2 rate convolutional code to produce a code used for scrambling a high speed shared control channel (HS-SCCH).

Asserted independent claim 3 recites:

3. A user equipment comprising: an input configured to accept a 16 bit user identification; and a 1/2 rate convolutional encoder for processing the 16 bit user identification code with eight appended zero bits to produce a 48 bit code for use in descrambling a high speed shared control channel (HS-SCCH).

Asserted dependent claim 4 recites:

4. The user equipment of claim 3 further comprising a rate matching block for puncturing eight bits after the production of the 48 bit code.

E. Claim Construction

The underlying law on claim construction is found in Section IV E supra.

1. The claimed phrase "apparatus"

The claimed phrase "apparatus" appears in the preamble of asserted claim 1. Thus said preamble recites: "An apparatus comprising: . . ." (CX-5 at 3:6.)

Complainants argued that it is appropriate to consider the preamble limitation “apparatus” to give context to the claim term “code used for scrambling.” (CRBr at 5.)

Respondents argued that the phrase “apparatus” requires no construction because said term appears in the preamble of claim 1 and is not necessary to understanding the limitations in the body of the claim. (RBr at Sec. III, pp. 16-17.) Respondents argued in the alternative, however, that if the term “apparatus” is construed, said term must be a base station, not because the word “apparatus” is limited to a base station, but because the body of the claim recites the functional limitation of “scrambling a high speed shared control channel (HS-SCCH),” which can only be performed by a base station. (RBr at Sec. III, pp. 17-18.)

The staff argued that construction of the phrase “apparatus” in the preamble of claim 1 is required because said term gives context to the rest of the claim. (SBr at 35-36.)

The administrative law judge finds that a person having ordinary skill in the art would find no definition of any of the claimed invention’s limitations in the claimed phrase “apparatus.” In fact, the word “apparatus” does not even state the purpose or intended use of the claimed invention. See Rowe, Corning Glass, and Kropa, in Section IV E supra. With the exception of the preambles of asserted independent claim 1 and unasserted dependent claim 2,¹⁹ the term “apparatus” is not recited in the ‘579 patent. Thus, the administrative law judge finds that said

¹⁹ Said claim 2 reads:

2. The apparatus of claim 1 further comprising a rate matching block for puncturing bits after the production of the 1/2 rate convolutional code.

person would construe “apparatus” pursuant to its dictionary definition²⁰ and look to the language of the claims following “comprising” to construe what said “apparatus” relates to.

2. The claimed phrase “a code used for scrambling a high speed shared control channel (HS-SCCH)”

Complainants argued that the phrase “a code used for scrambling” of claim 1 means “a scrambling sequence.” (CBr at 7.) It is argued that the same code is used at the user equipment (UE) and the base station; that the ‘579 patent specification uses the terms “scrambling code” and “scrambling sequence” interchangeably; that said phrase should not be limited to only the base station; that both “scrambling code” and scrambling sequence” are used in the ‘579 patent specification in the context of a descrambling operation at the UE; that the claim language itself demonstrates that the claimed phrase “to produce a code used for scrambling a high speed-shared control channel” simply means that the $\frac{1}{2}$ rate convolutional encoder generates a particular type of code, namely, a scrambling code for the high-speed control channel and that nothing in the ordinary meaning of this phrase further limits the claim such that the scrambling code must then actually be used in a scrambling process; that claim 1 is not limited to a particular operation that is eventually performed using a scrambling code, which the specification teaches is used at the base station to scramble and at the UE to descramble; and that respondents’ expert Kakaes testified that descrambling involves the application of a scrambling sequence. (CBr at 7-10; CRBr at 6.)

²⁰ “Apparatus” is defined in the dictionary as “[t]he totality of means by which a designated function is performed or a specific task executed.” See Webster’s II New Riverside University Dictionary at 118 (1984). Alternatively, an “apparatus” is defined as “[a] machine.” Id.

Respondents argued that “scrambling a high speed shared control channel (HS-SCCH)” means “applying a scrambling sequence to unscrambled data prior to transmission of the data on an HS-SCCH” and that said phrase recites the intended use of the code produced by the convolutional encoder and constitutes a functional limitation on the scope of claim 1. (RBr at Sec. III, p. 20; RRBr at 58.) According to respondents, the only “scrambling” disclosed in the specification is the process where a scrambling sequence is applied by the base station to unscrambled data prior to transmission of the data on HS-SCCH; that the phrase “scrambling a high-speed shared control channel” is a functional limitation and does not require a process step any more than the original claim language does; and that complainants’ construction of the term “a code used for scrambling” as “a scrambling sequence” renders the claim language meaningless because it ignores that the produced code must be “used for scrambling the HS-SCCH” as recited in claim 1 and it ignores the language of claims 1, 3, 5, 7 and 9, which selectively use either the term scrambling (claims 1, 7, and 9) or descrambling (claims 3 and 5) to describe the functional limitations placed on the code produced by the $\frac{1}{2}$ rate convolutional coder. (RBr at Sec. III, pp. 20-23.) Respondents further argued that complainants’ expert admitted that complainants’ construction of “used for scrambling” would rewrite the phrase to include a code “used for scrambling or descrambling”; and that complainants’ view that claim 1 requires only the production of the code with no limitation placed on how that code must be used by the apparatus violates fundamental canons of claim construction because it reads out an entire functional limitation. (RRBr at 57-58.)

The staff argued that one of ordinary skill in the art would understand that the correct construction of a “code used for scrambling a high speed shared control channel” is a “code used

for applying a scrambling sequence to unscrambled data prior to transmission of the data on a high speed shared control channel.” (SBr at 38.) The staff further argued that it is evident from the plain language of the passage in column 1, lines 65-67 of the ‘579 patent cited by complainants that “a code” performs scrambling or descrambling, i.e., one or the other, and that contrary to complainants’ argument, the passage does not state or suggest that the same code performs both scrambling and descrambling. (SRBr at 13.) The staff also argued that although complainants’ expert Gitlin testified that he construes a “code used for scrambling” to mean a “scrambling sequence,” he acknowledged in his previous testimony from the 601 investigation that he interprets a “scrambling sequence” to be a “code used for scrambling or descrambling.” (SBr at 39.) Thus, the staff argued that Gitlin’s construction is inconsistent with the plain language of the claims, which recites “a code used for scrambling,” not “a code used for scrambling or descrambling; and that to construe a “code used for scrambling” in the way suggested by Gitlin would essentially negate the meaning of code, which is error. (SBr at 39-40.)

Referring to the language of the claims in issue, as found supra, the claimed phrase “a code used for scrambling ... [an HS-SCCH]” appears in its entirety only in claim 1 of the ‘579 patent. Thus, claim 1 reads in relevant part:

An apparatus comprising:

* * *

a $\frac{1}{2}$ rate convolutional encoder for processing at least the bits of the user identification by a $\frac{1}{2}$ rate convolutional code to produce a code used for scrambling a high speed shared control channel (HS-SCCH).

(CX-3 at 3:9-12 (emphasis added).) A similar phrase “code for use in scrambling ... [an HS-SCCH]” appears in unasserted independent claims 7 and 9. However, in both claims 7 and 9, a code is produced by a base station for the purpose of scrambling an HS-SCCH for transmissions to a user equipment. Thus, claim 7 reads:

A base station comprising:

an input configured to accept a 16 bit user identification; and

a 1/2 rate convolutional encoder for processing the 16 bit user identification code with eight appended zero bits to produce a 48 bit code for use in scrambling a high speed shared control channel (HS-SCCH) for a user equipment associated with the 16 bit user identification.

(CX-3 at 4:6-14 (emphasis added).) Claim 9 reads:

A base station comprising:

an input configured to accept a 16 bit user identification; and

means for 1/2 rate convolutional encoding the 16 bit user identification code with eight appended zero bits to produce a 48 bit code for use in scrambling a high speed shared control channel (HS-SCCH) for a user equipment associated with the 16 bit user identification.

(CX-3 at 4:18-26 (emphasis added).) The administrative law judge finds nothing in the language of the claims of the ‘579 patent to indicate that the claimed phrase “code used for scrambling ... [an HS-SCCH]” in asserted claim 1 has a different meaning than the nearly identical term “code for use in scrambling ... [an HS-SCCH]” in unasserted independent claims 7 and 9. In each of claims 1, 7 and 9, a code is produced for use in scrambling an HS-SCCH for transmission of

scrambled data. Moreover, in unasserted independent claims 7 and 9, the plain language of the claims, supra, shows that the code is produced by a base station for a user equipment.

In contrast to the language of claims 1, 7 and 9, in asserted independent claim 3 and unasserted independent claim 5 of the ‘579 patent a code is produced by a user equipment for the purpose of descrambling an HS-SCCH. Thus, said claim 3 reads in relevant part:

A user equipment comprising:

* * *

a 1/2 rate convolutional encoder for processing the 16 bit user identification code with eight appended zero bits to produce a 48 bit code for use in descrambling a high speed shared control channel (HS-SCCH).

(CX-3 at 3:16-23 (emphasis added).) Said claim 5 reads:

A user equipment comprising:

an input configured to accept a 16 bit user identification; and

means for 1/2 rate convolutional encoding the 16 bit user identification code with eight appended zero bits to produce a 48 bit code for use in descrambling a high speed shared control channel (HS-SCCH).

(CX-3 at 3:27-4:2 (emphasis added).) Hence, the administrative law judge finds that a person having ordinary skill in the art would conclude that the language of the claims distinguishes between codes produced for use in scrambling, as in claims 1, 7 and 9, and codes produced for use in descrambling, as in claims 3 and 5, and that said person would treat “scrambling” and “descrambling” as separate operations.

Referring to the specification of the ‘579 patent and the production of a code used in scrambling or descrambling the HS-SCCH, the specification, under “Background,” recites:

...the present invention relates to user equipment specific scrambling sequences for [HS-SCCHs].

* * *

The information for a particular UE is distinguished by its UE identification (UE ID) specific scrambling sequence. The UE processes each monitored HS-SCCH with its UE ID specific scrambling sequence to detect the HS-SCCH intended for the UE.^[21]

After processing, the UE determines on which HSS-SCCH, if any, information was carried using its scrambling sequence. The UE descrambles the data carried on Part-1 of its HS-SCCH using its scrambling sequence.^[22]

Until recently, a 10 bit UE ID was used as the basis for the UE ID specific scrambling sequence. In this case, this UE ID was converted into a 40 bit scrambling sequence. To turn the 10 bit UE ID into the 40 bit UE ID specific scrambling sequence, the 10 bit UE ID is processed by a Reed-Muller block to produce a 32 bit code. The first 8 bits of the produced code are repeated and appended onto the back of the 32 bit code to produce a 40 bit code.

* * *

To reduce the occurrence of false detections, it is desirable to have good separation between the produced scrambling codes for each UE ID. Accordingly, it is desirable to have alternate approaches to producing scrambling codes.

²¹ It is undisputed that the specification uses the terms “scrambling code” and “scrambling sequence” interchangeably. (CFF 2.35 (undisputed).)

²² It is undisputed that HS-SCCH consists of two parts: Part 1 and Part 2. (RFF III-100 (undisputed).)

(CX-3 at 1:12-15, 32-62 (emphasis added).) The specification, under “Description of the preferred embodiments,” discloses:

FIGS. 1A and 1B are diagrams of a preferred UE ID specific scrambling sequence circuit.... [N]o additional hardware is required to generate the convolutionally encoded UE ID specific scrambling sequence....

FIGS. 2A and 2B are diagrams of preferred UE ID specific scrambling sequence circuit[s] for a preferred UE ID codes [sic] of length 16.... After being processed by the 1/2 rate convolutional encoder 14, the output code is 48 bits in length....

To reduce the length of the code to a preferred length of 40 bits, eight bits are preferably punctured.... After the rate matching stage 16, the effective length of the scrambling code is 40 bits.

FIG. 4 is a simplified diagram of a user equipment descrambling a HS-SCCH using the UE ID specific scrambling code. The UE ID scrambling code is mixed, such as by exclusive-or gate 18, with the received HS-SCCH for use in recovering the encoded HS-SCCH data.

FIG. 3 is a simplified diagram of a base station scrambling encoded data with the UE ID specific scrambling code for transfer over the HS-SCCH. The encoded data is mixed with the UE ID scrambling code, such as by exclusive-or gate 20, for a particular user....

(CX-3 at 2:29-31, 42-44, 47-49, 53-67, 3:1-3 (emphasis added).)²³ The language of the specification (see reference to Figs. 1A, 1B, 2A, 2B, 3 and 4, supra) thus recites the process for creating a scrambling sequence,²⁴ which the specification in turn discloses may be used either for scrambling (by a base station) or descrambling (by a user equipment). As described in the specification, supra, the scrambling sequence is a string of bits, preferably 40 bits in length, which is combined with data to scramble the data for a specific user equipment.

The administrative law judge finds that the specification's disclosure of "scrambling" is consistent with the specification's disclosure of "descrambling." With respect to "descrambling," it is undisputed that the "descrambling" operation described in the specification is always performed by the user equipment (UE), never by the base station. (RFF III-116 (undisputed).) In addition to describing the "descrambling" operation as always performed by the UE, the specification discloses that said "descrambling" operation is performed by the UE on scrambled data that are carried on the HS-SCCH. For example, see background section supra. Also, see description of the preferred embodiment Fig. 4 supra. Thus, the administrative law judge finds that the specification discloses that the "descrambling" operation is performed at the

²³ Similarly, the Abstract of the '579 patent provides that "[a] code is produce[d] for use in scrambling or descrambling data associated with ... [an HS-SCCH] for a particular user equipment." (CX-3 at ITC-COMP00000002.) Thus, like the specification, the Abstract of the '579 patent discloses that a code used in both processes is the same code. The Summary of the patent includes identical language. (CX-3 at 1:65-67.)

²⁴ As seen from the foregoing portions of the specification, the specification of the patent refers to the code interchangeably as a "scrambling sequence," "scrambling code" or "output code." In addition, as seen from the language related to FIG. 3, supra the specification discloses that the operation of "scrambling" is performed at the transmitter end of the HS-SCCH (e.g., at the base station), using a scrambling code, prior to transferring the scrambled data on the HS-SCCH.

user equipment end of the HS-SCCH on data that is carried on the HS-SCCH. In other words, the specification discloses that data is scrambled with the UE ID specific scrambling code or sequence prior to transmission on the HS-SCCH, then transmitted on the HS-SCCH and subsequently descrambled at the UE using the UE ID specific scrambling code or sequence. He further finds based on the specification, supra, that a person having ordinary skill in the art would conclude that the terms “scrambling sequence,” “scrambling code” and “output code” are equivalent as used in the ‘579 patent.

The administrative law judge also finds that the prosecution history of the ‘579 patent application also supports that “scrambling” as recited in claim 1 means applying a scrambling code or sequence prior to transmission on the HS-SCCH and that “scrambling” and “descrambling” are distinct operations. During prosecution of the ‘579 patent application, the Examiner rejected all claims, including independent claim 1, as being anticipated by U.S. Patent No. 6,539,041 to Hi Chan Moon (Moon) which is directed to a system for synchronizing frame rates in a CDMA system. (CX-12 at 81.) In response, the applicants of the ‘579 patent provided the following distinctions between the ‘579 patent invention and the prior art Moon reference:

At least the bits of the user identification [in the claimed invention] are processed by a half rate convolutional encoder to produce a code used for scrambling or descrambling a high speed shared control channel (HS-SCCH).

Moon does not disclose scrambling or descrambling of a high speed shared control channel. The portions referred in the office action of Moon refer to scrambling and potentially descrambling of a paging channel. Accordingly, the invention is already distinguished from Moon.

(CX-12 at 90 (emphasis added).) The Examiner subsequently issued a Notice of Allowability. (CX-12 at 140.) Applicants argued in said amendment that Moon related to “scrambling or descrambling of a paging channel,” and thus did not disclose “scrambling or descrambling ... [an HS-SCCH].” Id. Thus, in the language of the amendment, supra, the applicants distinguished between “scrambling” and “descrambling” as distinct operations. Hence, the prosecution history indicates that at least one of the basis for distinguishing claim 1 of the ‘579 patent from the Moon reference is said prior art’s disclosure of “scrambling and potentially descrambling *a paging channel*” and not the HS-SCCH. (See RFF III-397.)

Based on the plain language of the claims, the specification which discloses that a scrambling sequence may be used either for scrambling (by a base station) or descrambling (by a user equipment) and prosecution history of the ‘579 patent, the administrative law judge finds that a person having ordinary skill in the art would interpret the phrase “scrambling” in asserted claim 1 to mean “to combine unscrambled data with a scrambling sequence to produce scrambled data, such that the unscrambled may only be recovered from the scrambled data by using an identical scrambling sequence.”

The administrative law judge also finds that the extrinsic evidence supports that “scrambling a high speed shared control channel (HS-SCCH)” means applying a scrambling sequence to unscrambled data prior to transmission of the data on an HS-SCCH. With respect to the ‘579 specification, respondents’ expert Kakaes testified:

[The passage describing Figure 3] confirms what one would understand from reading all of the patents, that what scrambling is, is what happens at the base station for a very simple reason of the high-speed shared control channel is a down link channel only, as I believe has been said repeatedly. The scrambling is what happens at transmitter.

And, therefore, the scrambling process happens at the base station, scrambling the high-speed shared control channel which is intended to be transferred to an end user.

(Tr. at 1355:22-1356:7 (emphasis added).) Thus, Kakaes testified that one of ordinary skill would understand that HS-SCCH is a downlink channel and that “scrambling” in the ‘579 patent occurs prior to transmission on the HS-SCCH.

In addition, complainants’ expert Gitlin admitted that HS-SCCH is a downlink-only channel, which is never transmitted by a handset, and that scrambling is done at the base station and that descrambling is done at the UE. Specifically Gitlin testified:

Q. Now, handsets, the high-speed shared control channel, that is a downlink-only channel, right?

A. Yes

Q. It is never transmitted by a handset, right?

A. The channels we’re talking about are downlink direction.

Q. So the high-speed shared control channel is never transmitted by a handset, right?

A. I would – yes.

...

Q. Is the scrambling operation in HS-DPA of the high speed shared control channel done only at the base station?

A. Yes, as I have said this morning in describing the system, scrambling is done at the base station.

Q. And the operation of descrambling, that happens only at the handset, right?

A. Descrambling is done at the UE, the mobile.

(Tr. at 1108:9-1109:16.) Also see Webster's II New Riverside University Dictionary at 1048 (1984) (defining "scramble" as "to distort or garble (a signal) in order to make it unintelligible without a special receiver"); accord Merriam-Webster Dictionary Online (defining "to scramble" as "to disarrange the elements of a transmission (as a telephone or television signal) in order to make unintelligible to interception" and "descramble" as "to restore (scrambled communication) to intelligible form").

Based on the foregoing, the administrative law judge finds that a "code used for scrambling a high speed shared control channel" is a "a string of bits used to scramble unscrambled data prior to transmission of the data on a high speed shared control channel (HS-SCCH)."

Complainants argued that their construction does not read the word "scrambling" out of the claim because the term "for scrambling" modifies the noun "code," thus describing the type of code being generated. (CRBr at 7.) The administrative law judge finds this argument inconsistent with testimony by complainants' expert Gitlin, who maintained that "the code used for scrambling is a scrambling sequence that could be used for scrambling or descrambling." (Tr. at 1109:24-1110:1 (emphasis added); see also Tr. at 1127:10-20.) As pointed out by the staff, to construe a "code used for scrambling" as a "code used for scrambling or descrambling" would essentially negate its meaning. (SRBr at 15.)

3. The claimed phrase "a 48 bit code for use in descrambling a high speed shared control channel (HS-SCCH)"

The claimed phrase in issue is found in asserted independent claim 3 in issue.

Complainants argued that the term "a 48 bit code for use in descrambling a high speed shared control channel (HS-SCCH)" as recited in claim 3 means "a sequence of 48 bits that

(when output from the ½ rate convolutional encoder) is used to generate a scrambling sequence that is used for descrambling the HS-SCCH.” (CBr at 10-11.) Complainants further argued that their construction of “48 bit code for use in descrambling” in claim 3 is consistent with their construction of “code used for scrambling” in claim 1; and that said respective phrases are not parallel because the former is used in the specific context of a UE (claim 3) whereas the latter is used in the general context of an apparatus (claim 1); that the ‘579 patent would not support an interpretation of claim 3’s “48 bit code for use in descrambling” as describing a “descrambling code” because the ‘579 patent specification makes no reference to a “descrambling sequence” but makes clear that the same “scrambling sequence” is used to scramble and descramble; and that there is notable difference in the intended use language of UE or base station specific claims 3, 5, 7, and 9 (“for use in scrambling/descrambling”) and generic claim 1 (“code used for scrambling”). (CBr at 11-12.)

Complainants also argued that the plain and ordinary meaning for the phrase “descrambling” in the claimed term in issue which is recited in asserted claim 3 is “to undo the effect of scrambling to recover the original data” and thus “descrambling a high speed shared control channel” means “undoing the scrambling to recover the original Part 1 data from the high speed shared control channel.” (CBr at 13.) Complainants further argued that “descrambling” is not defined by the ‘579 patent to have a particular meaning and that consequently said phrase should be given its plain and ordinary meaning; and that the plain and ordinary meaning as reflected in the dictionary is to “unscramble” data, with “unscramble” being defined to mean “to restore (a scrambled message) to intelligible form”. (CBr at 13-15.) Complainants also argued that respondents cannot credibly ignore the plain meaning of “descrambling” by relying upon

Figure 4 of the ‘579 patent, which is described as a “simplified diagram” from the specification. (CRBr at 7-8.)

Respondents argued that the phrase “descrambling a high speed shared control channel (HS-SCCH)” in the claimed term in issue means “applying a scrambling sequence to the scrambled data received on an HS-SCCH to recover the data scrambled prior to transmission.” (RBr at Sec. III, p. 25.) According to respondents, “descrambling a high speed shared control channel (HS-SCCH)” is the inverse operation of “scrambling a high speed shared control channel (HS-SCCH)” that is recited in claim 1; that whereas the scrambling phrase of claim 1 requires applying a scrambling sequence to unscrambled data in order to scramble (or mask) it prior to transmission on HS-SCCH, the descrambling term of claim 3 requires applying the sequence to scrambled data received on the HS-SCCH in order to descramble (or damask) it. (RBr at Sec. III, pp. 25-28.) Respondents further argued that complainants’ proposed construction of “descrambling” is deceptive because while it appears on its face to mean recovering the information that existed prior to scrambling, it contains the buried distinction that the information that is recovered is not the information that was scrambled at the base station. (RRBr at 60.) It is argued by respondents that complainants define the “Part 1 data” in their construction to be the original eight (8) Part 1 bits that are encoded and rate matched to produce the 40 bit sequence that is actually scrambled at the base station and that this slight-of-hand construction allows complainants to apply their construction to any process that recovers the original 8 Part 1 bits, regardless whether or not the bits that are actually scrambled are ever descrambled. (*Id.*)

The staff argued that one of ordinary skill in the art would understand that the correct construction of “48 bit code for use in descrambling” in the claimed phrase in issue which is

recited in asserted claim 3 is “a sequence of 48 bits that (when output from the ½ rate convolutional encoder) is used to generate a scrambling sequence that is used for descrambling the HS-SCCH” because it is consistent with the claim context and intrinsic record. (SBr at 40.) The staff points out that although its proposed construction of “48 bit code for use in descrambling” uses the same words as complainants’ construction of “48 bit code for use in descrambling,” the respective constructions do not have the same meaning because complainants and the staff disagree as to the meaning of the term “descrambling.” (SBr at 40.) The staff argued that a person of ordinary skill would understand that “descrambling” in the claimed phrase in issue which is recited in asserted claim 3 is simply the inverse operation of the “scrambling” process. (SBr at 40-41.)

Independent claim 3 uses only the term “descrambling” and does not use the phrase “scrambling.” Thus, claim 3 reads in relevant part:

A user equipment comprising . . . a 1/2 rate convolutional encoder for processing the 16 bit user identification code with eight appended zero bits to produce a 48 bit code for use in descrambling a high speed shared control channel (HS-SCCH)

(CX-5 at 3:16-23 (emphasis added).) The administrative law judge finds that a person of ordinary skill in the art would conclude that the plain meaning of “descrambling” in asserted claim 3 is a process to reverse scrambling. Thus, said person would conclude that the plain language of the claim describes a code, 48 bits in length, that is used in the processing of scrambled data carried on an HS-SCCH to produce the data that was scrambled.

Referring to the specification of the ‘579 patent, the claimed term “descrambling” of the claimed phrase in issue appears four times. The Abstract of the ‘579 patent merely refers to a

code “for use in scrambling or descrambling data associated with a high speed shared control channel” but provides no detail as to implementation of said processes. (CX-3.) Also, “scrambling and descrambling” are listed as processes applied to “data associated with [an HS-SCCH]” using a code, with no details provided as to how either process should be implemented. (CX-3 at 1:65-67.) The Background section of the specification additionally recites that, as part of the process “[t]o obtain its Part-1 information,” each handset monitors four HS-SCCHs, processes each HS-SCCH with its UE ID specific scrambling sequence, and “descrambles the data carried on Part-1 of its HS-SCCH.” (CX-3 at 1:31-41.) No additional detail is provided in the Background as to what data is produced by this descrambling or whether any additional processing required to recover the Part 1 information. Id. However as found supra, it is undisputed that the operation of “descrambling” described in the specification is always performed by the UE, never by the base station. (RFF III-116 (undisputed).) In addition, as found supra, the specification also discloses that said “descrambling” operation is performed by the UE on scrambled data that are carried on the HS-SCCH. (See CX-5 at 1:32-42.) In particular, the specification of the ‘579 patent describes the relationship between the operation of “descrambling” and the operation of “scrambling” with respect to Figures 3 and 4:

Fig.3 is a simplified diagram of a base station scrambling encoded data with the UE ID specific scrambling code for transfer over the HS-SCCH. The encoded data is mixed with the UE ID scrambling code, such as by an exclusive-or gate 20, for a particular user. The scrambled data is used to produce the HS-SCCH for transfer to the particular user.

Fig. 4 is a simplified diagram of a user equipment descrambling a HS-SCCH using the UE ID specific scrambling code. The UE ID scrambling

code is mixed, such as by exclusive-or gate 18, with the received HS-SCCH for use in recovering the encoded HS-SCCH data.

(CX-5 at 2:61-3:4 (emphasis added). Thus, the specification discloses that data is scrambled with the UE ID specific scrambling code or scrambling sequence at one end (e.g. base station) prior to transmission on the HS-SCCH, and that said data is subsequently recovered at another end (e.g. user equipment) using the UE ID specific scrambling code or scrambling sequence. In other words, there is an inverse relationship between the process of scrambling and the process of descrambling.

In addition, the administrative law judge has found supra with reference to the claimed phrase “a code used for scrambling a high speed shared control channel (HS-SCCH)” of claim 1 that the prosecution history supports a finding that “scrambling” and “descrambling” are distinct operations.

The extrinsic evidence also supports that “scrambling” and “descrambling” are distinct and inverse operations and that “descrambling a high speed shared control channel (HS-SCCH)” means “applying a scrambling sequence to the scrambled data received on an HS-SCCH to recover the data scrambled prior to transmission.” With respect to the ‘579 specification, respondents’ expert Kakaes testified:

[A] person of ordinary skill in the art by reading all the related documents would understand that descrambling happens at the receiving end and descrambling high-speed shared control channel would mean that one would apply the scrambling sequence to the scrambled data that’s received with the intent to descramble it. Of course when I said received, that would be on the high-speed shared control channel. And the intent of the descrambling process would be to recover the data that was previously scrambled as it was prior to being scrambled in the transmission.

(Tr. at 1359-1360.)

Based on the foregoing, the administrative law judge finds that one of ordinary skill in the art would understand the process of “descrambling” as the “inverse” of scrambling, and that data is scrambled with a scrambling code or sequence at one end of the HS-SCCH (e.g. base station) prior to transmission and that said data is subsequently recovered using the specific scrambling sequence at the user end of the HS-SCCH (e.g. user equipment). Accordingly, the administrative law judge finds that the language “descrambling a high speed shared control channel (HS-SCCH)” in the claimed term in issue means “applying a scrambling sequence to process the scrambled data received on an HS-SCCH to reproduce (recover) the data scrambled prior to transmission.”

With respect to the entire claimed phrase in issue “a 48 bit code for use in descrambling a high speed shared control channel (HS-SSCH),” it is undisputed that the ‘579 patent discloses that “the output code [from the $\frac{1}{2}$ rate convolutional encoder] is 48 bits in length” and “[t]o reduce the length of the code to a preferred length of 50 bits, eight bits are preferably punctured.” (CFF 2.49 (undisputed).) It is also undisputed that the ‘579 patent discloses that “[a]fter the rate matching stage 16, the effective length of the scrambling code is 40 bits.” (CFF 2.50 (undisputed).) Thus, the specification discloses that the scrambling code or sequence is generated from the 48 bit output from the $\frac{1}{2}$ rate convolutional encoder. Accordingly, the administrative law judge finds that “a 48 bit code for use in descrambling a high speed shared control channel (HS-SSCH)” means “a sequence of 48 bits (output from the $\frac{1}{2}$ rate convolutional encoder) used to generate a scrambling sequence that is used to process scrambled data transmitted on a high speed shared control channel (HS-SCCH) to reproduce data that was scrambled.”

Complainants argued that the fact the simplified diagram disclosed in the specification shows recovery of encoded data does not trump the express teaching from the background section of the specification that the descrambling operation at the UE is intended to “[o]btain its Part-1 information.” (CRBr at 8.) Specifically, complainants cite the following passage from the background section of the ‘579 patent:

To obtain its Part-1 information, each HSDPA UE monitors up to four HS-SCCHs for its information. The information for a particular UE is distinguished from other UEs by its UE identification (UE ID) specific scrambling sequence. The UE processes each monitored HS-SCCH with its UE ID specific scrambling sequence to detect the HS-SCCH intended for the UE. After processing, the UE determines on which HS-SCCH, if any, information was carried using its scrambling sequence. The UE descrambles the data carried on Part-1 of its HS-SCCH using its scrambling sequence.

(CX-5 at 1:31-41.) However, the administrative law judge finds that the only occurrence of “descramble” in said section cited by complainants is the last sentence:

The UE descrambles the data carried on Part-1 of its HS-SCCH using its scrambling sequence.

(CX-5 at 1:39-41.) The administrative law judge finds that this sentence merely describes descrambling of data carried on Part-1 of the HS-SCCH and does not describe descrambling as the process of obtaining the original Part 1 information control channel bits itself. Moreover, as shown by testimony from complainants’ expert Gitlin, there is a distinction between the original unencoded Part-1 information, which is only eight (8) bits, and the actual encoded signal of 40 bits that becomes presented to the scrambling operation. (Tr. at 970:5-16; see also RRCFF 2.62B-D.)

Complainants further argued that Figure 4 is described as a “simplified diagram,” not a preferred embodiment; that a routine decoding step would be used to recover the Part-1 bits from the encoded HS-SCCH data; and that the fact that the decoding step is not shown in the simplified diagram does not exclude this subsequent step. The administrative law judge finds that Figure 4, which does not show any decoding step, is a preferred embodiment since it is described under the preferred embodiments section of the ‘579 patent. Moreover, complainants’ expert Gitlin admitted that the process of descrambling is completed if the intention is to recover the encoded high-speed shared control channel data. (Tr. at 1124:15-18 (“If all you’re intention is to recover the encoded high-speed shared control channel data, I would say you have done – you have completed the descrambling.”))

4. The claimed phrase “1/2 rate convolution encoder”

Complainants argued that the phrase “1/2 rate convolution encoder” as recited in claims 1 and 3 means “a convolutional encoder that effectively doubles an input sequence of bits.” (CBr at 16.) Complainants further argued that the “1/2 rate convolution encoder” is not limited to any particular implementation in hardware or software, but rather can be implemented in many different ways, including a shift register approach and a table-driven approach; and that the intrinsic evidence does not define “1/2 rate convolution encoder” as requiring a specific ratio of input to output bits. (CBr at 16-17.)

Respondents argued that a “1/2 rate convolution encoder” as recited in claims 1 and 3 is “an encoder where the relationship between the output and the input can be described by the mathematical operation called convolution and where the ratio of the number of input bits to output bits is 1 to 2.” (RBr at Sec. III, p. 36.) According to respondents, complainants takes the

disingenuous position that the intrinsic evidence does not define “1/2 rate convolution encoder” as requiring a specific ratio of input to output bits; and that complainants’ argument ignores the term “1/2 rate” which distinguishes the claimed convolutional encoder from other encoder from other encoders by specifying that the “rate” of the encoder is “1/2”; that every witness in the hearing agreed that a $\frac{1}{2}$ rate convolutional encoder produces two output bits for every input bit; and that complainants’ own construction concedes that the claimed encoder “effectively doubles” the number of input bits at the output. (RRBr at 64.) Respondents further argued that complainants ignored the requirement that a “convolutional” encoder must generate output bits from the input bits using the operation of “convolution”; and that complainants’ emphasis that either a shift register approach or a table-driven approach may be used to implement a convolutional encoder misses the point because the mere presence of a table or a shift register in an encoder implementation does not make that encoder a convolutional encoder. (RRBr at 65.)

According to respondents, both parties’ constructions agree on a crucial point: a $\frac{1}{2}$ rate convolution encoder outputs 2 bits for every input bit, as the name “1/2 rate” specifies; that the parties’ respective constructions differ with respect to how a convolutional encoder should be defined; and that regardless of the difference in construction, both parties’ experts agree that the process of convolution requires a series of XOR sums of the current input bit with certain defined previous input bits, which allows the encoder to accept an arbitrary number of input bits.

The staff argued that it discerned no meaningful distinction between complainants’ and respondents’ proposed construction of “ $\frac{1}{2}$ rate convolutional encoder” and that either construction would be appropriate. (SBr at 38.)

The claimed phrase “1/2 rate convolutional encoder” appears in asserted independent claims 1 and 3 of the ‘579 patent. (CX-5, col. 3.) Thus, independent claim 1 recites:

An apparatus comprising: an input configured to accept a user identification comprising L bits; and a 1/2 rate convolutional encoder for processing at least the bits of the user identification by a 1/2 rate convolutional code to produce a code used for scrambling a high speed shared control channel (HS-SCCH).

(CX-5 at 3:6-8 (emphasis added).) In addition, independent claim 3 recites:

A user equipment comprising: an input configured to accept a 16 bit user identification; and a 1/2 rate convolutional encoder for processing the 16 bit user identification code with eight appended zero bits to produce a 48 bit code for use in descrambling a high speed shared control channel (HS-SCCH).

(CX-5 at 3:16-23 (emphasis added).) The language of the claims does not, however, define said phrase in issue.

Referring to the specification, the parties agree that the specification of the ‘579 patent discloses that the $\frac{1}{2}$ rate convolutional encoder produces an output that is double the length of the input (CX-5 at 2:49-55 (“The 16 bit UE ID is input into a $\frac{1}{2}$ rate convolutional encoder 14 along with eight zero bits appended onto the end of the input string . . . After being processed by the $\frac{1}{2}$ rate convolutional encoder 14, the output is 48 bits in length . . . ”)). (RFFIII-480 (undisputed).)²⁵

The specification further discloses that said input is a sequence of bits. (See CX-5 at 2:29-34 (“FIGS. 1A and 1B are diagrams of a preferred UE ID specific scrambling sequence circuit. A UE ID, XUE, of length L is input into the circuit. L can be any length, such as 8 bits, 10 bits, 16

²⁵ The parties also agree that a “ $\frac{1}{2}$ rate convolutional encoder” must for each input bit produce two output bits. (RFF III-479 (undisputed).)

bits, etc. The UE ID, $XUE = \{XUE1, \dots, XUEL\}$, is input into a $\frac{1}{2}$ rate convolutional encoder 10 as shown in FIG. 1A.”).

As found supra, during prosecution of the ‘579 patent application, the Examiner rejected all claims, including independent claims 1 and 3, as being anticipated by U.S. Patent No. 6,539,041 to Moon. (CX-12 at 81.) In response, the applicants of the ‘579 patent application provided the following distinctions between the ‘579 patent invention and the prior art Moon reference:

Furthermore, to generate a scrambling sequence for the paging channel, Moon discloses using some sort of long code mask, which is not described in the specification. Then Moon inputs that long code mask into a long code generator to produce a long code. Subsequently, the length of the code is decimated prior to scrambling the paging data. This is an entirely different arrangement than the present invention, where first, a user identification is used and, second, a half rate convolutional encoder. As well known in the art, a half code convolutional encoder effectively doubles the rate of an input code.

(CX-12 at 90-91 (emphasis added).) Thus, the administrative law judge finds that the specification as well as the prosecution history of the ‘579 patent application discloses that a “ $\frac{1}{2}$ rate convolutional encoder” is a convolutional encoder that effectively doubles the length of an input sequence of bits.

Turning to extrinsic evidence, respondents’ expert Kakaes testified:

Q. And would a half-rate convolutional encoder have been something a person of ordinary skill in the art would have been familiar with in 2002, early 2002?

A. Yes.

Q. What would a person of ordinary skill in the art have understood a half-rate convolutional encoder to be in that time frame?

- A. A half rate convolutional encoder would have been understood to be an encoder that for every one bit that comes into it, produces two bits of output. Thus, the phrase one-half. The value of those two output bits would be generated according to mathematical operation called convolution, whereby the input could be convolved with characteristic impulse response of the specific rate one-half convolutional encoder.

(Tr. at 1313-1314 (emphasis added).) Thus, the administrative law judge finds that one of ordinary skill the art would understand “convolutional encoder” to be an encoder where the relationship between the output and the input can be described by the mathematical operation called “convolution.”

Based on the foregoing, the administrative law judge finds that “1/2 rate convolutional encoder”, which was known by a person of ordinary skill in the art in early 2002, is “a convolutional encoder that effectively doubles an input sequence of bits,” and that the term “convolutional encoder” means “an encoder where the relationship between the output and the input can be described by the mathematical operation called convolution.”

F. Infringement

The underlying law on infringement is found in Section IV supra.

1. Accused Products

The accused HSPDA handsets include the handsets containing{

}

2. { }

With respect to claim 1 of the '579 patent, complainants argued that infringement of said

claim by the accused{ } based handsets depends solely on whether the administrative law judge decides to adopt complainants' construction for the claimed term "apparatus" to mean "base station and/or a user equipment," or alternatively to accept respondents' narrower construction of the claimed term "apparatus" as being limited to only a base station. According to complainants, respondents do not dispute that all elements of claim 1

are satisfied by the{ } based handsets under complainants' constructions; that

respondents agree that the{ } based handsets are {

}

With respect to claim 3 of the '579 patent, complainants argued that the accused

{ } based handsets infringe claim 3 under complainants' claim constructions, literally or under the doctrine of equivalents; that respondents do not dispute that the accused

{ } based handsets are{

}

{

}

Complainants also argued that the accused{ } based handsets infringe claim 3 of the '579 patent under respondents' claim constructions, literally or under the doctrine of equivalents;{

}

Complainants further argued that the accused{ } based handsets infringe dependent claim 4 of the '579 patent under either party's proposed claim constructions because every accused{

}

Respondents argued that the{ } Respondents argued that the{ }

{ }

With respect to claim 1, respondents argued that the {

}

With respect to claim 3, respondents argued that the {

}

{ } Respondents also argued that the {

}

The staff argued that the preponderance of the evidence did not establish that the {

}

Referring to independent claim 1 of the '579 patent, the administrative law judge found in Section V E2 supra that a "code used for scrambling a high speed shared control channel (HS-SCCH)" is a "a string of bits used to scramble unscrambled data prior to transmission of the data on a high speed shared control channel (HS-SCCH)" and that "scrambling" and "descrambling" are separate operations. It is undisputed that each of the accused { }

{

} Accordingly, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the accused { } based handsets infringe claim 1 of the '579 patent, either literally or under the doctrine of equivalents.

Referring to independent claim 3 of the '579 patent, the administrative law judge found in Section V E3 supra that "descrambling a high speed shared control channel (HS-SCCH)" means "applying a scrambling sequence to process the scrambled data received on an HS-SCCH to reproduce (recover) the data scrambled prior to transmission." With respect to said limitation, respondents' expert Kakaes testified:

{

}

(Tr. at 1451:7-1452:14 (emphasis added).) Referring to RX-0105C and RDX1903, respondents' witness{

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(Tr. at 1174-1179 (emphasis added); RX-0105 and RDX1903.)

As the testimonies from Kakaes and Mawhinney show,{

}

{

{

}

{ }
{' }

(Gitlin, Tr. at 1130:3-1131:5.)

Based on the foregoing, the administrative law judge finds that complainants have not established, by a preponderance of the evidence, that the { } based handsets practice the limitation "descrambling a high speed shared control channel (HS-SCCH)" as recited in claim 3 and that complainants have not shown, by a preponderance of the evidence, that the { } based handsets infringe said claim, either literally or under the doctrine of equivalents. The administrative law judge further finds that complainants have not shown, by a preponderance of the evidence, that the { } based handsets infringe claim 4, either literally or under the doctrine of equivalents, due to its dependence on independent claim 3.

3. { }
{' }

With respect to claims 1, 3 and 4 of the '579 patent, complainants argued that the accused { } based handsets infringe said claims under complainants' proposed claim constructions literally or, alternatively, under the doctrine of equivalents. (CBr at 60.) According to complainants, { }
{' }

{ } Respondents argued that the { }

based handsets use { }

} (RBr at Sec. III, p. 5.) Respondents further argued that the

{ }

} Respondents also argued that Nokia's { }

}

The staff argued that the preponderance of the evidence does not demonstrate that the

{ } based handsets satisfy the "code used for scrambling a high speed shared control channel" limitation of claim 1. (SBr at 53.) It is argued that respondents' expert Kakaes personally considered the { }

}

The staff also argued that the preponderance of the evidence does not demonstrate that

the { } based handsets satisfy the "48 bit code for use in descrambling" limitation of

claim 3. (SBr at 55-56.) According to the staff, respondents' expert Kakaes credibly testified that

{

}

With respect to the claimed phrase "1/2 rate convolutional encoder" recited in asserted independent claims 1 and 3, the administrative law judge found in Section V E4 supra that the phrase "convolutional encoder" means "an encoder where the relationship between the output and the input can be described by the mathematical operation called convolution," and that the claimed phrase in issue means "a convolutional encoder that effectively doubles an input sequence of bits." For the accused{ } based handsets, it is undisputed that said handsets{ }

}

In addition, respondents' expert Kakaes testified:

{

}

{

}

(Tr. at 1443:6-22.) Hence, the administrative law judge finds that the{

}

Complainants argued that their expert Gitlin testified that respondents{

}

The administrative law judge however finds that the $\frac{1}{2}$ rate convolutional encoder of the preferred embodiment of the '579 patent does not{

} the '579 patent discloses that the

"16 bit UE ID . . . is input into a $\frac{1}{2}$ rate convolutional encoder 14 along with eight zero bits

appended onto the end of the input string," that "[a]fter being processed by the $\frac{1}{2}$ rate convolutional encoder 14, the output code is 48 bits in length," and that "to reduce the length of the code to a preferred length of 40 bits, eight bits are preferably punctured." (CX-5 at 2:49-55 (emphasis added).) By contrast, {

} (Tr. at 1083:6-7.) Moreover, as the following testimony of respondents' expert Kakaes shows:

{

}

(Tr. at 1385:3 -15 (emphasis added).) Hence, the administrative law judge finds that the {

} Thus the

administrative law judge finds that the{

} Thus, as respondents' expert Kakeas testified:

{

}

(Tr. at 1385 -1386 (emphasis added); RDX-1919C.)

Referring to said{

}

(CBr at 61-62.) Specifically, complainants cited to the following excerpts from the deposition testimony of respondents' witness Pirttiaho:

{

}

(JX-48C at 179, 199); The administrative law judge finds that the{

} (See CX-48 at 194-199.) The administrative law judge further finds that the

said testimony shows only that the {

}

{

{

} (JX-48C

at 86:14-96:6 and 189:21-198:22; Tr. at 1385:17 -1386:14.)

Based on the foregoing, the administrative law judge finds that the{

} The administrative law judge further finds that complainants have not shown, by preponderance of the evidence, that the{ } based handsets infringe claim 4, either literally or under the doctrine of equivalents, due to its dependence on independent claim 3.

G. Validity

The underlying law a validity is found in Section IV G supra.

Respondents argued that InterDigital does not dispute that each individual element of the asserted claims of the '579 patent is disclosed in the 3GPP Document No. R1-02-0463 entitled "Way Forward on HS-SCCH" (Motorola Way Forward Proposal; RX-59), 3GPP Document No. R1-02-0482 entitled "UE specific masking for HS-SCCH" (Siemens 482 Proposal; RX-60), and 3GPP Document No. R1-02-0610 entitled "Performance of the HS-SCCH" (Motorola 610 Proposal; RX-1214); that InterDigital cannot dispute that the exact combination of elements

recited in claims 1, 3 and 4 was known to those skilled in the art, except for the specific combination that uses the disclosed 1/2 rate convolutional encoder to process the 16 bit UE ID in addition to the 16-bit Part 1 information for which the ½ convolutional encoder was previously used; that the invalidity of the '579 patent therefore turns on a single question: would it have been obvious to one skilled in the art to substitute the disclosed 1/2 rate convolutional channel encoder for the Reed Muller channel encoder that was previously used in order to accommodate a 16 bit UE ID (as opposed to the previously used 10 bit UE ID); and that the answer to this question is undoubtedly yes. (RBr at Sec. III, p. 53.)

According to respondents, for a 16 bit input, one of ordinary skill in the art would have had every reason to at least to try the existing ½ rate convolutional encoder to produce a 40 bit scrambling sequence from the 16 bit UE ID because the existing ½ rate convolutional encoder (i) was "staring out one's face" from the front page of the Motorola Way Forward Solution, the Siemens 482 proposal, and the Motorola 610 proposal, (ii) would have allowed complete reuse of functionality already existing in the 3GPP standard, and (iii) would have been expected to function well because the separation (Hamming Distance) properties of the code output by a ½ rate convolutional encoder do not change based on the nature (as opposed to the length) of the input. (RBr at Sec. III, pp. 54-55.)

Complainants argued that respondents have not met their burden of demonstrating, by clear and convincing evidence, that any of claims 1, 3, and 4 of the '579 patent is invalid in view of the Way Forward Proposal (RX-59), the Siemens 482 Proposal (RX-60), and the Motorola 610 Proposal (RX-1214). (CBr at 116.) According to complainants, respondents' expert Kakaes acknowledged that an essential element, i.e., "a ½ rate convolutional encoder," in each asserted

claim is missing from the prior art but instead proposes that this missing element would be obvious allegedly because "the rate one-half convolutional encoder could be just replicated, if you will, reused in the scrambling sequence generation path [and] the problem would be solved." (CBr at 117.)

Complainants further argued that while the '579 patent may be concise and easy to understand in hindsight, it is important that its inventiveness is not overlooked in view of its simplicity; that there was an unresolved problem with HSDPA implementation prior to the '579 patent; that Interdigital one-half rate convolutional encoder solution corresponding to the '579 patent was immediately selected and incorporated into the 3GPP standard; that at the time of the '579 patent, there was a large number of encoders known in the art; that at the time of the '579 patent no accepted evaluation criteria for selecting HS-SCCH scrambling sequence generators; that secondary considerations shown nonobviousness of the '579 patent; and that during prosecution of a continuation of the '579 patent, the Examiner determined that its pending claims were sufficiently overlapping in scope with claims 1-10 in the '579 patent to warrant double-patenting rejections, which were overcome by a terminal disclaimer to the '579 patent, and that after considering Kakaes' October 17, 2007 invalidity expert report and each and every asserted reference in this Investigation, nevertheless determined that "the prior art of record fails to teach using a high speed shared control channel to combine user equipment identification data and $\frac{1}{2}$ rate convolutional encoding to produce a scrambled code." (CBr at 117-137.)

The staff argued that the evidence does not clearly and convincingly show that claims 1, 3, and 4 of the '579 patent is invalid as obvious; that to support a finding of obviousness over a combination of prior art references, respondents have the burden to show by clear and convincing

evidence that a person of ordinary skill in the art would have had both a reason to use a $\frac{1}{2}$ rate convolutional encoder in place of the 10, 32 block encoder to generate a scrambling sequence and a reasonable expectation that the $\frac{1}{2}$ rate convolutional encoder would work; that the evidence fails to demonstrate that a person of ordinary skill in the art would have a reason to use a $\frac{1}{2}$ rate convolutional encoder as a scrambling sequence generator at the time of the '579 invention; that none of the prior art references discloses or suggests the use of a convolutional encoder as a scrambling sequence generator; and that the evidence also does not clearly and convincingly demonstrate that a person of ordinary skill in the art at the time of the '579 invention would have had a reasonable expectation of success. (SBr at 62-63.)

It is undisputed that each of the references at issue with respect to validity, *viz.* the "Way Forward proposal", the "Siemens 482 Proposal", and the document entitled "Motorola 610", are prior art to the '579 patent. The parties however dispute the limitations of claims 1 and 3 that involve the 1/2 rate convolutional encoder. Claim 1 recites "a 1/2 rate convolutional encoder for processing at least the bits of the user identification by a 1/2 rate convolutional code to produce a code used for scrambling a high speed shared control channel." (CX-3 at 3:9-12.) The administrative law judge has found, in Section V E 2 supra, that "a code used for scrambling a high speed shared control channel (HS-SCCH)" means "a string of bits used to scramble unscrambled data prior to transmission of the data on a high speed shared control channel (HS-SCCH)." Claim 3 recites "a 1/2 rate convolutional encoder for processing the 16 bit user identification code with eight appended zero bits to produce a 48 bit code for use in descrambling a high speed shared control channel (HS-SCCH)." (CX-3 at 3:20-24.)

The Motorola Way Forward Proposal was presented at the 3GPP Radio Access Networks

Working Group No. 1 (RAN WG1) Meeting No. 24. (RX-59 at 1.) It is undisputed that complainants' expert Gitlin testified that said reference (RX-59) does not disclose any means of scrambling sequence generation and instead discloses that the method for generating the UE-ID based scrambling sequence is to be determined. (CFF 4.10 and 4.16 (both undisputed); see also RX-59 at 1 ("The post convolutionally encoded Part-1 is scrambled by the UE ID as shown in Figure 2. The type of scrambler is TBD.") (emphasis added).) It is also undisputed that respondents' expert Kakaes admits that in spite of "staring them in the face," Motorola in said reference did not propose using a half-rate convolutional encoder to generate the scrambling sequence. (CFF 4.6 (undisputed).)

The Way Forward proposal (RX-59) "outlines a way forward on designing an HS-SCCH." (RX-59 at 1.) Said proposal discloses that data is subjected to "R=1/2 Convolutional Coding," followed by "Rate Matching." (RX-59 at Fig. 1.) The output of the "R=1/2 Convolutional Coder + Rate Matcher" is then "scrambled by the UE ID...." (RX-59 at 1, Fig. 2.) Thus, the 1/2 rate convolutional encoder disclosed in the Way Forward proposal is used to encode data prior to applying a UE ID specific scrambling sequence. (RX-59 at 1.)

The Siemens 482 Proposal was also presented at the 3GPP RAN WG1 Meeting No. 24. (RX-60 at 1.) It is undisputed that complainants' expert Gitlin testified that said reference (RX-60) does not disclose use of a half-rate convolutional code as a scrambling sequence generator and that respondents' expert Kakaes admits Siemens in said reference did not propose using a half-rate convolutional encoder to generate a scrambling sequence. (CFF 4.7 and 4.11 (both undisputed).) Instead, the administrative law judge finds that said reference discloses a (32, 10) Reed-Muller block encoder that converts a 10 bit UE ID into a 32 bit output. (RX-60 at

1; Tr. at 1868.) It is undisputed that the (32, 10) Reed-Muller block encoder was already defined in the 3GPP standard for accepting a 10 bit input value and producing a 32 bit output value. (CFF 4.45 (undisputed).) In order to generate a 40 bit UE ID based scrambling sequence, the Siemens 482 Proposal discloses repeating the first eight bits of the 32 bit output from the Reed-Muller block encoder and appending those repeated bits to said output. (CFF 4.20 and 4.47 (both undisputed).) Said proposal notes that “[t]he ‘way forward’ document leaves [the scrambling] function TBD [to be determined].” (RX-60 at 1.)

The Motorola 610 Proposal was also presented at the 3GPP RAN WG1 Meeting No. 24. (RX1214 at 1.) Again, it is undisputed that complainants' expert Gitlin testified that said reference (RX-1214) does not disclose use of a half-rate convolutional encoder as a scrambling sequence generator and that respondents' expert Kakaes admits that Motorola in said reference did not propose using a half-rate convolutional encoder to generate a UE ID-specific scrambling sequence. (CFF 4.8 and 4.12 (both undisputed).) Instead, the administrative law judge finds that said reference also discloses a (32, 10) Reed-Muller block encoder that converts a 10 bit UE ID into a 32 bit output. (RX-1214 at 1; Tr. at 1868:22-1869:8.) Similar to the Siemens 482 Proposal, the Motorola 610 Proposal discloses repeating the first eight bits of the 32 bit output and appending those repeated bits to the output in order to generate a 40 bit UE ID based scrambling sequence. (CFF 4.24 (undisputed).)

The administrative law judge finds that at the next RAN WG1 Meeting, Meeting No. 25, certain RAN WG1 members pointed out that other 3GPP working groups used a 16 bit identified rather than a 10 bit UE ID in their standard specifications, and a discussion took place on the issue in general. (RX-62 at 9; Tr. at 1341:1-4.) The administrative law judge further finds that in

the following RAN WG1 Meeting No. 26, representatives from several companies, including Interdigital, proposed solutions for generating a user specific scrambling sequence using a 16 bit UE ID. (CX-255 at 9-10; Tr. at 774-788.) It is undisputed that InterDigital was the only company at that time, among the large number of attendees, to propose a solution that generates the user specific scrambling sequence using a one-half rate convolutional encoder, as recited in claims 1, 3, and 4 of the '579 patent. (CFF 4.57 and 4.113 (both undisputed).) Moreover, testimony of complainants' expert Gitlin shows that at the time of invention of the '579 patent, there were a number of different families of available encoders known in the art; that within each of these families there are a large number of parametric variations so that the set of possible encoders even larger; that performance as a channel encoder is not an indicator of performance as a scrambling sequence generator; and that work must be done in comparing the performance of two candidate scrambling sequence generators. (Tr. 1867-1869; 1902-1903.)

Respondents argued that the use of a $\frac{1}{2}$ convolutional encoder was the most obvious option for generating a scrambling sequence from a 16 bit. (RBr at Sec. III, pp. 54-56.) The claimed invention however uses a $\frac{1}{2}$ rate convolutional encoder to generate a scrambling sequence from a 16-bit user identification. The cited references disclose only the use of a block code to generate a scrambling sequence from a 10-bit user identification. Moreover on February 13, 2004, complainants filed a continuation patent, application no. 10/779,431 (the '431 application) (CX-25), which claims priority from the '579 patent. Id., and which issued as U.S. Patent No. 7,349,540. (CX-26.) The '431 application shares a common specification with the '579 patent. Id. The Examiner in charge of said continuation application determined that its pending claims were sufficiently overlapping in scope with claims 1-10 in the '579 patent as to

warrant double patenting rejections under 35 U.S.C. §101. (CX-0025 at IDC-ITC-010495644 45 ("claiming the same invention as that of claims 1-10 of prior U.S. Patent No. 6,973,579")) To obviate these double patenting rejections, InterDigital filed a terminal disclaimer to the '579 patent. (CX-25, at IDC-ITC-010495633.) In the next Office Action, the Examiner allowed all of the pending claims in the continuation application. (CX-25, at IDC-ITC-010495597-602.)

Significantly, the Examiner in charge of the continuation application considered Kakaes's October 17, 2007, invalidity expert report, as well as each and every one of the references that Nokia asserts in this investigation and still determined that the prior art of record fails to teach using a high speed shared control channel to combine user equipment identification data and $\frac{1}{2}$ rate convolutional encoding to produce a scrambled code. (CX-0025 at IDC-ITC-010495601.) In other words the Examiner having considered the prior art, including said asserted references, stated in the "examiner's statement of reasons for allowance" of the '540 patent application that "the prior art of record fails to teach using a high speed shared control channel to combine user equipment identification data and $\frac{1}{2}$ rate convolutional encoding to produce a scrambled code." (CX-25 at IDC-ITC-010495601 (emphasis added).) Although these asserted references were not cited during prosecution of the '579 patent application (Tr. at 852:21-853:15; 854:3-11; CX-5 at 1), the administrative law judge finds that the Examiner in the '540 patent application determined that the pending claims of the '540 patent application were sufficiently overlapping in scope with claims 1-10 in the '579 patent as to warrant double patenting rejections under 35 U.S.C. § 101, in response to which a terminal disclaimer was filed for the '579 patent. (CX-25 at IDC-ITC-010495633 and IDC-ITC-010495645.)

Based on the foregoing, the administrative law judge finds that respondents have not

shown, by clear and convincing evidence, that the "½ rate convolutional encoder" limitation of asserted claims 1, 3 and 4 would have been obvious to persons skilled in the art and that respondents have not shown, by clear and convincing evidence, that said claims are invalid over the asserted references, alone or in combination.

H. Enforceability

Respondents argued that while the alleged invention of the '579 patent directly flowed from InterDigital's participation in the 3GPP WGI meetings, and the purported invention was merely a trivial update on someone else's idea; that InterDigital failed to cite a single prior art publication from 3GPP leading up to the alleged invention of the 579 patent, even though all three inventors were unquestionably aware of that art; and that such intentional withholding of "material" prior art renders the 579 patent unenforceable. (RBr at Sec. III, pp. 68-69.)

Specifically, respondents argued that the materials not disclosed by InterDigital during prosecution of the '579 patent are the Motorola Way Forward Proposal (RX-59), the Siemens 482 Proposal (RX-60), the 3GPP TS 25.212 v5.0.0 standard (RX-38), the Motorola 610 Proposal (RX-1214), and TR 25.858 (RX-1211); that the European Patent Office in two different application rejected claims that were identical and substantially similar to the '579 patent on the Motorola 610 Proposal; that the Japanese Patent Office rejected another foreign counterpart to the '579 patent based on 3GPP WG1 prior art documents; that the 3GPP prior art documents are not cumulative because the only reference cited by the Examiner during prosecution of the '579 patent application were two patents to Moon which did not disclose the arrangement of the '579 patent; that all three InterDigital inventors were aware of the 3GPP prior art documents because they regularly attended the 3GPP WG1 meetings were the said prior art was discussed; and that

the most telling evidence of InterDigital's intent is the material that it disclosed in its provisional applications but later removed from the utility application that led to the '579 patent. (RBr at Sec. III, pp. 69-76.)

Complainants argued that respondents' inequitable conduct defense fails for at least three reasons; that first, none of the asserted references are material because they do not teach or suggest the use of a $\frac{1}{2}$ rate convolutional encoder for generating a scrambling sequence; that second, the asserted references are cumulative to the admitted prior art before the Examiner of the '579 patent application because they disclose earlier implementations of the HS-SCCH that are described in the '579 patent; and that third, there is no intent to deceive because there is no evidence that any of the inventors or the prosecuting attorney considered these references to be material. (CBr at 168.)

The staff argued that no evidence was presented at the hearing that clearly and convincingly showed that there was any intent to mislead or deceive the Patent Office and that accordingly the evidence did not clearly and convincingly show that the '579 patent is unenforceable due to inequitable conduct. (SBr at 68-9.)

Failing to disclose material information to the Patent Office during prosecution, or submitting false material information or statements, coupled with an intent to mislead or deceive the Patent Office, constitutes inequitable conduct, which renders a patent unenforceable. See Flex-Rest, LLC v. Steelcase, Inc., 455 F.3d 1351, 1362 (Fed. Cir. 2006). "Materiality" and "intent" must both be proven by clear and convincing evidence. See Kingsdown Med. Consultants, Ltd. v. Hollister, Inc., 863 F.2d 867, 872 (Fed. Cir. 1988) (en banc). "Once threshold findings of materiality and intent are established, the trial court must weigh them to

determine whether the equities warrant a conclusion that inequitable conduct occurred.” Flex-Rest, 455 F.3d at 1363 (quoting Purdue Pharma L.P. v. Endo Pharma. Inc., 438 F.3d 1123, 1128 (Fed. Cir. 2006)).

Respondents, in support of their allegation, argued that while each of the Way Forward Solutions, Siemens 482 Proposal, Motorola 610 Proposal, 3GPP TS 25.212 v5.0.0, and TR 25.858 v.2.0.0 were never disclosed to the USPTO in the ‘579 patent application (RRSPFFVI.1A), each of those disclose the use of a $\frac{1}{2}$ rate convolution encoder in the data path of HS-SCCH scrambling (RRSPFF VI.1B); that at the evidentiary hearing respondents’ expert Kakaes testified that the Way Forward Solution, the Siemens 482 Proposal, and the Motorola 610 Proposal each rendered the claims of the ‘579 patent obvious (RRSOFFVI.1D); and that one or more of the inventors were aware of each of the Way Forward Solution, Siemens 482 Proposal, Motorola 610 Proposal, 3GPP TS 25.212 v5.0.0, and TR 25.858 v.2.0.0 (RRSPFF VI.H.)

While complainants admit that $\frac{1}{2}$ rate convolutional encoders were known in the art as stated in the ‘579 patent (CBr at 168) and respondents’ expert Kakaes admitted that a half-rate convolutional encoder would have been something a person of ordinary skill in the art would have been familiar with in early 2002, it is undisputed that the Motorola “Way Forward” R1-02-0463, Siemens RA-02-0482, Motorola R1-02-0610, and TS 25.212 v5.0.0 references all disclose the use of a $\frac{1}{2}$ rate convolutional encoder in the HS-SCCH for the traditional purpose of encoding. (CFF 5.26 (undisputed) (emphasis added).) Moreover it is also undisputed that the specification of the ‘579 patent specifically states that because $\frac{1}{2}$ rate convolutional encoder are already used in existing 3GPP WCDMS systems, no additional hardware is required. (CFF 5.81 (undisputed).) It is further undisputed that the ‘579 patent discloses that high speed shared

control channels are used in HSDPA; that the '579 patent discloses that a UE identification specific scrambling sequence is used in the high speed shared control channels; that the '579 patent discloses that a 10 bit UE ID had been used as the basis for the UE ID specific scrambling sequence; that the '579 patent discloses that it was proposed to extend the length of the UE ID to 16 bits; that the '579 patent discloses that $\frac{1}{2}$ convolutional encoders were being used in current 3GPP WCDMA systems for forward error correction; and that the '579 patent discloses that because $\frac{1}{2}$ rate convolutional encoders were being used in current 3GPP WCDMA systems for forward error correction, no additional hardware is required to generate the convolutionally encoded UE ID specific scrambling sequence. (CFF 5.61-64, 5.66-67 (all undisputed).) The administrative law judge finds the admitted prior art in the '579 patent, supra is cumulative to the references relied on by respondents. Significantly, he finds nothing in the references relied on by respondents to teach or suggest using a $\frac{1}{2}$ rate convolutional encoder to generate the scrambling sequence as claimed in the '579 patent. Thus with respect to the asserted Motorola Way Forward Proposal (RX-59), it is undisputed that complainants' expert Gitlin testified that said reference does not disclose any means of generating said scrambling sequence and instead discloses that the actual method for generating the UE-ID based scrambling sequence is to be determined. (CFF 4.10 and 4.16 (both undisputed).) The administrative law judge finds that said reference merely discloses using a scrambling sequence based on a UE ID (RX-59 at 1; Tr. at 800:18-801:2.) The administrative law judge also finds that said reference is cumulative because it is undisputed that the '579 patent itself already discloses in its background section that a UE identification specific scrambling sequence is used in the high speed shared control channels. (CFF 5.62 (undisputed).)

Referring to the asserted Siemens 482 Proposal (RX-60), it is undisputed that

complainants' expert Gitlin testified that said reference does not disclose use of a half-rate convolutional code as a scrambling sequence generator and that respondents' expert Kakaes admits that Siemens in said reference did not propose using a half-rate convolutional encoder to generate a scrambling sequence. (CFF 4.7 and 4.11 (both undisputed).) Similarly, with respect to the Motorola 610 Proposal (RX-1214), it is undisputed that complainants' expert Gitlin testified that said reference does not disclose use of a half-rate convolutional encoder as a scrambling sequence generator and that respondents' expert Kakaes admits that Motorola in said reference did not propose using a half-rate convolutional encoder to generate a UE ID-specific scrambling sequence. (CFF 4.8 and 4.12 (both undisputed).) As discussed supra, both the Siemens 482 Proposal and the Motorola 610 Proposal discloses a (32, 10) Reed-Muller block encoder that converts a 10 bit UE ID into a 32 bit output. (RX-60 at 1; Tr. at 1868:10-21; RX-1214 at 1; Tr. at 1868:22-1869:8.) The administrative law judge finds that the background section of the '579 patent already discloses the use of a Reed-Muller block encoder to generate a 40 bit scrambling sequence from a 10 bit UE ID for the high-speed shared control channel. (CX-5 at 1:42-49; Tr. 796:8-797:16.)

With respect to the 3GPP TS 25.212 v5.0.0 standard (RX-38), it is undisputed that said standard incorporates the Siemens 482 Proposal. (CFF 5.12 (undisputed).)

Referring to TR 25.858 (RX-1211), the administrative law judge finds that said reference

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} The administrative law judge further finds that the background section of the '579 patent already discloses that "[u]ntil recently, a 10 bit UE ID was

used as the basis for the UE ID specific scrambling sequence" and that "[i]n this case, this UE ID was converted into a 40 bit scrambling sequence." (CX-5 at 1:41-43.)

In addition, the administrative law judge found *supra* that during prosecution of U.S. Patent No. 7,349,540 (CX-26), a continuation of the '579 patent, the Examiner in charge indicated that he had considered each of the Motorola Way Forward Proposal, the Siemens 482 Proposal, and the Motorola 610 Proposal, and thereafter stated in the "examiner's statement of reasons for allowance" of the '540 patent application that "the prior art of record fails to teach using a high speed shared control channel to combine user equipment identification data and ½ rate convolutional encoding to produce a scrambled code." (CX-25 at IDC-ITC-010495665 (Motorola 610 Proposal); CX-25 at DC-ITC010495567 (Motorola Way Forward Proposal and Siemens 482 Proposal); CX-25 at IDC-ITC-010495601.)

Based on the foregoing, the administrative law judge finds that the references asserted by respondents are not material to the '579 patent and are cumulative to the description of the state of the art already disclosed by the background section of the '579 patent.

The administrative law judge further finds that respondents have not established any intent to deceive the Patent Office by the inventors on the '579 patent or the prosecuting attorney of the '579 patent. {

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(JX-24C at 97-980.) {

} Inventor Dick when asked about the 3GPP Working Group documents testified, “[i]t was background information. That’s all it was.” (Tr. at 797.)

Based on the foregoing, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that the ‘579 patent is unenforceable.

VI. Waiver And Patent Misuse

Nokia argued that the evidence establishes that InterDigital not only deliberately shaped its patenting process to read on industry standards, but also intentionally delayed its filing of essentiality declarations to ensure that the industry became “locked in” to standards it alleged read on its Intellectual Property Rights (IPR), so that it could force those practicing the standards to take a license to its patents; and that this intentional and deceptive conduct renders the asserted patents unenforceable against Nokia’s UMTS products under the related equitable doctrines of patent misuse and/or waiver. (RBr at Sec. IV, p. 10.)

Each of complainants and the staff has argued that respondents have not established the defense of patent misuse and/or waiver.

Respondents, in support of their waiver and patent misuse allegation, argued that based on InterDigital’s failure to timely disclose IPR as required by the European Telecommunication Standards Institute (ETSI), as well as InterDigital’s efforts to conceal this IPR and others from other ETSI members, InterDigital has waived its ability to enforce the ‘579 patent against

HSDPA²⁶ compliant products, citing Qualcomm, Inc. v. Broadcom Corp., 548 F.3d 1004, 1022 (Fed. Cir. 2008). (RBr at Sec. IV, p. 15.)

Complainants argued that respondents first presented this “hybrid defense” of misuse/waiver a few days before the start of the evidentiary hearing under the guise of a “corrected” prehearing statement; that this was not a “correction,” but rather was an assertion of a new defense theory; and that pursuant to ground rule 9(iv), this new defense theory was waived. InterDigital nonetheless did address this “frivolous defense” on the merits, and argued that respondents mischaracterize the law in an attempt to excuse their complete lack of proofs and further have failed to present any credible evidence to support their defense. (CRBr at 95-9.)

The staff noted that Nokia filed a revised Pre-hearing Brief on May 15, 2009, which was after the staff had filed its pre-hearing brief and was a mere five business days before the start of the evidentiary hearing, that Nokia’s May 15 brief contained substantial revisions to Nokia’s theory of patent misuse, which revisions were provided too late and that accordingly, pursuant to ground rule 9(vi), Nokia’s revised theory of patent misuse should be deemed waived. Thus the staff in its SBr only treated Nokia’s theory of patent misuse as set forth in Nokia’s April 13, 2009, pre-hearing brief and argued that the evidence does not support a finding of patent misuse. (SBr at 70-1.)

In issue is whether respondents’ May 15, 2009 pre-hearing brief contained substantial revisions and/a new defense theory, as argued by complainants and the staff, and if so whether respondents’ “revised theory of patent misuse should be deemed waived pursuant to ground rule 9 (vi).

²⁶ “HSDPA” stands for – High Speed Downlink Packet Access - - . See RBr at Sec. III, p. 2 and RFF III – 94.

As a preliminary matter, the administrative law judge finds the “Table Of Authorities” in Nokia’s May 15, 2009 brief confusing. For example In re Rambus Inc., Docket No. 9302, 2006 WL 233017 (F.T.C. Aug. 2, 2006) (Rambus) is indicated to be on “IV-27”. The same is indicated for Stambler v. Diebold, Inc., 11 U.S.P.Q.2d 1709 C.E.D.N.Y 1988) and Potter Instrument Co. v. Storage Techn. Corp. 207 U.S.P.Q. 763 (E.D. Va. 1980). However those three cases are not found on “IV-27” of the May 15, 2009 brief. To the contrary while they are not cited and thus not relied upon, in section VI B of respondents’ May 15, 2009 pre-hearing brief which is titled “Other Unenforceability Defenses”, they are relied upon in respondents’ April 13, 2009 pre-hearing brief.

The administrative law judge, on comparing respondents’ pre-hearing brief of May 15, 2009 with respondents’ prehearing brief of April 13, 2009 further finds that said May 15 brief does contain substantial revisions including a new defense theory. Thus in addition to not relying on Rambus, respondents in the introductory paragraph of said section IV.B of the May 15 pre-hearing brief relies on Qualcomm Inc. v. Broadcom Corp. 548 F.3d 1004, 1021 (Fed. Cir. 2008) (not cited in the April 13, 2009 pre-hearing brief) stating:

The evidence at the hearing will show that InterDigital not only deliberately shaped its patenting process to read on industry standards such as the UMTS standard at issue here, but also intentionally delayed its filing of essentiality declarations to ensure that the industry became “locked in” to standards it alleged read on its patents, so that it could force those practicing the standards to take a license to its patents. When a company is obligated to disclose its intellectual-property claims to a standard-setting body, but intentionally fails to do so, it constitutes actionable deceptive conduct. See, e.g. Qualcomm, Inc. v. Broadcom Corp., 548 F.3d 1004, 1021 (Fed. Cir. 2008) [Qualcomm] (holding that the intentional concealment in face of a duty to speak, of IPR that reasonably might be necessary to practice a particular standard, renders that IPR unenforceable against those practicing the standard); Broadcom Corp. v. Qualcomm, Inc., 501 F.3d 297, 314 (3d Cir. 2007). Under these circumstances, the asserted patents are unenforceable under the related equitable doctrines of

patent misuse and/or waiver.

In view of the substantial revisions including a new defense theory in respondents' May 15, 2009 pre-hearing brief, the administrative law judge finds that respondents' revised theory of patent misuse has been waived pursuant to ground rule 9(vi). However, should the Commission find that there has been no waiver, the administrative law judge is treating the arguments addressed in respondents' pre-hearing brief of May 15, 2009 and their post-hearing submissions.

Respondents argued that the Federal Circuit in Qualcomm found that Qualcomm waived its ability to enforce its patents against Broadcom and other entities implementing the H.264 standard because Qualcomm failed to disclose the existence of the patents prior to the adoption of the standard, citing Id. at 1022; that the Court noted that because Qualcomm's infringement contentions were based on Broadcom's practice of the H.264 standard, the patents clearly fell within the "reasonably might be necessary to practice" standard, and thus, should have been disclosed, citing. Id. at 1018- 19; that further, the Court determined that applying the equitable doctrine of waiver was appropriate because Qualcomm intentionally organized a plan of action to shield its patents from the standards body, citing Id. at 1020-21; that finally, in response to Qualcomm's argument that Broadcom was not harmed by the nondisclosure because Qualcomm was willing to license its patents, the Court stated that:

Even if Qualcomm agreed not to pursue an injunction in this case, injunctions are not the only type of harm. Forcing a party to accept a license and pay whatever fee the licensor demands, or to undergo the uncertainty and cost of litigation (which in this case was substantial), are significant burdens.

citing Id. at 1021; and that based on these facts, the Federal Circuit in Qualcomm held that Qualcomm's patents were unenforceable against H.264 compliant products. (RBr IV-11.)

It is argued that InterDigital cannot dispute that it should have disclosed timely the 579 invention to ETSI members; that the fact that InterDigital originally based its claim for infringement on Nokia's handsets being compliant with the 3GPP TS 25.212 (HSDPA) standard (RFF IV-137 (undisputed)), coupled with InterDigital's eventual declaration of the '579 invention as essential in 2004 establish that InterDigital breached a duty to disclose, citing Qualcomm, 548 F.3d at 1018-19. (RBr at Sec. IV, p. 13.) It is also argued that InterDigital's impermissible expansion of the scope of the power ramp-up patents, their failure to timely disclose them to ETSI, and their efforts to seek an injunction based thereon is contrary to public policy and constitutes patent misuse and for that reason, the power ramp-up patents are unenforceable. (RBr at Sec. IV, p. 16.)

At the outset while respondents argued that InterDigital declared U.S. Appl. No. 10,487,640 which later issued as the '579 patent essential to ETSI on April 8, 2004 (EX-625C at IDC-ITC-000069537) (RFF VI-153),{ }

Moreover in Qualcomm, the standards body at issue (JVT) had a defined IPR policy that required its members to use best efforts to declare all relevant patents at the time a proposal was submitted. Qualcomm, 548 F.3d at 1014. JVT had a further policy requiring disclosure of all patents relevant to the standard before final approval of the standard. Id. at 1015. The Federal Circuit in addition emphasized that JVT had a stated goal of creating a royalty-free baseline for the standard, which was the critical factor in determining the importance of JBT's members' obligation to disclose patents when making contributions, Id. at 1013-14. Also Qualcomm involved a knowing a non-disclosure of patents to the standards body and a knowing non-

disclosure of the membership in the standards body during litigation that resulted in sanctions against Qualcomm's attorneys. *Id.* at 1009-10, 1022, 1027.

In the present investigation the administrative law judge finds that respondents have not established that Inter Digital knowingly and intentionally relinquished any rights because, unlike Qualcomm, InterDigital declared their patents to ETSI. Thus InterDigital disclosed U.S. Patent Application No. 10/187,640, which was filed on July 1, 2002 and which issued as the '579 patent to ETSI on April 8, 2004 and declared that it was prepared to comply with the ETSI policies concerning FRAND licensing. (CX5, RX0248-043.) (CFF 7.52 (undisputed).) InterDigital disclosed the '004 patent, which was filed on June 14, 2004, to ETSI on March 21, 2008 and declared that it was prepared to comply with the ETSI policies concerning FRAND licensing. (CX1, CX585C at IDC-ITC008437378.) InterDigital disclosed the '966 patent, which was filed on June 29, 2005, to ETSI on March 21, 2007 and declared that it was prepared to comply with the ETSI policies concerning FRAND licensing (CX2, CX585C at IDC-ITC008437378.) InterDigital disclosed U.S. Patent Application No. 11/169,425, which was filed on June 29, 2005, and which issued as the '847 patent to ETSI on March 21, 2007 and declared that it was prepared to comply with the ETSI policies concerning FRAND licensing. (CX3, CX585C at IDC-ITC008437378.) The '004, '966 and '847 patents all claim priority back to U.S. Patent Nos. 6,181,949 and 5,841,768. InterDigital disclosed U.S. Patent Nos. 6,181,949 and 5,841,768 to ETSI on April 10, 2001. (RX0353-006.) In addition the administrative law judge in Section IV H supra has found no prosecution laches relating to the power ramp-up patents.

Also the administrative law judge agrees with complainants that even if Qualcomm were applicable respondents have not established, by clear and convincing evidence: (1) that ETSI's

IPR policy requires the disclosure of essential patents at the time a proposal is made or at least, before the standard is finalized; (2) that InterDigital understood when InterDigital was making proposals that ETSI's IPR policy required disclosure of InterDigital's patents at that time; and (3) that InterDigital intentionally breached ETSI's policy. See Qualcomm at 1022, 1026. See also Qualcomm Inc. v. Broadcom Corp., 05-CV-1958-B, 2007 WL 1031373, at *9 (S.D. Cal. Mar. 21, 2007) and Jazz Photo Corp. v. Int'l Trade Comm'n, 264 F.3d 1094, 1102 (Fed. Cir. 2004).

Based on the foregoing, the administrative law judge finds that complainants have not waived their ability to enforce the '579 patent against HSDPA compliant products.

VII. Domestic Industry

The domestic industry requirement has been satisfied based on complainants' licensing activities, see Order No. 43 (March 10, 200) (unreviewed).

VIII. Remedy

Complainants argued that the evidence demonstrates that the appropriate remedies include a limited exclusion order prohibiting the importation of: (1) all of Nokia's infringing 3G mobile handsets; and (2) all components of Nokia's infringing 3G mobile handsets; and that the appropriate remedy should also include a cease-and-desist order directed to Nokia. It is argued that a limited exclusion order directed to Nokia's infringing 3G mobile handsets is necessary to prevent continued importation of those products into the United States which remedy is provided for under 19 U.S.C. § 1337(d); that there is no controversy that such a limited exclusion order is appropriate if Nokia has violated Section 337; that a limited exclusion order should be directed to the components of Nokia's infringing handsets in order to avoid Nokia circumventing the exclusion order by importing the infringing products "in parts" and reassembling them after entry

in the United States; that entry of a cease-and-desist order against Nokia is appropriate in the event the Commission finds a violation of Section 337; that a cease-and-desist order is appropriate where the evidence demonstrates the presence of commercially significant inventory in the United States, citing Certain Crystalline Cefadroxil Monohydrate, Inv. No. 337-TA-293, Commission Opinion on Remedy, the Public Interest and Bonding at 37-42, USITC Pub. 2391 (June 1991); and that the evidence demonstrates that Nokia's own flagship stores in Chicago and New York, or its carrier partners and distributors, AT&T Wireless and T-Mobile, maintain commercially significant inventory of infringing devices in the United States. (CBr at 195-6.)

Respondents argued that because Nokia's accused products do not infringe the claims of InterDigital's asserted patents, no remedy should issue; that in the event infringement of valid patents were to be found, the Commission would have broad discretion to select the form, scope and extent of the remedy, citing Hyundai Elecs. Indus. Co. v. U. S. Int'l Trade Comm'n, 899 F.2d 1204, 1208-09 (Fed. Cir. 1990); that although the Commission determines final relief after considering the public interest, it is within the Commission's discretion to deny relief, irrespective of the public interest, when the facts so dictate, citing Certain Condensers, Parts Thereof and Products Containing Same, Including Air Conditioners for Automobiles, Inv. No. 337-TA-334, Recommended Determination (Dec.1996); that the facts dictate that result here; that a cease and desist order is only appropriate where a complainant can establish the existence of commercially significant inventories of post-importation accused products, citing Certain Electronic Programmable Read-only Memories, Inv. No. 337-TA-395, Comm'n Op. (July 9, 1998) and Certain Lens-Fitted Film Packages, Inv. No. 337-TA-406, Consolidated Enforcement Advisory Opinion Proceedings, Comm'n Op. (June 23,2003); that InterDigital has not shown that

Nokia maintains a commercially significant inventory of the accused handsets in the United States; and that accordingly, "such orders" are not appropriate in this investigation. (RBr at Sec. V, p. 1, Sec. V, p. 2.)

In a subsequent filing respondents, as to any cease and desist order, argued that at most, InterDigital has alleged that certain third parties such as AT&T Wireless and T-Mobile maintain inventories of Nokia's handsets; that although InterDigital has not provided any documents or facts to substantiate this allegation, even if it had, such inventories would have no bearing on whether a cease and desist order is appropriate, citing, e.g., Certain Light-Emitting Diodes and Products Containing Same, Inv. No. 337-TA-512, Comm'n Det. at 8 (Apr. 14, 2008) (Diodes) and that accordingly a cease and desist order is not appropriate in this investigation. (RRBr at 98-9.)

The staff, inasmuch as it does not believe that the preponderance of the evidence demonstrated that any asserted claim is infringed, does not believe that any exclusion order or cease and desist order should be awarded to InterDigital. However if a violation is found, then the staff believes that a limited exclusion order against the respondents found to infringe would be the appropriate recommendation. To the extent any of the respondents who are found to be in violation maintain in the United States a commercially significant inventory of infringing products, the staff argued that a cease and desist order also would be an appropriate recommendation. (SBr at 71-2.)

The Commission "has broad discretion in selecting the form, scope, and extent of the remedy in Section 337 proceedings." Certain Integrated Circuit Telecommunication Chips, Inv. No. 337-TA-337, (Comm'n Op.) at 21 (August 3, 1993). Pursuant to its statutory authority

found at 19 U.S.C. § 1337 (d), the Commission may exclude from importation goods and products that form the basis for a finding of a violation of Section 337 which includes products that have been found to infringe the patents-in-issue directly, contributorily or by inducement after importation has occurred. Certain Flash Memory Circuits, Inv. No. 337-TA-382, (Comm'n Opn.) at 26 (June 26, 1997) ("The Commission has the authority to enter an exclusion order, a cease and desist order, or both."). Indeed, absent special circumstances, the statute requires such exclusion:

If the Commission determines . . . that there is a violation of this section, it shall direct that the articles concerned . . . be excluded from entry into the United States, unless, after considering 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, it finds that such articles should not be excluded from entry.

19 U.S.C. § 1337(d) (emphasis added). Hence, a remedy excluding Samsung's infringing products from entry is mandatory if a violation of section 337 is found, unless the Commission finds that public interest factors militate against such remedy.

In addition, the scope of an investigation is defined by the notice of investigation. Certain Chemiluminescent Compositions, Inv. No. 337-TA-285, Commission Order (Jan. 13, 1989) (scope of investigation is defined by the notice of investigation). Thus any exclusion order may cover all products within that scope, i.e., "the articles concerned." 19 U.S.C. § 1337(d)(1). Moreover, Commission remedial orders have covered all products that infringe and are not limited to specified models or products. Certain Optical Disk Controller Chips and Chipsets and Products Containing Same, Including DVD Players and PC Optical Storage Devices, Inv. No. 337-TA-506, Commission Opinion at 56 (August 7, 2006) (public version)).

The Commission also has the authority to issue cease and desist orders where a respondent has a sufficient inventory of infringing goods in the United States,” Certain NAND Flash Memory Circuits, Inv. No. 337-TA-526, Initial Determ. at 255 (Oct. 19, 2005) (citing Certain Plastic Encapsulated Integrated Circuits, Inv. No. 337-TA-315, U.S.I.T.C. Pub. No. 2574, Comm’n Op. at 37 (November 1992).); Certain Crystalline Cefadroxil Monohydrate, Inv. No. 337-TA-293, Comm. Op. at 6 (Jan. 19, 1990).

In the event a violation is found, the administrative law judge recommends the issuance of a limited exclusion order prohibiting the importation into the United States of infringing articles, regardless of brand name, “that are manufactured abroad or imported by or on behalf of [the respondents], or any of their affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns.” See Certain Laser Bar Code Scanners and Scan Engines, Components Thereof, and Products Containing Same, Inv. No. 337-TA-551, Limited Exclusion Order, ¶ 1 (May 30, 2007). Moreover, he recommends that said order should not be limited to specifically-identified products, but rather extend to all infringing products. See e.g., Certain Integrated Repeaters, Switches, Transceivers and Products Containing Same, Inv. No. 337-TA-435, Commission Opinion at 23, USITC Pub. 3547 (Oct. 2002).

With respect to issuance of any cease and desist order, the Commission in Diodes Comm’n Det, at 8 supra did state:

we have declined to issue a cease and desist order because, although qsram points to evidence suggesting that there are commercially significant domestic inventories of infringing Dominant LEDs, see e.g., CX-133%, CX-1337, CX-1338C, we agree with the ALJ that Osram has not shown that Dominant maintains those inventories. Instead, it is clear that the inventories identified by Osram are owned by third parties.

However complainants' CFF 146 reads:

Respondents Nokia Corporation and Nokia Inc. have manufactured abroad, imported into the United States, and sold in the United States after importation N-75, N-95, 6555, 6750, and 6350 handsets. (SX-2C; see Nokia's Flagship Stores in New York and Chicago, <http://www.nokiausa.com/visitastore/fagshipstores>; Nokia's products available for sale online, <http://www.nokiausa.com/buy-onlinel> Nokia's products available for sale in the United States, <http://www.nokiausa.com/find-products>; Nokia's products available for sale through its carrier partner AT&T, <http://www.wireless.att.com/cell-phone-service/cell-phones/nokia.jsp>; Nokia's products available for sale through its carrier partner T-Mobile, <http://www-t-mobile.com/shop/phones.>)

Nokia has objected to said proposed finding on the ground that it improperly cites to evidence not admitted into record. However, the administrative law judge has taken notice of the websites for Nokia's Flagship Stores in New York and Chicago. Based on those websites, the administrative law judge recommends appropriate cease and desist orders should a violation be found.

IX. Bond

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} Accordingly, the imposition of a bond in this investigation is not recommended.

X. Additional Findings of Fact

1. Complainant InterDigital Communications, LLC is a Pennsylvania limited liability company with its principal place of business at 781 Third Avenue, King of Prussia, Pennsylvania 19406-1409. (CX-142 at ¶ 6.)
2. InterDigital Communications, LLC was previously known as InterDigital Communications Corporation, but in connection with an internal corporate reorganization, effective July 3, 2007, InterDigital Communications Corporation (a Pennsylvania corporation) became InterDigital Communications, LLC (a Pennsylvania limited liability company). (CX-142 at pg. 2, footnote 5.)
3. Complainant InterDigital Technology Corporation is a Delaware corporation with its principal place of business at Hagley Building, Suite 105, 3411 Silverside Road, Concord Plaza, Wilmington, Delaware 19810-4812. (CX-142 at ¶ 6.)
4. InterDigital Communications, LLC and InterDigital Technology Corporation are subsidiaries of InterDigital, Inc., a Pennsylvania corporation. (CX-142 at ¶ 6.)
5. Respondent Nokia Corporation is a Finnish corporation with its principal place of business at Keilalahdentie 2-4, P.O. Box 226, FIN-00045 Nokia Group, Finland. (CX-142 at ¶ 10; CX-1589C at ¶ 10.)
6. Respondent Nokia Corporation is involved in the design, development, and manufacture of 3G mobile handsets through its Mobile Phones Business Group. (CX-142 at ¶ 10; CX-1589C at ¶ 10.)
7. Respondent Nokia Inc. is a Delaware corporation with its principal place of business at 6000 Connection Drive, Irving, Texas 75039. (CX-142 at ¶ 11; CX-1589C at ¶ 11.)

8. Respondent Nokia Inc. (d/b/a Nokia Mobile Phones) distributes Nokia-branded handsets in the United States. (CX-142 at ¶ 11; CX-1589C at ¶ 11.)

CONCLUSIONS OF LAW

1. The Commission has in personam and in rem jurisdiction.
2. There has been an importation of accused 3G mobile handsets into the United States which are the subject of the unfair trade allegations.
3. The asserted claims of '004 the patent are not infringed.
4. The asserted claims of the '966 patent are not infringed.
5. The asserted claims of the '847 patent are not infringed.
6. The asserted claims of the '579 patent are not infringed.
7. A domestic industry exists with respect to the patents in issue.
8. The asserted claims of the '004 patent are not invalid.
9. The asserted claims of the '966 patent are not invalid.
10. The asserted claims of the '847 patent are not invalid.
11. The asserted claims of the '579 patent are not invalid.
12. There is no prosecution laches relating to the '004, '966 and '847 patents.
13. The '574 patent is enforceable.
14. There is no waiver and patent misuse with respect to the patents in issue.
15. The evidence establishes that there is no violation of section 337.
16. In the event a violation of section 337 is found, the evidence shows that the appropriate remedy barring entry of infringing 3G mobile

handsets and components thereof are a limited exclusion order, and
cease and desist orders.

17. There is no evidence to support the issuance of a bond in the Presidential Review period.

ORDER

Based on the foregoing, and the record as a whole, it is the administrative law judge's Final Initial Determination that there is no violation of section 337 in the importation into the United States, sale for importation, and sale within the United States after importation of 3G mobile handsets and components thereof. It is also the administrative law judge's recommendation, should a violation be found, that a limited exclusion order issue barring entry into the United States of infringing 3G mobile handsets and components thereof and that appropriate cease and desist orders should issue.

The administrative law judge hereby CERTIFIES to the Commission his Final Initial and Recommended Determinations. Also ALJ exhibits ALJ-Ex. 1 to ALJ-Ex. 8 have been submitted to the Secretary for addition to the official record in this investigation. The briefs of the parties, filed with the Secretary, are not certified, since they are already in the Commission's possession in accordance with Commission rules.

Further it is ORDERED that:

1. In accordance with Commission rule 210.39, all material heretofore marked in camera because of business, financial and marketing data found by the administrative law judge to be cognizable as confidential business information under Commission rule 201.6(a), is to be given in camera treatment continuing after the date this investigation is terminated.

2. Counsel for the parties shall have in the hands of the administrative law judge those portions of the final initial and recommended determinations which contain bracketed confidential business information to be deleted from any public version of said determinations, no later than August 25, 2009. Any such bracketed version shall not be served via facsimile on the administrative law judge. If no such bracketed version is received from a party, it will mean that the party has no objection to removing the confidential status, in its entirety, from these initial and recommended determinations.

3. The initial determination portion of the Final Initial and Recommended Determinations, issued pursuant to Commission rules 210.42(a) and 210.42-46, shall become the determination of the Commission, unless the Commission, within that period, shall have ordered its review of certain issues therein or by order has changed the effective date of the initial determination portion. The recommended determination portion, issued pursuant to Commission rule 210.42(a)(1)(ii), will be considered by the Commission in reaching a determination on remedy pursuant to Commission rule 210.50(a).



Paul J. Luckern
Paul J. Luckern
Chief Administrative Law Judge

Issued: August 14, 2009

**CERTAIN 3G MOBILE HANDSETS
AND COMPONENTS**

Investigation No. 337-TA-613

PUBLIC CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **Public Version Final Initial and Recommended Determinations** was served by hand upon Commission Investigative Attorney, Benjamin Levi, Esq. and upon the following parties as indicated, on September 18, 2009.



Marilyn R. Abbott, Secretary *MRA*
U.S. International Trade Commission
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Washington, DC 20436

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**CERTAIN 3G MOBILE HANDSETS
AND COMPONENTS**

Investigation No. 337-TA-613

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