

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

QUALCOMM INCORPORATED and
ZYXEL COMMUNICATIONS CORPORATION,¹
Petitioner,

v.

UNM RAINFOREST INNOVATIONS,
Patent Owner.

IPR2021-00375
Patent 8,265,096 B2

Before KRISTEN L. DROESCH, BARBARA A. PARVIS, and
CHARLES J. BOUDREAU, *Administrative Patent Judges*.

DROESCH, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
Granting Patent Owner's Motion to Amend
Denying Patent Owner's Motion to Exclude
35 U.S.C. § 318(a)

¹ ZyXEL Communications Corporation was joined as a petitioner in this proceeding based on a petition and motion for joinder filed in IPR2021-00734, which was granted.

I. INTRODUCTION

We have authority to hear this *inter partes* review under 35 U.S.C. § 6, and this Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 (2019). For the reasons that follow, Petitioner has established by a preponderance of the evidence that claims 1–4, 6, and 7 of U.S. Patent No. 8,265,096 B2 (Ex. 1001, “’096 Patent”) are unpatentable.

A. Procedural History

Qualcomm Incorporated (“Qualcomm”) filed a Petition requesting an *inter partes* review of claims 1–4 and 6–8 (“challenged claims”) of the ’096 Patent. Paper 1 (“Pet.”). Qualcomm concurrently filed a Motion for Joinder seeking to join as a petitioner in *Intel Corp. v. UNM Rainforest Innovations*, IPR2020-01576. (Paper 3, “Qualcomm’s Motion for Joinder,” “Mot. Joinder”). UNM Rainforest Innovations (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). Pursuant to our authorization, Qualcomm filed a Reply to the Preliminary Response (Paper 10) to address discretionary denial under 35 U.S.C. § 314(a), to which Patent Owner filed a Sur-reply (Paper 12).

Pursuant to 35 U.S.C. § 314, we instituted trial on July 19, 2021, as to all of the challenged claims of the ’096 Patent and dismissed Qualcomm’s Motion for Joinder as moot.² Paper 14 (“Institution Decision” or “Dec.”).

ZyXEL Communications Corporation (“ZyXEL”) filed a petition for *inter partes* review and a Motion for Joinder in IPR2021-00734, requesting

² Prior to instituting this proceeding, IPR2020-01576 was terminated upon granting a joint motion to terminate. *Intel Corp. v. UNM Rainforest Innovations*, IPR2020-01576, Paper 9.

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that ZyXEL be joined as a petitioner in IPR2021-00375. *ZyXEL Commc'ns Corp. v. UNM Rainforest Innovations*, IPR2021-00734, Papers 1, 3. After considering the parties' papers, we instituted trial in IPR2021-00734, granted ZyXEL's Motion for Joinder, and added ZyXEL as a petitioner to IPR2021-00375. *ZyXEL Commc'ns Corp. v. UNM Rainforest Innovations*, IPR2021-00734, Paper 17. A copy of that decision was entered in this record. Paper 18.

After institution of trial, Patent Owner filed a Response (Paper 38, "PO Resp."), to which Qualcomm and ZyXEL (collectively "Petitioner") filed a Reply (Paper 40, "Pet. Reply"), to which Patent Owner filed a Sur-reply (Paper 43, "PO Sur-reply").

Patent Owner also filed a Motion to Amend (Paper 37, "Mot. Amend"), to which Petitioner filed an Opposition (Paper 41, "Pet. Opp. MTA"). Pursuant to Patent Owner's request (*see* Mot. Amend 1), we issued Preliminary Guidance (Paper 42, "PG") on Patent Owner's Motion to Amend. Patent Owner filed a Reply (Paper 64, "PO Reply MTA") to Petitioner's Opposition, to which Petitioner filed a Sur-reply (Paper 65, "Pet. Sur-reply MTA").

Petitioner relies on a first Declaration of Sumit Roy, Ph.D. (Ex. 1002) to support its Petition. Patent Owner relies on two Declarations of Branimir Vojcic, D.Sc. (Exs. 2001, 2013) to support its Response. Petitioner relies on a second Declaration of Dr. Roy (Ex. 1039) to support its Opposition to the Motion to Amend.

Dr. Roy and Dr. Vojcic were cross-examined during trial, and transcripts of Dr. Roy's deposition (Ex. 2015) and Dr. Vojcic's deposition (Ex. 1038) are included in the record.

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Patent Owner filed a Motion to Exclude Evidence (Paper 55, “PO Mot. Excl.”), to which Petitioner filed an Opposition (Paper 57, “Pet. Opp. Mot. Excl.”), to which Patent Owner filed a Reply (Paper 61, “PO Reply Mot. Excl.”).

Oral argument was held on May 12, 2022. A transcript of the oral argument is included in the record. Paper 66.

B. Real Parties in Interest

Qualcomm states that Qualcomm Incorporated is the real party in interest and further identifies its customers Dell Technologies Inc., Dell Inc., and EMC Corporation as additional real parties in interest. *See* Pet. 2.

ZyXEL states that ZyXEL Communications Corporation is a real party in interest. *ZyXEL Commc’ns Corp. v. UNM Rainforest Innovations*, IPR2021-00734, Paper 1, 2–3. ZyXEL also identifies ZyXEL Communications Inc. as a U.S. subsidiary of ZyXEL Communications Corporation, but indicates that ZyXEL Communications Corporation does not believe that ZyXEL Communications Inc. qualifies as a real party in interest. *Id.*

Patent Owner states that the University of New Mexico Board of Regents is an additional real party in interest. *See* Paper 6, 2.

C. Related Matters

The parties indicate the following matters may affect or be affected by a decision in this proceeding: *UNM Rainforest Innovations v. Industrial Technology Research Institute*, No. D-202-CV-2021-02803 (N.M. 2d. Judicial District Court May 4, 2021); *UNM Rainforest Innovations v. ASUSTek Computer, Inc.*, No. 6:20-cv-00142-ADA (W.D. Tex.); *UNM*

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Rainforest Innovations v. Dell Technologies, Inc., No. 6:20-cv-00468-ADA (W.D. Tex.); *UNM Rainforest Innovations v. D-Link Corp.*, No. 6:20-cv-00143-ADA (W.D. Tex.); *UNM Rainforest Innovations v. TP-Link Technologies Co.*, No. 6:19-cv-00428-ADA (W.D. Tex.); and *UNM Rainforest Innovations v. ZyXEL Communications Corp.*, No. 6:20-cv-00522-ADA (W.D. Tex.). *See* Pet. 2–3; Paper 6, 2; Paper 11, 1.

D. The '096 Patent (Ex. 1001)

The '096 Patent relates to methods for constructing frame structures for orthogonal frequency-division multiple access (OFDMA) systems. *See* Ex. 1001, 1:16–19.

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