

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ZYXEL COMMUNICATIONS CORPORATION,  
Petitioner,

v.

UNM RAINFOREST INNOVATIONS,  
Patent Owner.

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IPR2021-00734  
Patent 8,265,096 B2

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

DROESCH, *Administrative Patent Judge*.

DECISION  
Granting Institution of *Inter Partes* Review  
*35 U.S.C. § 314*

Granting Motion for Joinder  
*35 U.S.C. § 315(c); 37 C.F.R. § 42.122(b)*

## I. INTRODUCTION

### *A. Background*

ZyXEL Communications Corporation (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–4 and 6–8 (“challenged claims”) of U.S. Patent No. 8,265,096 B2 (Ex. 1001, “’096 Patent”). Pet. 1. Concurrently, Petitioner filed a Motion for Joinder (Paper 3, “Mot.”) seeking to be joined as a party to *Qualcomm, Inc. v. UNM Rainforest Innovations*, IPR2021-00375 (“Qualcomm IPR”). Petitioner timely filed its Motion for Joinder within one month after institution of trial in the Qualcomm IPR, as required by 37 C.F.R. § 42.122(b). UNM Rainforest Innovations (“Patent Owner”) filed a Preliminary Response (Paper 12, “Prelim. Resp.”) to the Petition and an Opposition (Paper 7, “Opp.”) to the Motion for Joinder, to which Petitioner filed a Reply (Paper 8, “Reply to Opp.”). Pursuant to our authorization, Petitioner filed a Reply to the Preliminary Response (Paper 15, “Reply to Prelim. Resp.”) to which Patent Owner filed a Sur-reply (Paper 16, “Sur-reply”). We have authority and jurisdiction under 35 U.S.C. §§ 6, 314 and 37 C.F.R. § 42.4.

For the reasons discussed below, we determine institution of *inter partes* review is warranted on the same grounds instituted in the Qualcomm IPR, and grant Petitioner’s Motion for Joinder.

### *B. Real Parties in-Interest*

Petitioner states that ZyXEL Communications Corporation is the real party in-interest and further identifies its subsidiary ZyXEL Communications Inc., as a possible real party in-interest. *See* Pet. 2–3.

Patent Owner states that the University of New Mexico Board of Regents is an additional real party in-interest. *See* Paper 5, 2.

### *C. Related Matters*

The parties indicate there is an ongoing dispute between Patent Owner and Industrial Technology Research Institute (“ITRI”) in New Mexico state court, concerning ownership of the ’096 Patent. *UNM Rainforest Innovations v. Industrial Technology Research Institute*, No. D-202-CV-2021-02803 (N.M. 2d. Judicial District Court May 4, 2021) (“New Mexico state court proceeding”). Paper 9, 1. Petitioner also informs us that ITRI filed a civil complaint on January 25, 2021, against UNM and Sino Matrix Technology in the Taiwan Hsinchu District Court seeking a declaratory judgment that ITRI is the owner of all rights in the ’096 Patent, among other patents. *See* Pet. 4.

The parties also identify the following matters that they allege may affect or be affected by a decision in this proceeding: *UNM Rainforest Innovations v. ASUSTek Computer, Inc.*, No. 6:20-cv-00142-ADA (W.D. Tex.); *UNM 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.); *UNM Rainforest Innovations v. ZyXEL Communications Corp.*, No. 6:20-cv-00522-ADA (W.D. Tex.). *See* Pet. 3–4; Mot. 3–4; Paper 5, 2; Paper 13, 1. The ’096 Patent also was asserted in *UNM Rainforest Innovations v. Apple Inc.*, No. 1:20-cv-00351 (W.D. Tex.), which has been dismissed. *See* Pet. 3 n.2.

Claims 1–4 and 6–8 of the ’096 Patent were the subject of a petition filed in the Qualcomm IPR, on which *inter partes* review was instituted. *See*

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Pet. 4; Mot. 4; Qualcomm IPR Paper 14 (“Decision on Institution,” “Qualcomm IPR Dec.”). Claims 1–4 and 6–8 of the ’096 Patent also were the subject of a petition filed in *Intel Corp. v. UNM Rainforest Innovations*, IPR2020-01576, which was terminated upon granting a joint motion to terminate. *See* Pet. 3 n.3.

*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.

Figure 6A of the '096 Patent is reproduced below:

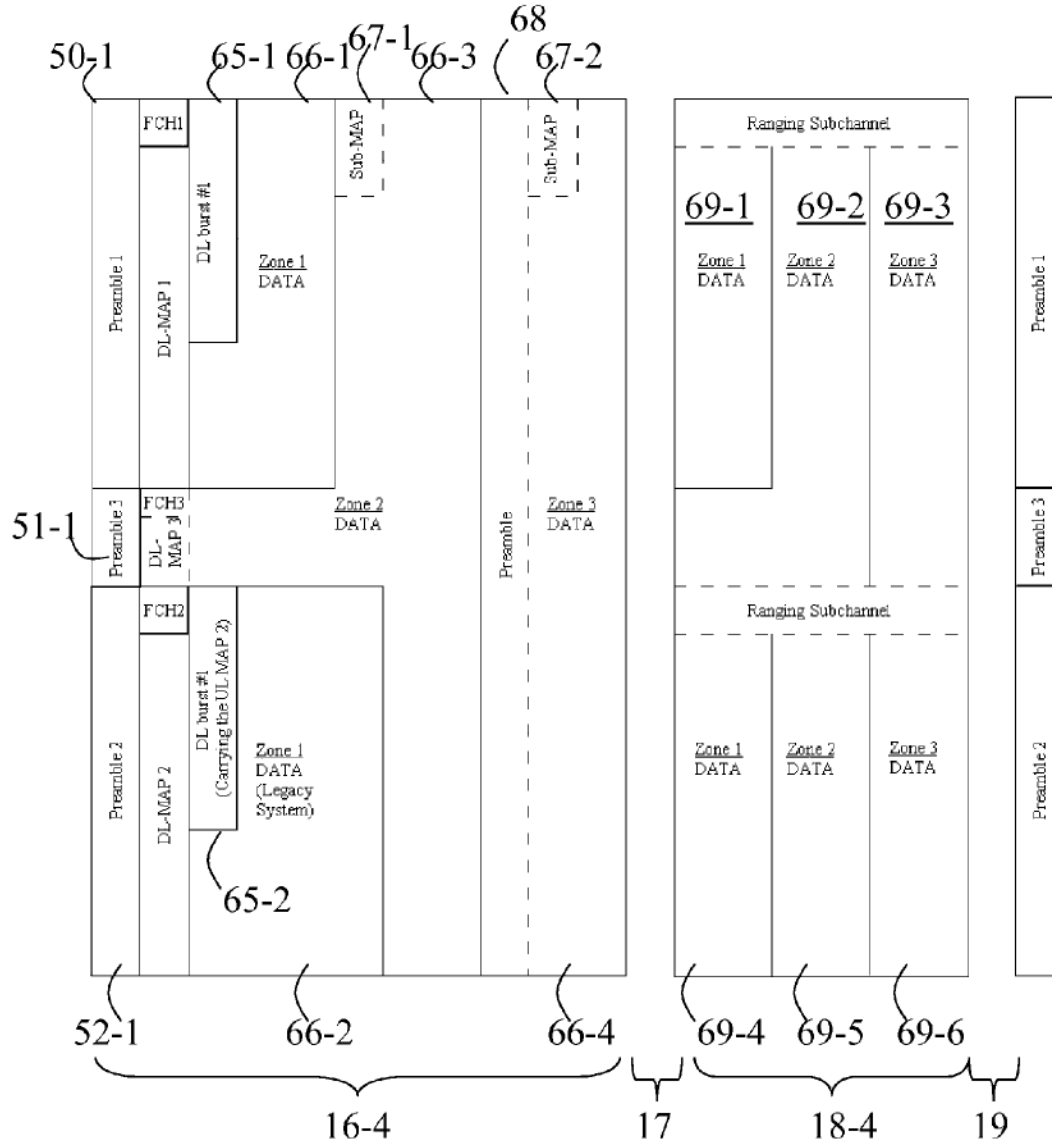


Figure 6A illustrates an OFDMA frame structure supporting high mobility and having a scalable bandwidth. *See* Ex. 1001, 4:1–3, 6:66–7:2. The frame structure includes downlink (DL) sub-frame 16-4 and uplink (UL) sub-frame 18-4. *See id.* at 7:5–7. The frame structure includes added regions related to zones 3 for high-mobility environments. *See id.* at 7:2–5. In DL sub-frame 16-4, a first added region includes preamble 68, a sub-MAP 67-2 and DATA 66-4. *See id.* at 7:5–7. In UL sub-frame 18-4, a

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