UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

QUALCOMM INCORPORATED and
ZYXEL COMMUNICATIONS CORPORATION,

Petitioner,

v.

UNM RAINFOREST INNOVATIONS,

Patent Owner.

IPR2021-00375

Patent 8,265,096 B2

SUPPLEMENTAL DECLARATION OF DR. SUMIT ROY, Ph.D. IN SUPPORT OF PETITIONER'S RESPONSE TO PATENT OWNER'S MOTION TO AMEND
Ex. 1039

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1. Proposed Amended Claim 44 11

a) 44[pre]: "A method of constructing a frame structure for data transmission, the method comprising" 11

b) 44[a]: "generating a first section comprising data configured in a first format compatible with a first communication system using symbols" 13

c) 44[b]: "generating a second section following the first section, the second section comprising data configured in a second format compatible with a second communication system using symbols, wherein the first communication system's symbols and the second communication system's symbols co-exist in one transmission scheme" 20

d) 44[c]: "and wherein: the second format is compatible with the second communication system

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configured to support higher mobility than the first communication system, wherein each symbol in the second communication system has a shorter symbol period than that in the first communication system" 27

e) 44[d]: "wherein the second communication system has pilot symbols that are denser than those in the first communication system" 42

f) 44[e]: "generating at least one non-data section containing information describing an aspect of data in at least one of the first section and the second section" 48

g) 44[f]: "combining the first section, the second section and the at least one non-data section to form the frame structure" 52

2. Proposed Amended Claim 45 53

3. Proposed Amended Claim 46 55

4. Proposed Amended Claim 47 57

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I. INTRODUCTION, BACKGROUND, QUALIFICATIONS, AND MATERIALS RELIED UPON

1. My name is Sumit Roy, Ph.D., and I have been retained by counsel for petitioner, Qualcomm Incorporated ("Qualcomm" or "Petitioner") as an expert witness to provide assistance regarding a petition for *Inter Partes* Review ("IPR") of U.S. Patent No. 8,265,096 ("the '096 Patent"). Previously, I was asked to consider the validity of issued claims 1-4 and 6-8 of the '096 Patent (the "Challenged Claims") in view of prior art, anticipation and obviousness considerations, and understanding of a person of ordinary skill in the art ("POSITA") as it relates to the '096 Patent, and I submitted the Declaration of Sumit Roy, Ph.D. on those subjects (Exhibit 1002 or my "Initial Declaration") in this IPR.

2. In my Initial Declaration, I explained why: the '096 Patent is not entitled to priority from U.S. Provisional Patent Application No. 60/929,798 ("the '798 Application"); on Ground 1, Claims 1-4 and 6-7 of the '096 Patent are invalid over Talukdar in view of Li; on Ground 2, Claim 8 of the ''096 Patent is invalid over Talukdar in view of Nystrom.

3. I now have been asked to consider the subjects of prior art, anticipation and obviousness from the standpoint of a POSITA (as defined in my Initial Declaration) with regard to proposed claims 44-50 ("the Proposed Amended Claims" and each a "Proposed Amended Claim") submitted with Patent Owner's Motion to Amend, Paper No. 27 ("Motion").

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4. I have personal knowledge of the facts and opinions set forth in this declaration and believe them to be true. If called upon to do so, I would testify competently thereto.

5. I am being compensated for my time at my standard consulting rate of $650 per hour. I am also being reimbursed for expenses that I incur during the course of this work. My compensation is not contingent upon the results of my study, the substance of my opinions, or the outcome of any proceeding involving the challenged claims. I have no financial interest in the outcome of this matter or on the pending litigation between Petitioner and Patent Owner.

6. My opinions are based on my years of education, research, experience, and other qualifications, as set forth in my Initial Declaration, as well as my investigation and study of relevant materials, including those cited herein and in my Initial Declaration.

7. I rely upon the materials identified in my Initial Declaration, my knowledge and experience, and/or additional materials to rebut arguments raised by the Patent Owner. In addition, I now have reviewed Patent Owner's Preliminary Response (Paper 8), the Declaration of Branimir Vojcic, D.Sc., in Support of UNM Rainforest Innovations' Preliminary Response (Ex. 2002), Patent Owner's Response (Paper 27), the transcript of the deposition of Dr. Vojcic, taken in this proceeding (excerpts of which are attached as Ex. 1038), as well as the Decision Granting

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