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



## TABLE OF CONTENTS

I.	INTRODUCTION, BACKGROUND, QUALIFICATIONS, AND							
	MATERIALS RELIED UPON							
II.	THE	THE PROPOSED AMENDED CLAIMS						
III.	LEG	LEGAL STANDARDS8						
IV.	CLA	CLAIM CONSTRUCTION8						
V.	LEVEL OF ORDINARY SKILL IN THE ART8							
VI.	SPECIFIC GROUNDS OF CHALLENGE AND SUMMARY OF							
	OPINIONS							
	A.	Grou	ınd 3: 1	Proposed Amended Claims 44-47 and 49-50 are				
		Reno	dered C	Obvious by Talukdar in view of Li	11			
		1.	Prop	osed 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				



			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.	Propo	osed Amended Claim 45	53
	3.	Propo	osed Amended Claim 46	55
	4.	Proposed Amended Claim 47		57
	5.	Proposed Amended Claim 49		
	6.	Propo	osed Amended Claim 50	61
VII.	SECONDA	RY CO	ONSIDERATIONS	63
VIII.	CONCLUS	ION		63



# 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").



- 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



# DOCKET

# Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

# **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

### **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

#### API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

#### **LAW FIRMS**

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

#### **FINANCIAL INSTITUTIONS**

Litigation and bankruptcy checks for companies and debtors.

#### **E-DISCOVERY AND LEGAL VENDORS**

Sync your system to PACER to automate legal marketing.

