UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE PATENT TRIAL AND APPEAL BOARD INTEL CORPORATION, Petitioner, v. UNM RAINFOREST INNOVATIONS, Patent Owner INTER PARTES REVIEW OF U.S. PATENT NO. 8,265,096 B2 PTAB Case No. IPR2020-01576 DECLARATION OF DR. ROBERT AKL, D.Sc. Ex. 1002



TABLE OF CONTENTS

I.	INTRODUCTION1									
II.	BACKGROUND AND QUALIFICATIONS									
III.	MATERIALS RELIED UPON									
IV.	SUMMARY OF OPINIONS									
V.	LEG	AL S'	TANDARDS	11						
	A.	Lega	al Standards for Prior Art	11						
	B.	Leg	al Standard for Priority Date	13						
	C.	Legal Standard for Anticipation13								
	D.	Legal Standard of Obviousness1								
VI.	CLAIM CONSTRUCTION									
VII.	LEV	VEL OF ORDINARY SKILL IN THE ART								
VIII.	BAC	BACKGROUND ON THE STATE OF THE ART2								
	A.	Overview of Cellular Communication Systems2								
	B.	Overview of Broadband Wireless Communication Systems								
		1.	First-Generation Broadband Systems	27						
		2.	Second-Generation Broadband Systems and OFDM	28						
	C.	Overview of 802.16/WiMAX								
		1.	History of 802.16	30						
		2.	Frame Structure of 802.16	33						
		3.	OFDM in 802.16	37						
		4.	OFDMA in 802.16	40						
	D.	802.	16/WiMAX and Mobility	41						
IX.	THE CHALLENGED '096 PATENT									
	A.	A. Background and '096 Patent Specification								
	B. Overview of the '096 Patent Prosecution History46									
X.	OVE	OVERVIEW OF THE PRIOR ART REFERENCES48								



	A.	Overview of "Talukdar" (Ex. 1012)						
	B.	Overview of "Li" (Ex. 1016)						
	C.	Overview of Nystrom (Ex. 1017)						
XI.	SPE	PECIFIC GROUNDS OF CHALLENGE						
	A.	Gro	Ground 1: Claims 1-4 and 6-7 were rendered obvious by					
		Talu	Talukdar in View of Li					
		1.	Clai	m 1	56			
			a)	1[pre]: "A method of constructing a frame				
				structure for data transmission, the method				
				comprising"	56			
			b)	1[a]: "generating a first section comprising data				
				configured in a first format compatible with a first				
				communication system using symbols"	59			
			c)	1[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"	66			
			d)	1[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				
				evetem"	73			



			e)	1[d]: "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"	88	
			f)	1[e]: "combining the first section, the second		
				section and the at least one non-data section to		
				form the frame structure"	93	
		2.	Claim	2	94	
		3.	Claim	3	96	
		4.	Claim	4	98	
		5.	Claim	61	00	
		6.	Claim	71	01	
	B. Ground 2: Talukdar and Nystrom Rendered Claim 8 Obvious				03	
		1.	8[c]: '	and wherein the second communication system has		
			pilot s	ymbols that are denser than those in the first		
			comm	unication system"1	03	
XII.	SECONDARY CONSIDERATIONS					
XIII.	CON	CLUS	ION	1	12	

APPENDIX A (Curriculum Vitae)



I. INTRODUCTION

- 1. My name is Robert Akl, and I have been retained by counsel for Petitioner Intel Corporation ("Intel" or "Petitioner") as an expert witness to provide assistance regarding U.S. Patent No. 8,265,096 ("the '096 Patent"). Specifically, I have been asked to consider the validity of 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. 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.
- 2. I am being compensated for my time at my standard consulting rate of \$695 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.
- 3. My opinions are based on my years of education, research and experience, as well as my investigation and study of relevant materials, including those cited herein.
 - 4. I may rely upon these materials, my knowledge and experience, and/or



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.

