### UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ericsson Inc.

Petitioner

V.

Electronics and Telecommunications Research Institute

Patent Owner

Patent No. 9,496,976 Filing Date: July 7, 2015 Issue Date: November 15, 2016

Title: CELL SEARCH METHOD, FORWARD LINK FRAME TRANSMISSION METHOD, APPARATUS, USING THE SAME AND FORWARD LINK FRAME STRUCTURE

Inter Partes Review No. IPR2019- 00240

PETITION FOR *INTER PARTES* REVIEW UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100 *ET SEQ*.



# **Table of Contents**

I.	Preli	reliminary Statement1				
II.	Standards Background					
III.	Technological Background					
	A.	A. The location of the P-SCH and S-SCH in prior art 3G frames				
	B.	The location of the P-SCH and S-SCH in prior art 4G frames			7	
		1.		roposals disclosed sending the P-SCH and S-SCH iple times per frame, similar to 3G	8	
		2.	_	proposals disclosed sending the P-SCH and S-SCH in ecutive OFDM symbols within the subframe	9	
		3.		art cellular devices also used the P-SCH and S-SCH termine the base station's Cell ID	11	
IV.	The '976 Patent					
	A.	Challenged Claims				
	B.	Priority Date and Prosecution History				
V.	Prior Art					
	A.	U.S.	Patent	No. 8,031,745 ("TI Patent")	18	
		1.	The	TI Patent is Prior Art Under 35 U.S.C. 102(e)	18	
		2.	The	Teachings of the TI Patent	23	
		3.	The	Teachings of the TI Provisional	24	
			a.	The text of the TI Provisional discloses the frame structure of the '976 Patent	25	
			b.	Figure 6 of the TI Provisional discloses multiple embodiments of the frame structure of the '976 Patent	25	



	B.	R1-060812 ("Samsung")				
		1.	Sams	ung is Prior Art Under 35 U.S.C. § 102(a)	31	
		2.	The 7	Feachings of Samsung	32	
	C.	R1-061144 ("CHTTL")			33	
		1.	CHT	ΓL is Prior Art Under 35 U.S.C. § 102(a)	33	
		2.	The 7	Teachings of CHTTL	34	
VI.	Statement of Precise Relief Requested					
	A.	Clain	ns for V	Which Review is Requested	36	
	B.	Statutory Grounds of Challenge			36	
	C.	Level of Ordinary Skill				
	D.	Clain	n Cons	truction	37	
VII.	Clain	ns 9, 1	0, and	16 are Unpatentable	38	
	A.	Ground #1: Claims 9, 10, and 16 are anticipated under 35 U.S.C. § 102(a) by the TI Patent, or in the alternative, are obvious under 35 U.S.C. § 103 over the TI Patent			38	
		1.	Clain	19	38	
			a.	[9.1] A method of generating and transmitting downlink transmission by a base station in a wireless communication system, the method comprising:	38	
			b.	[9.2] generating a first primary synchronization sequence:	39	
			c.	[9.3] generating a second primary synchronization sequence:	40	
			d.	[9.4] generating a first secondary synchronization sequence:	42	



e.	[9.5] generating a second secondary synchronization sequence:	42
f.	[9.6a] transmitting the downlink transmission including the first and second primary synchronization sequences and the first and second secondary synchronization sequences, wherein the downlink transmission comprises a plurality of subframes sequentially arranged in time domain, each of the plurality of subframes containing a plurality of symbols sequentially arranged in time domain,	44
g.	[9.6b] wherein a first subframe in the downlink transmission includes a first symbol representing the first primary synchronization sequence, and wherein a second subframe in the downlink transmission includes a second symbol representing the first secondary synchronization sequence:	47
h.	[9.7] wherein a first indicator is identified based on the first primary synchronization sequence, a second indicator is identified based on the first secondary synchronization sequence, and a cell identifier is identified based on the first indicator and the second indicator:	49
i.	[9.8] wherein the first subframe includes a third symbol representing a second secondary synchronization sequence, the third symbol being directly adjacent to the first symbol, and wherein the second subframe includes a fourth symbol representing a second primary synchronization sequence, the fourth symbol being directly adjacent to the second symbol	50
Clain	n 10	55
a.	[10.1] The method of claim 9, wherein the first primary synchronization sequence is the same as	



2.

			the second primary synchronization sequence, and the first secondary synchronization sequence is different from the second secondary synchronization sequence.	55
	3.	Claim 16		
		a.	[16.1] The method of claim 9, wherein the downlink transmission comprises a frame, and the first and second primary synchronization sequences and the first and second secondary synchronization sequences are contained in the frame.	57
		The '	TI Patent discloses this limitation. For example, in Figure 8, the first and second P-SCHs and first and second S-SCHs are in the first and sixth subframes, all within the same frame:	58
В.	Ground #2: Claims 9, 10, and 16 are anticipated under 35 U.S.C. § 102(a) by Samsung, or in the alternative, are obvious under 35 U.S.C. § 103 over Samsung			
	1.	Clair	n 9	59
		a.	[9.1] A method of generating and transmitting downlink transmission by a base station in a wireless communication system, the method comprising:	59
		b.	[9.2] generating a first primary synchronization sequence:	59
		c.	[9.3] generating a second primary synchronization sequence:	61
		d.	[9.4] generating a first secondary synchronization sequence:	62
		e.	[9.5] generating a second secondary synchronization sequence:	63



# 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.

