

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

TELEFONAKTIEBOLAGET LM ERICSSON,
Patent Owner

U.S. PATENT NO. 9,860,044

Case IPR2021-TBD

**DECLARATION OF DR. APOSTOLOS K. KAKAES, PH.D.
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S.
PATENT NO. 9,860,044**

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. BACKGROUND AND QUALIFICATIONS.....	2
III. MATERIALS AND OTHER INFORMATION CONSIDERED.....	8
IV. UNDERSTANDING OF PATENT LAW	10
V. SUMMARY OF OPINIONS.....	13
VI. OVERVIEW OF THE TECHNOLOGY.....	13
VII. Overview of the '044 Patent.....	17
A. Claims.....	17
B. Summary of the Specification.....	17
C. Summary of the Prosecution History	20
VIII. LEVEL OF ORDINARY SKILL IN THE ART.....	21
IX. OVERVIEW OF THE PRIOR ART REFERENCES.....	23
A. Overview of Motorola.....	23
B. Overview of LTE Release 8 Standards (TS 36.211, TS 36.213).....	25
X. DETAILED ANALYSIS OF BASES OF INVALIDITY	36
A. Motorola in view of LTE Release 8 TS 36.211 and TS 36.213 Standards Renders Obvious All Challenged Claims.....	36
1. Reasons to Combine Motorola and LTE Release 8 TS 36.211 and TS 36.213 Standards	36
2. Independent Claim 1	42
a. Preamble: “A method implemented by a base station of receiving control information from a user terminal, the method comprising:”	42

;

b.	Element [1.1]: “scheduling downlink transmissions to a first user terminal only on a single downlink component carrier associated with a primary cell and scheduling downlink transmissions to a second user terminal on multiple downlink component carriers or on a downlink component carrier associated with a non-primary cell;”	43
c.	Element [1.2]: “receiving, on a first set of radio resources, control information associated with the downlink transmissions to the first user terminal, wherein the first set of radio resources is reserved for a user terminal scheduled to receive downlink transmissions only on a single downlink component carrier associated with the primary cell; and”	47
d.	Element [1.3]: “receiving, on a second set of radio resources, control information associated with the downlink transmissions to the second user terminal, wherein the second set of radio resources is reserved for a user terminal scheduled to receive downlink transmissions on multiple downlink component carriers or on a downlink component carrier associated with a non-primary cell, the first and second sets of radio resources being on a same uplink component carrier associated with the primary cell.”	51
3.	Dependent Claim 2.....	56
a.	“The method of claim 1, wherein the first and second sets of radio resources are different.”	56
4.	Dependent Claim 3.....	58
a.	“The method of claim 2, wherein the second set of radio resources are additional resources as compared to the first set of radio resources.”	58
5.	Dependent Claim 4.....	61
a.	“The method of claim 1, further comprising transmitting control information to the first user	

	terminal to explicitly indicate the first set of radio resources on the uplink component carrier associated with the primary cell.”	61
6.	Dependent Claim 5.....	63
a.	“The method of claim 1, further comprising providing the first user terminal with an implicit indication to dynamically assign radio resources in said first set of radio resources.”	63
7.	Dependent Claim 6.....	65
a.	“The method of claim 5, wherein the implicit indication is a control channel element (CCE) of a Physical Downlink Control Channel (PDCCH) used for scheduling the first user terminal.”	65
8.	Dependent Claim 7.....	65
a.	“The method of claim 1, further comprising transmitting control information to the second user terminal on a downlink component carrier to implicitly or explicitly indicate the second set of radio resources on the uplink component carrier associated with the primary cell.”	65
9.	Dependent Claim 8.....	67
a.	“The method of claim 7, wherein at least one of the first and second sets of radio resources is indicated explicitly by an uplink control channel resource index.”	67
10.	Dependent Claim 9.....	68
a.	“The method of claim 8, wherein an explicit indication related to the second set of radio resources is transmitted as radio resource control signaling.”	68
11.	Dependent Claim 10	70
a.	“The method of claim 1, further comprising transmitting, on the single downlink component	

...

	carrier, an assignment of radio resources in the second set of radio resources when the second user terminal is scheduled to receive the downlink transmissions on the multiple downlink component carriers or on the downlink component carrier associated with the non-primary cell.”70
12.	Dependent Claim 1173
	a. “The method of claim 10, wherein the assignment of radio resources in said second set of radio resources is an acknowledgement resource indication to dynamically assign radio resources to the second user terminal when the second user terminal is scheduled to receive downlink transmissions on the multiple downlink component carriers or on the downlink component carrier associated with the non-primary cell.”73
13.	Dependent Claim 1575
	a. “The method of claim 1, wherein the first user equipment is the same as the second user equipment.”75
14.	Dependent Claim 1676
	a. “The method of claim 1, wherein the first user equipment is different from the second user equipment”76
15.	Independent Claim 1776
	a. Preamble: “A base station comprising:”76
	b. Element [17.1]: “a transmitter to transmit user data on one or more downlink component carriers to a first user terminal and a second user terminal; and”76
	c. Element [17.2]: “a controller to schedule downlink transmissions to the first user terminal and the second user terminal, the controller configured to:”77

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.