UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD
APPLE INC.,
Petitioner,
V.
TELEFONAKTIEBOLAGET LM ERICSSON,
Patent Owner
Inter Partes Review Case No. IPR2022-00648
U.S. PATENT NO. 9,860,044

DECLARATION OF APOSTOLOS K. KAKAES, PH.D.



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	LEVEL OF ORDINARY SKILL IN THE ART	
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	Overview of Motorola	
	Overview of LTE Release 8 Standards (TS36.211, TS36.213)	
	Overview of LTE Release 9 Technical Report (TR36.912)	
	DETAILED ANALYSIS OF BASES OF INVALIDITY	
A. M	Motorola in view of LTE Release 8 TS36.211 and TS36.213 Standards otorola in view of LTE Release 8 TS36.211 and TS 36.213 in further view	or W
	TR36.912 Renders Obvious All Challenged Claims	
	1. Reasons to Combine Motorola and LTE Release 8 TS36.211 and TS36.2	
	2. Reasons to Combine TR36.912 with Motorola and the LTE Release 8	32
	ΓS36.211 and TS36.213 Standards	59
	3. Independent Claim 1	
	a. Preamble: "A method implemented by a base station of receiving contra	rol
	information from a user terminal, the method comprising:"	60
	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;"	<i>L</i> 1
	component carrier associated with a non-priniary cen,	01



	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"67	,
	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	
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	uplink component carrier associated with the primary cell."71	
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	a. "The method of claim 1, wherein the first and second sets of radio	
	resources are different."77	,
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	additional resources as compared to the first set of radio resources."79)
6.	Dependent Claim 482	
	a. "The method of claim 1, further comprising transmitting control	
	information to the first user terminal to explicitly indicate the first set of	
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	cell."82	,
7.	. Dependent Claim 584	
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	terminal with an implicit indication to dynamically assign radio resources in	
	said first set of radio resources."84	ŀ
8	. Dependent Claim 685	,
	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."	,
9.	. Dependent Claim 786)
	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 theuplink	
	component carrier associated with the primary cell."86	
1	0. Dependent Claim 889)
	a "The method of claim 7 wherein at least one of the first and second sets	



O	f radio resources is indicated explicitly by an uplink control channel
re	esource index."89
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S	econd set of radio resources is transmitted as radio resource control
S	gnaling."90
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d	ownlink component carrier, an assignment of radio resources in the second
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S	econd user terminal is scheduled to receive downlink transmissions on the
n	nultiple downlink component carriers or on the downlink component carrier
a	ssociated with the non-primary cell."96
14.	Dependent Claim 1599
a	"The method of claim 1, wherein the first user equipment is the same as
tl	ne second user equipment."99
15.	1
a	"The method of claim 1, wherein the first user equipment is different
fi	om the second user equipment"
16.	1
a	Preamble: "A base station comprising:"
b	Element [17.1]: "a transmitter to transmit user data on one or more
	ownlink component carriers to a first user terminal and a second user
	erminal; and"101
	Element [17.2]: "a controller to schedule downlink transmissions to the
fi	rst user terminal and the second user terminal, the controller configured to:"
	101
17.	1
a	
	ontrol information in a mobile communication network, the method
c	omprising:"105
b	Element [18.1]: "receiving an assignment of radio resources for downlink



trai	nsmissions from a base station;"106
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inf	formation associated with the downlink transmissions responsive to being
	igned radio resources only on a single downlink component carrier
	ociated with the primary cell for the downlink transmission, wherein the
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	Element [18.3]: "transmitting, on a second set of radio resources, control
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23.	
a.	"The method of claim 18, further comprising receiving an implicit



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