

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner

v.

TELEFONAKTIEBOLAGET LM ERICSSON
Patent Owner

Case No. IPR2022-00464
Patent No. 10,193,600

PATENT OWNER'S PRELIMINARY RESPONSE

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Cases

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Becton, Dickinson and Co. v. B. Braun Melsungen AG,
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Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.,
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Federal Statutes

35 U.S.C. §314(a)1, 2, 3

35 U.S.C. § 325(d)1, 20, 23

Other Authorities

H.R. Rep. No. 112–98, pt. 1 (2011).....2, 3

LIST OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 10,193,600 (“the ’600 Patent”)
1002	Certified File History of U.S. Patent No. 10,193,600
1003	Declaration of Dr. Apostolos K. Kakaes for Inter Partes Review of U.S. Patent No. 10,193,600
1004	<i>Curriculum Vitae</i> of Dr. Apostolos K. Kakaes
1005	U.S. Patent Application Publication No. 2014/0016549 (“Novlan”)
1006	3GPP TS 36.213, v12.3.0 (“36.213”)
1007	3GPP TS 36.213, v10.1.0
1008	U.S. Patent No. 8,891,676
1009	Declaration of Friedhelm Rodermund in Support of Petition for Inter Partes Review of U.S. Patent No. 10,193,600
1010	U.S. Provisional Patent Application No. 62/103,101 (“the ’600 Patent Provisional”)
1011	U.S. Patent Application Publication No. 2013/0163687 (“Jing”)
1012	U.S. Provisional Patent Application No. 61/670,936 (the “Novlan Provisional”)
1013	Dahlman <i>et al.</i> , 4G – LTE / LTE-Advanced for Mobile Broadband (Academic Press 2011) (“Dahlman”)
1014	Declaration of James L. Mullins in Support of Petition for Inter Partes Review of U.S. Patent No. 10,193,600
1015	U.S. Patent Application Publication No. 2008/0051091
1016	Sesia, <i>et al.</i> , LTE - The UMTS Long Term Evolution From Theory to Practice (Wiley 2d. ed. 2011) (“Sesia”)
1017	Declaration of Jacob Robert Munford in Support of Petition for Inter Partes Review of U.S. Patent No. 10,193,600
2001	Declaration Of Dr. Muriel Médard, Sc.D In Support Of Patent Owner’s Preliminary Response
2002	<i>Curriculum Vitae</i> of Dr. Muriel Médard

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