

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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HTC CORPORATION, HTC AMERICA, INC.,  
ZTE CORPORATION, and ZTE (USA), INC.,  
Petitioner,

v.

CELLULAR COMMUNICATIONS EQUIPMENT LLC,  
Patent Owner.

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Case IPR2016-01493<sup>1</sup>  
Patent 8,457,676 B2

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Before BRYAN F. MOORE, GREGG I. ANDERSON, and  
JOHN A. HUDALLA, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
35 U.S.C. 318(a)

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<sup>1</sup> HTC Corporation, HTC America, Inc., ZTE Corporation, and ZTE (USA), Inc. filed a petition in (now terminated) IPR2017-01081, and have been joined to the instant proceeding.

## I. INTRODUCTION

Apple Inc., filed a Petition (Paper 1, “Pet.”) pursuant to 35 U.S.C. §§ 311–19 to institute an *inter partes* review of claims 1, 3, 19, and 21 (“the challenged claims”) of U.S. Patent No. 8,457,676 B2 (“the ’676 patent,” Ex. 1001). Pet. 1. The Petition is supported by the Declaration of Zygmunt J. Haas, Ph.D. (“Haas Declaration,” “Haas Dec.,” Ex. 1006). HTC Corporation, HTC America, Inc., ZTE Corporation, and ZTE (USA), Inc. (collectively “Petitioner”) were joined into this *inter partes* review and the *inter partes* review was subsequently terminated as to Apple Inc. Papers 23, 26. Cellular Communications Equipment LLC (“Patent Owner”) filed a Preliminary Response (“Prelim. Resp.,” Paper 6).

On February 13, 2017, we instituted an *inter partes* review of claims 1, 3, 19, and 21 the ’676 patent. Paper 7 (“Inst. Dec.”). Patent Owner filed a Response. Paper 12 (“PO Resp.”). The Patent Owner’s Response is supported by the Declaration of Jay P. Kesan, Ph.D. (“Kesan Declaration,” “Kesan Dec.,” Ex. 2007). Petitioner filed a Reply. Paper 16 (“Reply”). An oral hearing was held on November 8, 2017. Paper 31 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1, 3, 19, and 21 are unpatentable.

### A. *Related Matters*

Patent Owner advises us that the following District Court lawsuits are related to this proceeding: *Cellular Communications Equipment LLC v.*

*AT&T Inc., et al.*, 2:15-cv-00576 (E.D. Tex.); *Cellular Commc'ns Equipment LLC v. Sprint Corp. et al.*, 2:15-cv-00579 (E.D. Tex.); *Cellular Commc'ns Equipment LLC v. T-Mobile USA, Inc. et al.*, 2:15-cv-00580 (E.D. Tex.); and *Cellular Commc'ns Equipment LLC v. Verizon Commc'ns, Inc. et al.*, 2:15-cv-00581 (E.D. Tex.). Paper 5, 2. In addition, there is one other *inter partes* review proceeding asserting unpatentability of the '676 patent: *HTC Corporation and HTC America, Inc. v. Cellular Communications Equipment LLC*, Case IPR2016-01501 ("1501 IPR"). Paper 5, 3. A Final Written Decision in IPR2016-01501 is being issued concurrently with the instant Decision.

#### *B. The '676 Patent*

The '676 patent generally relates to wireless communication technologies and the reporting of power headroom information from a mobile unit to a base station. The '676 patent is directed to an apparatus and method that "provides specific reporting criteria that are an attractive trade-off between signalling overhead versus overall uplink performance for LTE [Long-Term Evolution]." Ex. 1001, 4:32–35. When the user equipment (UE) determines that a threshold from a set of one or more criteria has been reached, it triggers sending a power control headroom report to the base station. *Id.* at Abstract. The inventors state that the triggering criteria used in the invention "are found to be very efficient for sending a power control headroom report in the uplink, while optimizing uplink performance, and while minimizing signaling overhead." *Id.* at 4:35–38. Further, the triggering criterion "includes a threshold having been reached, and the

threshold is adjustable via a signal to the user equipment from a base station.” *Id.* at Abstract. The inventors state that measurement of path-loss “based on the DL [downlink] (e.g. DL pilot channel)” is an effective parameter to analyze for optimizing the tradeoffs. *Id.* at 4:6. The inventors found that “[e]ven if the frequency of potential power adjustments at the terminal is high but the measured path-loss is not changing, [then] UL signaling would be a waste of resources.” *Id.* at 4:7–9.

### *C. Illustrative Claim*

Of the challenged claims, claims 1 and 19 are the only independent claims.

Claim 1, reproduced below, is illustrative.

1. A method comprising:

determining that a set of at least one triggering criterion is met;  
and

providing a power control headroom report on an uplink from user equipment, in response to determining that the set is met,

wherein said at least one triggering criterion include at least one threshold having been reached, wherein said at least one threshold is adjustable via a signal to the user equipment,

wherein the set of at least one triggering criterion comprises a criterion being met based on reaching a threshold of the at least one threshold of  $k$  transmission time intervals following a previous power control headroom report, wherein  $k$  is an integer and wherein said at least one threshold adjustable via the signal comprises adjusting the threshold integer  $k$ .

Ex. 1001, 6:26–40.

*D. Instituted Grounds of Unpatentability*

We instituted trial on the following grounds (Inst. Dec. 20):

Claims	Basis	References
1 and 19	§ 103	Fong <sup>2</sup> and Ericsson <sup>3</sup>
3 and 21	§ 103	Fong, Ericsson, and Bark <sup>4</sup>

I. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S.Ct. 2131, 2144–46 (2016). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

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<sup>2</sup> U.S. Patent Application Pub. No. 2004/0223455 A1 published Nov. 11, 2004 (Ex. 1003, “Fong”)

<sup>3</sup> R2-052744, FILTERING FOR UE POWER HEADROOM MEASUREMENT, 3GPP RAN WG2 #49 MEETING, SEOUL, KOREA, NOVEMBER 2, 2005 (Ex. 1004, “Ericsson”)

<sup>4</sup> U.S. Patent No 6,445,917 B2 issued Sept. 3, 2002 (Ex. 1005, “Bark”)

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