

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ERICSSON INC. and TELEFONAKTIEBOLAGET LM ERICSSON,  
Petitioner,

v.

INTELLECTUAL VENTURES II LLC,  
Patent Owner.

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Case IPR2015-01872  
Patent 7,385,994 B2

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Before BRYAN F. MOORE, BRIAN J. McNAMARA,  
and DAVID C. McKONE, *Administrative Patent Judges*.

McKONE, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a) and 37 C.F.R. § 42.73*

## I. INTRODUCTION

### A. Background

Ericsson Inc. and Telefonaktiebolaget LM Ericsson (collectively “Petitioner”) filed a Petition (Paper 2, “Pet.”) to institute an *inter partes* review of claims 1–25 of U.S. Patent No. 7,385,994 B2 (Ex. 1001, “the ’994 patent”). Intellectual Ventures II LLC (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”). Pursuant to 35 U.S.C. § 314, in our Decision to Institute (Paper 10, “Dec.”), we instituted this proceeding as to claims 1–4, 7, 11–14, 17, and 20–25, but not claims 5, 6, 8–10, 15, 16, 18, and 19.

Patent Owner filed a Patent Owner’s Response (Paper 18, “PO Resp.”), and Petitioner filed a Reply to the Patent Owner’s Response (Paper 21, “Reply”).

Petitioner relies on the testimony of Mark R. Lanning (Ex. 1006, “Lanning Decl.”). Patent Owner relies on the testimony of Tim A. Williams, Ph.D. (Ex. 2013, “Williams Decl.”).

An oral argument was held on December 8, 2016 (Paper 28, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a final written decision under 35 U.S.C. § 318(a) as to the patentability of the challenged claims. Based on the record before us, Petitioner has not demonstrated, by a preponderance of the evidence, that any claim of the ’994 patent is unpatentable.

*B. Related Matters*

The '994 patent is the subject of several lawsuits in the United States District Court for the District of Delaware. Pet. 1; Paper 5, 1–2.

The '994 patent also was the subject of *Ericsson Inc. v. Intellectual Ventures II LLC*, Case IPR2014-01170 (PTAB). In that proceeding, the Board declined to institute an *inter partes* review. Ex. 1005.

*C. References Relied Upon*

U.S. Patent No. 6,480,911 B1, issued Nov. 12, 2002 (Ex. 1002, “Lu”);  
and

U.S. Publication No. 2002/0183066 A1, published Dec. 5, 2002  
(Ex. 1003, “Pankaj”).

*D. The Instituted Grounds*

We instituted *inter partes* review based on the following specific grounds (Dec. 40–41):

Reference(s)	Basis	Claim(s) Challenged
Lu	§ 103(a)	1–4, 7, 11–14, 17, 20, 21, 23, and 24,
Lu and Pankaj	§ 103(a)	22 and 25

*E. The '994 Patent*

The '994 patent describes gateway queuing algorithms in packet networks. Ex. 1001, 1:5–9. The data packets are queued according to tiers

and a communication resource is made available on a tier-by-tier basis.

*Id.* at Abstract. Figure 2, reproduced below, illustrates an example:

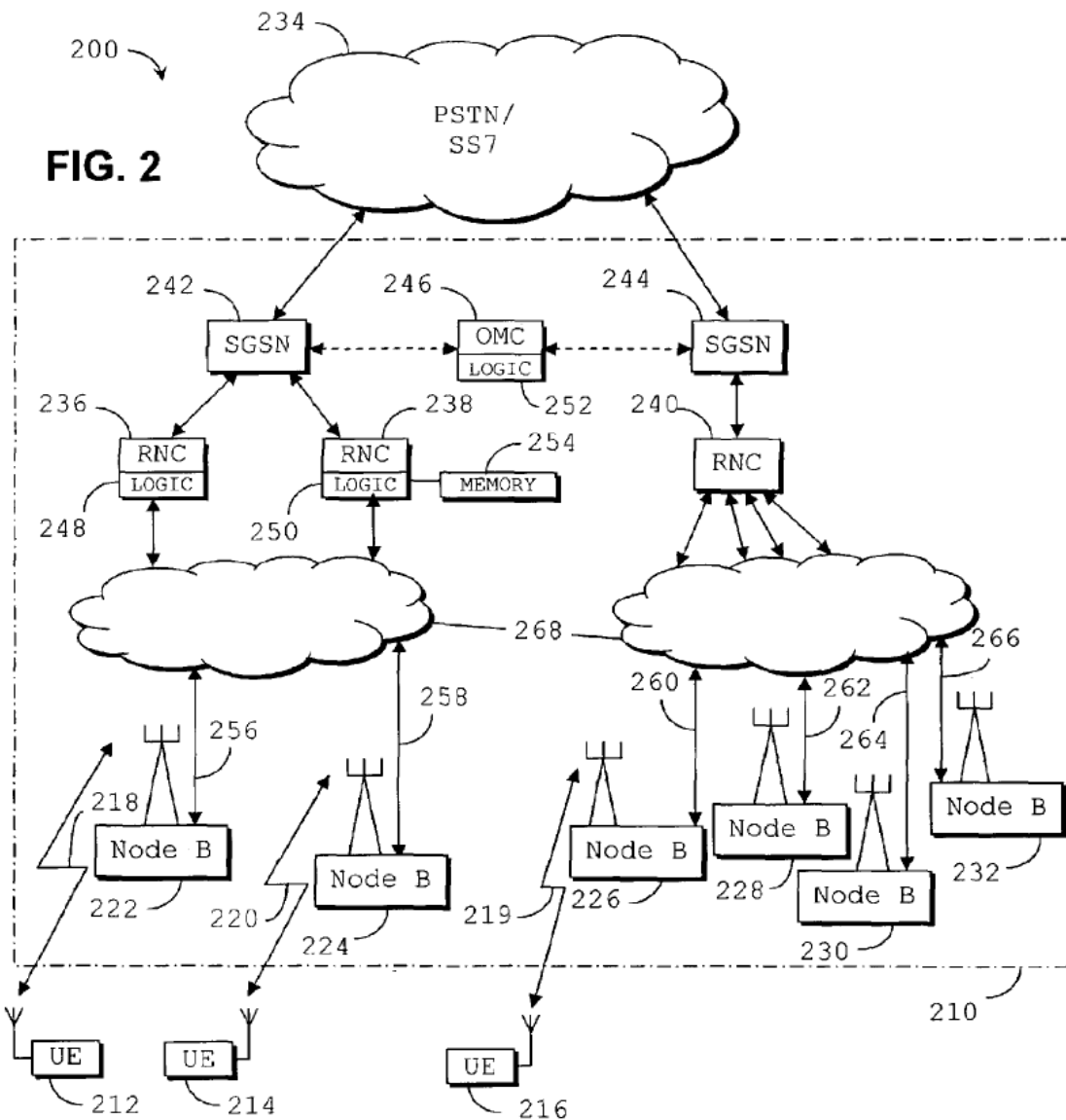


Figure 2 is a block diagram of a wireless communication system. *Id.* at 5:8–10.

The following acronyms are helpful in understanding the description of Figure 2, as well as other portions of this discussion:

3GPP - Third Generation Partnership Project;  
CDMA - code division multiple access;  
ETSI - European Telecommunication Standards Institute;  
GGSN - gateway GPRS support node;  
GPRS - General Packet Radio Service;  
GSM - Global System for Mobile Communication;  
MS - mobile station;  
MSC - mobile switching centre;  
PSTN - public switched telephone network;  
RNC - radio network controller;  
TDMA - time-division multiple access;  
UE - user equipment;  
UMTS - universal mobile telecommunication system;  
UTRAN - UMTS Terrestrial Radio Access Network;  
WCDMA - Wideband CDMA.

Cellular-based telecommunication system 200 is described in terms of a UMTS system, in particular a system that complies with the 3GPP specification for WCDMA. *Id.* at 5:21–30. As shown in Figure 2, system 200 includes a plurality of subscriber terminals (e.g., cellular telephones, also referred to as MS or UE) 212, 214, 216 communicating over radio links 218, 219, 220 with base transceiver stations (also called Node-Bs) 222, 224, 226, 228, 230. *Id.* at 31–37. The Node-Bs are connected to external network 234 (e.g., the Internet), through base station controllers (also called RNCs) 236, 238, 240 and, in turn through MSC 242 and SGSN 244. *Id.* at 5:61–67.

RNCs 236, 238, 240 include processing elements 248 adapted to facilitate packet data queuing and scheduling. *Id.* at 6:14–18. RNCs 236, 238, 240 implement an algorithm to schedule queued packet data transmissions. *Id.* at 6:18–22. Allocation of a shared resource is made at certain time intervals, or rounds. *Id.* at 6:29–32. In one example, users

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