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Paper No. 68
Filed: December 9, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ERICSSON INC. and
TELEFONAKTIEBOLAGET LM ERICSSON,
Petitioner,

v.

INTELLECTUAL VENTURES I LLC,
Patent Owner.

Case IPR2014-01149
Patent 6,023,783

Before JOSIAH C. COCKS, WILLIAM A. CAPP, and
DAVID C. McKONE, *Administrative Patent Judges.*

CAPP, *Administrative Patent Judge.*

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

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Ericsson Inc. and Telefonaktiebolaget LM Ericsson, (collectively "Ericsson") filed a Petition (Paper 1, "Pet.") requesting *inter partes* review of claims 6–12, 18–22, 25, 26, 43–49, 55–59, 62, and 63 of U.S. Patent No. 6,023,783 (Ex. 1001, the "'783 patent"). We issued a Decision to Institute an *inter partes* review of claims 18–22, 25, 26, 43, 44, 46–49, 55–59, 62, and 63 of the '783 patent. Paper 8 ("DI"). After institution of trial, Patent Owner Intellectual Ventures I LLC ("Intellectual Ventures") filed a Patent Owner's Response (Paper 33, "PO Resp.") and Ericsson filed a Petitioner's Reply (Paper 38, "Reply"). We have jurisdiction under 35 U.S.C. § 318(a).

The instant case came before the Board for a regularly scheduled oral hearing on the merits on August 26, 2015, the transcript of which is entered as Paper 65 ("Tr."). Also before the Board are the following matters:

Petitioner's Objection to Patent Owner's Evidence (Paper 37);

Patent Owner's Objection to Petitioner's Evidence (Paper 42);

Petitioner's Motion to Exclude Evidence (Paper 44, 49, 60);

Patent Owner's Motion to Exclude Evidence (Papers 45, 51, 58);

Patent Owner's Motion to Withdraw Challenged Claims (Paper 52, 62, 64, and 66).

After considering the evidence and arguments of counsel and for the reasons set forth below, we determine that Ericsson has met its burden of showing, by a preponderance of the evidence, that claims 18–22, 43, 44, and 46–49 of the '783 patent are unpatentable. Ericsson has not met its burden of showing that claims 25, 26, 55–59, 62 and 63 are unpatentable.

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Related Proceedings

The ’783 patent is the subject of two IPR proceedings. The first such proceeding is the instant proceeding in which Petitioner Ericsson initially challenged claims 18–22, 25, 26, 43, 44, 46–49, 55–59, 62, and 63 of the ’783 Patent. The second such IPR Proceeding is *Ericsson Inc. v. Intellectual Ventures II LLC*, IPR2014-00921 (PTAB) in which the Petitioner Ericsson challenges claims 1–5, 23–24, 38–42, and 60–61 of the ’783 Patent.

The ’783 patent is a patent-in-suit in one or more of the following United States District Court patent infringement actions:

Intellectual Ventures I LLC v. AT&T Mobility LLC, 1-13-cv-01668 (D. Del. 2013).

Intellectual Ventures I LLC v. Leap Wireless Int’l, 1-13-cv-01669 (D. Del. 2013).

Intellectual Ventures I LLC v. Nextel Operations, 1-13-cv-01670 (D. Del. 2013).

Intellectual Ventures I LLC v. T-Mobile USA Inc., 1-13-cv-01671 (D. Del. 2013).

Intellectual Ventures I LLC v. United States Cellular, 1-13-cv-01672 (D. Del. 2013).

I. BACKGROUND

A. The ’783 Patent (Ex. 1001)

The ’783 patent, entitled *Hybrid Concatenated Codes and Iterative Decoding*, relates to error correcting codes. Ex. 1001, 1:12. The ’783 patent describes “Related Art” as being concerned with “[t]urbo codes,” which are “binary error-correcting codes built from the parallel concatenation of two recursive systematic convolutional codes and using a feedback decoder.” *Id*. at 1:14–17. The ’783 patent characterizes its disclosed invention as

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"encompass[ing] several improved turbo code apparatuses and methods." *Id*. at 1:66–67.

By way of explanation, the '783 patent presents Figure 1, depicted below, which is represented as "Prior Art":

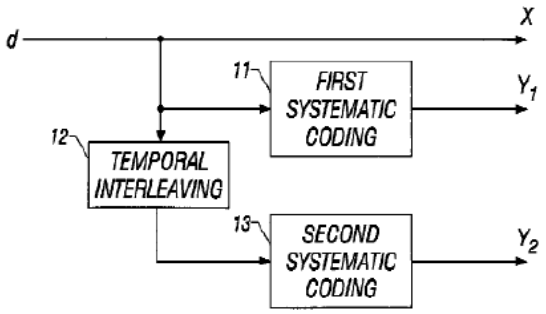

FIG. 1
(Prior Art)

As shown in the above-noted figure:

> Each source data element d to be coded is coupled to a first systematic coding module **11** and, through a temporal interleaving module **12**, to a second systematic coding module **13**. The coding modules **11** and **13** may be of any known systematic type, such as convolutional coders, that take into account at least one of the preceding source data elements in order to code the source data element d.

Id. at 1:27–34. The '783 patent further explains that "an important aspect of prior art turbo code encoders is that they transmit a data element X equal to input source data element d." *Id*. at 1:53–55.

Figure 5 of the '783 patent is reproduced below and depicts an embodiment according to the invention of that patent:

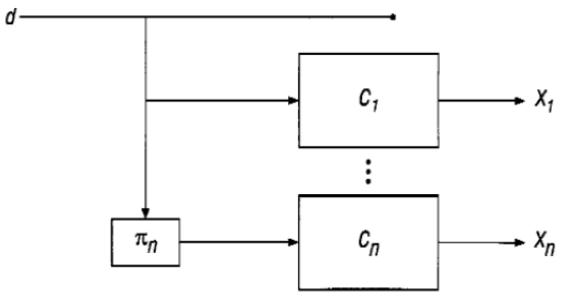

FIG. 5

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Figure 5 illustrates a diagram of a turbo encoder that includes similar features to those of the prior art, and describes that "encoded parity elements X_n," i.e., encoded data, are transmitted from coding modules C, with at least one interleaver π_n. *Id*. at 13:63–66. According to the '783 patent, the invention disclosed therein is distinguished from the prior art because the turbo encoder structure of the patent "outputs *only* encoded parity elements X_n from the coding modules C—the original data source elements d are not transmitted or stored." *Id*. (emphasis added.)

B. The Challenged Claims

Ericsson challenges claims 18–22, 25, 26, 43, 44, 46–49, 55–59, 62, and 63. Claims 18, 25, 43, 55, and 62 are independent claims. Claim 18 is illustrative of the subject matter of the challenged claims and is reproduced below:

> 18. A system for error-correction coding of a source of original digital data elements, comprising:
>
> (a) a first encoder, coupled to the source of original digital data elements, for generating a plurality of coded intermediate output elements derived from the original digital data elements;
>
> (b) at least one interleaver, each coupled to at least one of the plurality of coded intermediate output elements, for modifying the order of the coded intermediate output elements to generate respective interleaved output elements; and
>
> (c) at least one systematic recursive convolutional encoder, each coupled to at least one interleaver, for generating a set of coded output elements derived from the interleaved output elements from each coupled interleaver.

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