

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,
Petitioner,

v.

TQ DELTA, LLC,
Patent Owner.

Case IPR2016-01466
Patent 8,611,404 B2

Before SALLY C. MEDLEY, TREVOR M. JEFFERSON, and
MATTHEW R. CLEMENTS, *Administrative Patent Judges*.

CLEMENTS, *Administrative Patent Judge*.

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

I. INTRODUCTION

In this *inter partes* review, instituted pursuant to 35 U.S.C. § 314, Cisco Systems, Inc. (“Petitioner”) challenges claims 6, 10, 11, 15, 16, and 20 (“the challenged claims”) of U.S. Patent No. 8,611,404 B2 (Ex. 1001, “the ’404 patent”), owned by TQ Delta, LLC (“Patent Owner”). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has not shown by a preponderance of the evidence that the challenged claims are unpatentable. Patent Owner’s Motion to Exclude is *dismissed*.

A. Procedural History

Petitioner filed a Petition requesting an *inter partes* review of claims 6, 10, 11, 15, 16, and 20 of the ’404 patent. Paper 1 (“Pet.”). Patent Owner filed a Preliminary Response. Paper 6. On February 9, 2017, we instituted *inter partes* review of claims 6, 10, 11, 15, 16, and 20 of the ’404 patent as unpatentable under 35 U.S.C. § 103(a)¹ over Bowie,² Yamano,³ and ANSI T1.413.⁴ Paper 7 (“Inst. Dec.”), 26.

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102 and 103. Because the ’404 patent has an effective filing date before the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

² U.S. Patent No. 5,956,323; issued Sept. 21, 1999 (Ex. 1005) (“Bowie”).

³ U.S. Patent No. 6,075,814; issued June 13, 2000 (Ex. 1006) (“Yamano”).

⁴ *Network and Customer Installation Interfaces – Asymmetric Digital Subscriber Line (ADSL) Metallic Interface*, AMERICAN NATIONAL STANDARDS INSTITUTION (ANSI) T1.413-1995 STANDARD (Ex. 1007) (“ANSI T1.413”).

Thereafter, Patent Owner filed a Patent Owner Response (Paper 11, “PO Resp.”), to which Petitioner filed a Reply (Paper 14, “Reply”). Pursuant to an Order (Paper 21), Patent Owner filed a listing of alleged statements and evidence in connection with Petitioner’s Reply it deemed to be beyond the proper scope of a reply. Paper 22. Petitioner filed a response to Patent Owner’s listing. Paper 27.

We held a hearing on November 8, 2017, and a transcript of the hearing is included in the record. Paper 33 (“Tr.”).

B. Related Proceedings

The parties indicate that the ’404 patent is the subject of several district court cases. Pet. 1; Paper 3, 2–3.

C. The ’404 patent (Ex. 1001)

The ’404 patent discloses a method and apparatus for establishing a power management sleep state in a multicarrier system. Ex. 1001, 1:31–33. The ’404 patent discloses an asynchronous digital subscriber loop (ADSL) system having a first transceiver located at the site of a customer’s premises (“CPE transceiver”) and a second transceiver located at the local central telephone office (“CO transceiver”). *Id.* at 3:62–67. The transceivers include a transmitter section for transmitting data over a digital subscriber line and a receiver section for receiving data from the line. *Id.* at 4:14–17. The transceivers further include a clock, controller, frame counter, and a state memory. *Id.* at 4:58–5:15. Typically, data is communicated in the form of a sequence of data frames, sixty-eight frames for ADSL, followed by a synchronization frame. *Id.* The sixty-nine frames comprise a “superframe.” *Id.*

The power down operation of the CPE transceiver begins on receipt of a power-down indication. *Id.* at 6:27–30. The CPE transceiver responds to the power down indication by transmitting to the CO transceiver an “Intend to Enter Sleep Mode” notification. *Id.* at 6:39–42. The CO transceiver responds by transmitting an “Acknowledge Sleep Mode” notification to the CPE transceiver, and the CPE transceiver transmits an “Entering Sleep Mode” notification to the CO transceiver. *Id.* at 6:52–65. The CO transceiver detects the notification and transmits its own “Entering Sleep Mode” notification. *Id.* at 6:65–67. The CO transceiver stores its state in its own state memory corresponding to the state memory of the CPE transceiver. *Id.* at 6:67–7:2. “The CO transceiver continues to advance the frame count and the superframe count during the period of power-down in order to ensure synchrony with the remote CPE transceiver when communications are resumed.” *Id.* at 7:9–12. The CO transceiver further continues to monitor the subscriber line for an “Exiting Sleep Mode” notification, and the CPE transceiver transmits this signal when it receives an “Awaken” indication. *Id.* at 7:57–64. In response to the “Awaken” signal, CPE transceiver retrieves its stored state from state memory and restores full power to its circuitry. *Id.* at 7:64–66. CO Transmitter detects “Exit Sleep Mode” notification and restores its state and power. *Id.* at 8:1–4.

D. Illustrative Claim

Petitioner challenges claims 6, 10, 11, 15, 16, and 20 of the ’404 patent. Pet. 22–58. Claims 6, 11, and 16 are independent claims. Claim 6 is illustrative of the claims at issue and is reproduced below:

6. An apparatus comprising a transceiver operable to:
receive, in a full power mode, a plurality of superframes,

wherein the superframe comprises a plurality of data frames followed by a synchronization frame;

receive, in the full power mode, a synchronization signal;
transmit a message to enter into a low power mode;

store, in a low power mode, at least one parameter associated with the full power mode operation wherein the at least one parameter comprises at least one of a fine gain parameter and a bit allocation parameter;

receive, in the low power mode, a synchronization signal;
and

exit from the low power and restore the full power mode by using the at least one parameter and without needing to reinitialize the transceiver.

Ex. 1001, 10:29–43.

II. ANALYSIS

A. Claim Construction

We interpret claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *see Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142–46 (2016). Under the broadest reasonable construction 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).

1. “store/storing, in a/the low power mode”

In our Decision on Institution, we construed “store/storing in a/the low power mode” to mean “maintaining in memory while in a reduced power consumption mode.” Inst. Dec. 6–7. Neither party addressed this

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