

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMERICAN MEGATRENDS, INC., MICRO-STAR INTERNATIONAL
CO., LTD., MSI COMPUTER CORP., GIGA-BYTE TECHNOLOGY, CO.,
LTD., AND G.B.T., INC.,

Petitioner,

v.

KINGLITE HOLDINGS INC.,
Patent Owner.

Case IPR2015-01132
Patent 6,523,123 B2

Before GLENN J. PERRY, BRIAN J. McNAMARA, and
BARBARA A. PARVIS, *Administrative Patent Judges*.

PARVIS, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

American Megatrends, Inc., Micro-Star International Co., Ltd., MSI
Computer Corp., Giga-Byte Technology Co., Ltd., and G.B.T., Inc.
(collectively “Petitioner”) filed a Petition and a Corrected Petition (Paper 9,

“Pet.”)¹ to institute an *inter partes* review of claims 1–13 (the “challenged claims”) of U.S. Patent No. 6,523,123 B2 (Ex. 1001, “the ’123 Patent”). In support of its positions, Petitioner cites to the Declaration of Dr. Marc Levitt (Ex. 1013). On November 10, 2015, we entered a Decision to Institute a trial (Paper 14, “Dec. to Inst.”) on the following challenges to patentability of the claims:

Reference(s)	Basis	Claims challenged
Published European Patent Application No. 0 632 360 A1 (“Weiser”) (Ex. 1010)	§ 102(b)	1, 4, 6, 8, 10, and 12
U.S. Patent No. 6,081,901 (“Dewa”) (Ex. 1009) and Weiser	§ 103(a)	1, 4–8, 10, 12, and 13
Weiser, ² Dewa, and APM ³	§ 103(a)	2, 3, 9, and 11

Kinglite Holdings Inc. (“Patent Owner”) filed a Patent Owner Response (Paper 23, “PO Resp”). In support of its positions, Patent Owner cites to the Declaration of Dr. John Levy. Ex. 2011. Petitioner filed a Reply (Paper 29, “Pet. Reply”). Petitioner also filed a Motion to Exclude the deposition transcript of Dr. Levitt (Paper 30, “Motion to Exclude”), which Patent Owner opposed (Paper 33, “Oppn. Motion to Exclude”).

¹ Unless otherwise noted, petition citations herein are to the Corrected Petition (Paper 9).

² Although the Petition indicates that claims 2, 3, 9, and 11 are challenged on the basis of Dewa and APM (Pet. 13, 36), we note that Petitioner also relies on Weiser in its contentions (*id.* at 41).

³ INTEL CORPORATION & MICROSOFT CORPORATION, ADVANCED POWER MANAGEMENT (APM) BIOS INTERFACE SPECIFICATION 1–72 (1996) (“APM”) (Ex. 1004).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). We base our decision on the preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). Having reviewed the arguments of the parties and the supporting evidence, for the reasons set forth below, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 1–13 of the '123 Patent are unpatentable.

B. Related Proceedings

Petitioner and Patent Owner identify, as related proceedings, lawsuits in the United States District Court for the Central District of California captioned *Kinglite Holdings Inc. v. Giga-Byte Tech. Co. Ltd.* Case Number 1:14-cv-04989 and *Kinglite Holdings Inc. v. Micro-Star Int'l Co. Ltd.*, Case Number 1:14-cv-03009. Pet. 4; Paper 11.

C. The '123 Patent

The '123 Patent relates to providing intelligent power management (IPM) in processor-based systems. Ex. 1001, 1:14–17. In particular, intelligent power management is provided by determining if system accesses of a power-managed device are occurring too quickly or too slowly. *Id.* at 2:45–48. According to the '123 Patent, a profile identification (ID) provides the operational mode of the managed device. *Id.* at 6:39–40. If the profile ID indicates that the device is providing word processing or presentation services, the device clock is set to a fraction of the full operational speed of the managed device. *Id.* at 6:44–47. If the profile ID indicates that the device is providing spreadsheet services, the operational speed is set to the full operational speed of the managed device. *Id.* at 6:51–58.

D. Illustrative Claim

Of the challenged claims, claims 1, 8, and 10 are independent. Each of claims 2–7, 9, and 11–13, depends, directly or indirectly, from claim 1, 8, or 10. Independent claim 1 is illustrative and is reproduced below (*id.* at 7:34–49).

1. A power management apparatus for a circuit in a processor-based system, comprising:
 - a memory to store instruction sequences by which the processor-based system is processed, said stored instruction sequences to execute separately from an application program that is using said circuit; and
 - a processor coupled to the memory, wherein the stored instruction sequences cause the processor to:
 - (a) determine an operational mode of the circuit, where said operational mode indicates an application type of the application program that is using said circuit; (b) operate the circuit at one of a first predetermined speed and a second predetermined speed in response to the operational mode of the circuit, said first predetermined speed being slower than the second predetermined speed.

E. Claim Construction

1. Legal Standard

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to 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 (upholding the use of the broadest reasonable interpretation standard as the claim construction standard to be applied in an *inter partes* review proceeding). Consistent with the rule of broadest reasonable interpretation, claim terms also are generally 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. See *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Only terms which are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

2. *Decision to Institute*

In the Decision to Institute, we determined the broadest reasonable interpretation of the four following terms: “operational mode,” “circuit,” “an application type of an application program,” and “selected from one of a word processing service, a presentation service and a spreadsheet service.” Dec. to Inst. 5–9.

Three of the terms we construed are within a single phrase in each of the independent claims, i.e., “an operational mode of the circuit, where said operational mode indicates an application type of the application program that is using said circuit,” recited in claim 1 and commensurately recited in independent claims 8 and 10. Neither party disputes expressly the constructions of “operational mode,” “circuit,” or “an application type of an application program.” PO Resp. 7–11; Pet. Reply 3–5. Patent Owner’s anticipation contentions, however, suggest a more limited construction of “operational mode of the circuit.” PO Resp. 8–10. We consider these contentions, as well as Petitioner’s reply, below.⁴

⁴ For completeness, we note that Patent Owner no longer contends that we should adopt a determination that was made in one of the related

The fourth term construed in our Decision to Institute, i.e., “selected from one of a word processing service, a presentation service and a spreadsheet service,” is recited in dependent claims 5, 7, and 13. In its Patent Owner Response, Patent Owner does not dispute our construction or argue that this recitation distinguishes dependent claims 5, 7, and 13 from the art of record, but instead relies on arguments presented for other claims. PO Resp. 20, 21. We discern no reason, based on the complete record now before us, to change our determination (Dec. to Inst. 9) that the broadest reasonable interpretation of “selected from one of,” as recited in dependent claims 5, 7, and 13, is that the subsequent list reflects alternatives, i.e., one of a word processing service, a presentation service, or a spreadsheet service.

3. *“an operational mode of the circuit, where said operational mode indicates an application type of the application program that is using said circuit”*

In its Patent Owner Response, with respect to “operational mode,” Patent Owner contends, “this limitation pertains to the operational mode **of the circuit.**” Prelim. Resp. 9. Patent Owner additionally contends “it is wrong to conclude that, if a task [e.g., mail delivery] is permitted to work slowly, then the associated circuit condition must be a slow operating condition” and “[s]imilarly, even if a task is not of low priority, the operating condition of the circuit may still go slow.” *Id.* at 10.

proceedings in the United States District Court for the Central District of California regarding the terms “an operational mode of the circuit that indicates.” PO Resp. 7–11; Tr. 48:8–22. Patent Owner also acknowledges that the Order re Claim Construction issued in that related district court proceeding previously referred to (Paper 13, 16–17) was not submitted in this proceeding for our consideration (Tr. 48:20–22).

Patent Owner’s contentions above emphasizing “**of the circuit**” (*id.* at 9) and correlating circuit condition with speed (*id.* at 10), suggest that Patent Owner contends that the “operational mode” must be a physical setting, such as clock speed. Patent Owner further contends that a label “cannot be both the operational mode of the circuit and an indication of the application program type—it can only be one or the other, unless one of these two limitations renders the other improperly superfluous.” *Id.* at 7, 8.

Petitioner contends that the clause “where said operational mode indicates an application type” “is “merely a consequence that flows from the determination of the operational mode.” Pet. Reply 4. Petitioner also contends “[w]hile Petitioners do not take issue with [the Board’s] construction, Petitioners note that this construction is based on extrinsic evidence of an IEEE dictionary definition, not the 123 Patent’s Specification.” *Id.* Petitioner, more specifically, contends “[t]he 123 Patent’s specification provides no helpful answer of what an ‘operational mode is’ other than a brief explanation of its relationship to a Profile ID.” *Id.* (citing Ex. 1001, 6:37–44).

We first turn to Patent Owner’s suggestion that the “operational mode” must be a physical setting, such as clock speed (PO Resp. 7–10). We find that each of the independent claims recite operating the circuit at either a first predetermined speed or a second predetermined speed “in response to the operational mode of the circuit.” Accordingly, we disagree with Patent Owner’s suggestion that the “operational mode of the circuit” itself must be a physical setting, such as clock speed.

Additionally, Patent Owner does not point to intrinsic or extrinsic evidence that persuades us that the broadest reasonable interpretation of “an

operational mode of the circuit” must specify expressly the particular clock speed at which the circuit operates. Contrary to Patent Owner’s contentions, the ’123 Patent Specification refers to adjusting clock speeds by “quer[ying] if the profile ID of the device indicates that the device is providing word processing or presentation services” (Ex. 1001, 6:42–44) or “determin[ing] if the profile ID of the device indicates that it is involved in spreadsheet services” (*id.* at 6:53). The ’123 Patent Specification describes that “[t]he profile ID provides the operational mode of the managed device.” *Id.* at 6:39–40. The speed settings, e.g., “max” and “min” (*id.* at 6:45, 6:54) correspond to the recitations of the predetermined speeds in the claims, e.g., “a first predetermined speed” and “a second predetermined speed.” Patent Owner does not persuade us to limit the term such that it does not encompass the only examples in the ’123 Patent Specification identified to us by the parties.

Next we turn to Patent Owner’s second contention that the prior art teaching of a label “cannot be both the operational mode of the circuit and an indication of the application program type—it can only be one or the other, unless one of these two limitations renders the other improperly superfluous.” Prelim. Resp. 7, 8. We agree with Petitioner (Pet. Reply 4) that the clause “where said operational mode indicates an application type” is “a consequence that flows from the determination of the operational mode.” Petitioner’s contention is consistent with the full recitation, i.e., “determine an operational mode of the circuit, *where* said operational mode indicates an application type of the application program that is using said circuit” (emphasis added), as recited in claim 1, and as commensurately recited in claims 8 and 10.

Petitioner's contention is also consistent with the '123 Patent Specification. We agree with Petitioner (Pet. Reply 4) that the '123 Patent Specification provides only a brief explanation relating to "operational mode." Because the '123 Patent Specification does not define "mode" or "type," in the Decision to Institute, we looked to plain and ordinary meanings of these terms set forth in the IEEE Dictionary and found that those meanings are consistent with the use of the terms in the Specification. Dec. to Inst. 6–8.⁵ We particularly considered portions of the '123 patent Specification similar to those identified by Petitioner. *Compare* Dec. to Inst. 7 (citing Ex. 1001, 6:39–44, 53) *with* Pet. Reply 4 (citing Ex. 1001, 6:37–44); Pet. 9–10 (citing Ex. 1001, 6:40–44, 52–54, Fig. 7). Patent Owner has not identified any other portion of the '123 Patent Specification that Patent Owner contends reflects on the broadest reasonable interpretation of "an operational mode of the circuit, where said operational mode indicates an application type of the application program that is using said circuit," as recited in claim 1 or as commensurately recited in claims 8 and 10. *See e.g.*, PO Resp. 7–11.

The portion of the '123 Patent Specification relating to "operational mode" is reproduced below (Ex. 1001, 6:37–58 (emphasis added)):

⁵ A dictionary definition can be useful in ascertaining the way in which one of ordinary skill in the art would understand the claim term. *See Starhome GmbH v. AT&T Mobility LLC*, 743 F.3d 849, 856 (Fed. Cir. 2014).

Beginning from a start state, the process 400 proceeds to process block 402, where it reads the profile identification (ID) of the managed device. *The profile ID provides the operational mode of the managed device.* The process 400 then proceeds to decision block 404, where it queries *if the profile ID of the device indicates that the device is providing word processing or presentation services.* If so, the process sets the device clock to min, which is a fraction of the full operational speed of the managed device. In one example, “min” = 25% of the full operational speed of the managed device. The process then returns to the main process 100 flow.

If, at decision block 404, the process determines that the profile ID of the managed device is neither word processing nor presentation services, it proceeds to decision block 408, where it determines *if the profile ID of the device indicates that it is involved in providing spreadsheet services.* If so, the process 400 sets the device clock to max, as shown in process block 41, which is a predetermined percentage of the full operational speed of the managed device. In one embodiment, “max” is 100% of the full operational speed of the managed device.

The use of the term “operational mode” above is consistent with Petitioner’s contention that the clause “where said operational mode indicates an application type” is “merely a consequence that flows from the determination of the operational mode” (Pet. Reply 4). In particular, the ’123 Patent Specification provides that “the profile ID of the device indicates that the device is providing word processing or presentation services” (Ex. 1001, 6:41–44) and “the profile ID of the device indicates that it is involved in spreadsheet services” (*id.* at 6:53). According to the ’123 Patent Specification, that profile identification (ID) “provides the operational mode of the managed device.” *Id.* at 6:40 (emphasis added). We, therefore, find that Petitioner’s contention is consistent with the broadest reasonable interpretation of “operational mode of the circuit” encompassing these exemplary operational modes in the ’123 Patent.

Accordingly, we discern no reason, based on the complete record now before us, to change our determinations in our Decision to Institute as follows: (1) “operational mode” means “operating condition”; (2) “circuit” means “an arrangement of interconnected electronic components that can perform specific functions”; and (3) “an application type of an application program” means “a category to which an application program belongs.” Dec. to Inst. 6–8. Also, as noted above, we agree with Petitioner (Pet. Reply 4) that the clause “where said operational mode indicates an application type” “is a consequence that flows from the determination of the operational mode.”

Additionally, we discern no reason, based on the complete record now before us, to change our determination in our Decision to Institute that the claims should be understood as encompassing the examples in the ’123 Patent Specification. Dec. to Inst. 7, 8. We again particularly note that the ’123 Patent describes that “the profile ID of the device indicates that the device is providing word processing or presentation services” (Ex. 1001, 6:41–44) and “the profile ID of the device indicates that it is involved in spreadsheet services” (*id.* at 6:53), where “[t]he profile ID provides the operational mode of the managed device” (*id.* at 6:39–40).

II. ANALYSIS

A. Overview

Anticipation, under 35 U.S.C. § 102, requires a lack of novelty. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). To establish anticipation, each and every element in a claim, arranged as is recited in the claim, must be found in a single prior art reference. *Id.*

Additionally, a patent claim is unpatentable if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. 35 U.S.C. § 103(a). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art;⁶ and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

B. Anticipation by Weiser

Petitioner contends that each of claims 1, 4, 6, 8, 10, and 12 of the ’123 Patent is anticipated by Weiser. Pet. 17–25.

1. Weiser

Weiser relates to a method for dynamically varying the power consumption of computer circuits under program control. Ex. 1010, Abstract. Weiser describes that the power level may be selected based on the operation or task to be performed. *Id.* at 4:32–36. For example, some tasks may be labeled “background” or not time critical, such as a mail

⁶ Petitioner’s declarant proposes a definition for a person of ordinary skill in the art. Ex. 1013 ¶ 17. Patent Owner does not challenge Petitioner’s declarant’s proposed definition and does not propose an alternative. *See generally* PO Resp; Ex. 2011. We adopt Petitioner’s definition as our own.

delivery process. *Id.* at 4:41–43. Weiser describes that the minimum clock speed is chosen for low priority tasks. *Id.* at 6:15–17. By decreasing the frequency of clock signals in “slow mode,” power consumption is reduced. *Id.* at 2:6–8.

2. Independent Claims 1, 8, and 10

We discuss independent claims 1, 8, and 10 together as claims 1 and 10 recite a power management apparatus and a computer-readable apparatus, respectively, for storing an instruction sequence, which when executed perform steps similar to those recited in claim 8.

a. The Petition

Claim 1 recites the preamble “[a] power management apparatus for a circuit in a processor-based system,” and claims 8 and 10 include similar recitations. Regarding the preamble, Petitioner contends “Weiser describes achieving power management using a power control subsystem 22 of a computer subsystem 20.” Pet. 17 (citing Ex. 1010, Fig. 1, items 20 and 22). Petitioner additionally contends that computer subsystem 20 “includes computer circuits.” *Id.* (citing Ex. 1010, Abstract). Petitioner also points to the Abstract describing Weiser as follows: “[a] method for dynamically varying the power consumption of *computer circuits (20) under program control.*” *Id.* at 21 (citing Ex. 1010, Abstract) (emphasis added).

Claim 1 also recites “a memory to store instruction sequences by which the processor-based system is processed, said stored instruction sequences to execute separately from an application program that is using said circuit; and a processor coupled to the memory” (“the instruction sequence limitation”), and claims 8 and 10 include similar limitations. In addition to again relying on Weiser’s disclosure above (Pet. 21), Petitioner

contains “Weiser’s power management is described in FIG. 3, which explains that it is achieved by program code.” Pet. 17 (citing Ex. 1010, 6:5–13 (describing “code”)). Petitioner also relies on the testimony of Dr. Levitt. *Id.* (citing Ex. 1013 ¶¶ 60, 61, 63); *see also id.* at 21–22 (citing Ex. 1013 ¶¶ 59, 61). Dr. Levitt testifies that Weiser discloses that the power control subsystem (22) includes instruction sequences stored in memory. Ex. 1013 ¶¶ 60, 62 (citing Ex. 1010, 3:19–23, 9:7–12). Dr. Levitt also testifies that a processor executes these instruction sequences and the instruction sequences are stored in memory. *Id.* ¶¶ 61, 63 (citing Ex. 1010, 6:5–13, Fig. 3). Dr. Levitt further testifies that Weiser discloses “various application programs,” which are “separately executed from” the power management code. *Id.* ¶ 59 (citing Ex. 1010, 2:9–13, 4:36–52, 6:5–13, Fig. 1).

Claim 1 additionally recites “wherein the stored instruction sequences cause the processor to: (a) determine an operational mode of the circuit, where said operational mode indicates an application type of the application program that is using said circuit” (“the operational mode indicates an application type limitation”), and claims 8 and 10 include similar limitations. For this limitation, Petitioner points to Weiser’s description of labeling tasks as “background” or “not time critical” and organizing tasks according to priority levels, such as high or low priority. Pet. 18, 19 (citing 1010, 3:52–55, 4:37–58, 6:5–13, Figs. 3, 8); *see also id.* at 22, 23 (citing Ex. 1010, 4:36–58). In support of its positions, Petitioner relies on the testimony of Dr. Levitt. *Id.* at 18, 19, 23 (citing Ex. 1013 ¶¶ 59, 64, 65, 67). Dr. Levitt testifies that determining an operational mode of the circuit, where said operational mode indicates an application type of the application program

that is using said circuit “is a basic premise of Weiser.” Ex. 1013 ¶ 64 (citing Ex. 1010, Abstract). Dr. Levitt also testifies that Weiser discloses labeling tasks “as ‘background,’ ‘not-time-critical,’ a ‘mail delivery process,’” and “tasks that have ‘scheduled time to complete[’] ‘high priority’ tasks, and low priority tasks” and that this disclosure in Weiser “exemplifies labeling services, which is the preferred embodiment of the 123 Patent in Figure 7.” *Id.* ¶ 65 (citing Ex. 1010, 4:36–52, Fig. 7).

Claim 1 further recites that the stored instruction sequences cause the processor to “(b) operate the circuit at one of a first predetermined speed and a second predetermined speed in response to the operational mode of the circuit, said first predetermined speed being slower than the second predetermined speed” (“the predetermined speed limitation”), and claims 8 and 10 include similar limitations. Regarding the predetermined speed limitation, Petitioner contends that Weiser discloses “lower[ing] the CPU clock speed (and voltage) for low priority tasks” and “var[ying] the clock speed ‘depending on the task to be performed.’” Pet. 20 (citing Ex. 1010, 3:19–24, 4:51–58, 6:14–18); *see also id.* at 23 (citing Ex. 1010, 3:19–24, 6:14–18; Ex. 1013 ¶¶ 66–69). Petitioner additionally contends, in reliance on the testimony of Dr. Levitt, that “Weiser discloses the first predetermined speed (min clock 88) being slower than the second predetermined speed (max clock 86).” *Id.* (citing Ex. 1010, Fig. 3; Ex. 1013 ¶¶ 66, 68, 69).

b. The Patent Owner Response and Petitioner Reply

Regarding the preamble and the instruction sequence limitation, Petitioner’s contentions in the Petition and supporting testimony of Dr. Levitt are well-supported by and consistent with the disclosure of Weiser identified therein. We give Dr. Levitt’s testimony substantial weight (37

C.F.R. § 42.65) because his testimony is consistent with the evidence cited therein, such as Weiser's disclosure of power control subsystem (22)'s program control (e.g., by code of Figure 3) of the power consumption of the computer circuit (20). 1013 ¶¶ 59–63 (citing Ex. 1010, 2:9–13, 3:19–23, 4:36–52, 6:5–13, 9:7–12, Figs. 1, 3). Additionally, these contentions are not disputed by the Patent Owner in the Patent Owner Response. PO Resp. 6–12. Accordingly, we are persuaded that Petitioner has shown sufficiently that Weiser discloses the preamble and the instruction sequence limitation recited in the independent claims.

Similarly, Petitioner's contentions in the Petition and supporting testimony of Dr. Levitt regarding the operational mode indicates an application type limitation are well-supported and consistent with the disclosure of Weiser identified therein. Patent Owner disputes that Weiser discloses this limitation.

As an initial matter, Patent Owner contends that Petitioner relies on Dr. Levitt's testimony, but his testimony should be ignored. PO Resp. 4. More specifically, Patent Owner contends, "Petitioners rely extensively upon the opinions of their expert, Dr. Marc Levitt," but "Dr. Levitt's opinions are internally inconsistent, and, in light of such inconsistencies, statements made by Dr. Levitt are simply wrong." *Id.*

As an example of a purported inconsistent statement, Patent Owner contends "Dr. Levitt states in his declaration that, in the '123 patent: 1) operational mode does not indicate an application type; and 2) the profile ID of the managed device indicates a service provided by the managed device." *Id.* (citing Ex. 1013 ¶ 38). According to Patent Owner, "[b]oth of those statements cannot be true if an 'application type' and a 'service' are

the same thing.” *Id.* Patent Owner then points to various portions of Dr. Levitt’s testimony that Patent Owner asserts show Dr. Levitt equating “application type” and “service.” *Id.* (citing Ex. 2010, 14:25–15:7, 15:16–16:19, 21:19–22:6, 45:11–25, 47:6–13).

We do not agree with Patent Owner’s characterization of Dr. Levitt’s declaration testimony. Contrary to Patent Owner’s contention that Dr. Levitt’s testimony is inconsistent (PO Resp. 4), in his Declaration, Dr. Levitt testifies regarding lack of support in the original application for an amendment to the claims, but he acknowledges that the claims have been amended to recite that the operational mode indicates an application type. For instance, Dr. Levitt testifies “the 123 Patent does not support the idea that an operational mode indicates an application type,” but despite “this lack of support, the 123 Patent ultimately claimed, as a result of prosecution history amendments made long after the original application leading to the 123 Patent was ever filed determining an operating mode (that indicates an application type).” Ex. 1013 ¶¶ 38, 39; *see also id.* ¶ 37 (“The independent claims (claims 1, 8, and 10) cover” the concept of “determining an operational mode of a circuit where the operational mode indicates an application type of the application program.”) Petitioner presents this testimony as part of an overview of the ’123 Patent and the prosecution history, including allowance because the challenge claims were amended to recite determining an operational mode that indicates an application type. Pet. 2–3 (citing Ex. 1013 ¶ 37); *see also id.* at 9 (citing Ex. 1002, 60–72) (requesting, for example, that application claim 27 be amended as follows: “said operational mode to correspond to an application type for which said circuit is being used”).

Patent Owner's mischaracterization is the basis for all the inconsistencies argued by Patent Owner. PO Resp. 4. In other words, Patent Owner's contention that "[b]oth of those statements [1) operational mode does not indicate an application type; and 2) the profile ID of the managed device indicates a service provided by the managed device] cannot be true" (*id.*) is based on the mischaracterization that Dr. Levitt testified in his declaration that an "operational mode does not indicate an application type" (*id.*). Instead, as explained above, Dr. Levitt's actual testimony is that the claims recite that the operational mode indicates an application type (Ex. 1013 ¶¶ 37–39). Dr. Levitt's testimony that the profile ID of the managed device indicates a service provided by the managed device (*id.* ¶ 38), therefore, is consistent with Dr. Levitt's actual testimony that the claims recite that the operational mode indicates an application type. Furthermore, Dr. Levitt's actual declaration testimony is consistent with his deposition testimony. For instance, during his deposition, Dr. Levitt testified that "a lot of times 'service' and 'application' are used interchangeably" (Ex. 2010, 16:18–19) and this testimony is consistent with his other deposition testimony, including that identified by Patent Owner (PO Resp. 4 (citing Ex. 2010, 14:25–15:7, 15:16–16:19, 21:19–22:6, 45:11–25, 47:6–13)).

Furthermore, as Petitioner contends (Pet. Reply 2 (citing Ex. 1016, 56:25–57:19)), Patent Owner's expert, Dr. Levy, testifies that he "didn't read" Dr. Levitt's declaration and did not opine on whether Weiser anticipates the claims. Ex. 1016, 57:9–19. Patent Owner's contentions regarding the inconsistencies in Dr. Levitt's testimony are attorney argument, not supported by the testimony of Dr. Levy.

Despite the counter-arguments in the Patent Owner Response, and the evidence cited therein, which we also have considered, we give Dr. Levitt's testimony substantial weight (37 C.F.R. § 42.65) because we find that his testimony is consistent with the evidence cited therein. For instance, we find that Dr. Levitt's testimony (Ex. 1013 ¶¶ 64, 65, 67) is consistent with Weiser's disclosure of task labels, such as "background," "not time critical," "high priority," and "medium priority"; applications, such as a mail delivery process; and adjustments of speed based on priority. Ex. 1010, Abstract, 4:36–52, Fig. 7.

We turn to Patent Owner's other arguments (PO Resp. 7–11) regarding whether the operational mode indicates an application type limitation. Patent Owner presents three additional arguments: (1) Weiser's labeling categories are merely categories of tasks, and do not involve the operating conditions of the circuit (*id.* at 7); (2) Weiser's labels cannot be both the operational mode of the circuit and an application type without rendering one of the two claim limitations superfluous (*id.* at 7–8); and (3) Petitioner conflates labeling a task with the operating condition of the circuit, which may be dictated by other factors, such as recent idle time (*id.* at 9–10).

Patent Owner's contentions above are interrelated. We address each of the contentions separately to discuss their subtle distinctions.

We first turn to Patent Owner's contention that Weiser's labeling categories are merely categories of tasks, and do not involve the operating conditions of the circuit (PO Resp. 7). Patent Owner, more specifically, contends Petitioner "infer[s] the existence of the operational mode" by pointing to "the current task." *Id.* at 8. Patent Owner also contends "this

limitation pertains to the operational mode **of the circuit**,” and “Weiser, on the other hand . . . find[s] an operation or task to be performed.” *Id.* at 9 (emphasis in original). To the extent that Patent Owner emphasizes “of the circuit” is to imply that the “operational mode” must be a physical setting, such as clock speed, Patent Owner’s contentions are not commensurate with the scope of the claim, as discussed above with respect to claim construction.

Additionally, Patent Owner fails to recognize that Weiser’s disclosure relied upon by Petitioner is the same as the only example in the ’123 Patent Specification identified to us by the parties. We noted above that the ’123 Patent describes that “the profile ID of the device indicates that the device is providing word processing or presentation services” (Ex. 1001, 6:41–44) and “the profile ID of the device indicates that it is involved in spreadsheet services” (*id.* at 6:53), where “[t]he profile ID provides the operational mode of the managed device” (*id.* at 6:39–40).

For this limitation, Petitioner points to Weiser’s description of labeling tasks as “background” or “not time critical” and organizing tasks according to priority levels, such as high or low priority. Pet. 18, 19, 22, 23 (citing 1010, 3:52–55, 4:36–58, 6:5–13, Figs. 3, 8); *see also* Pet. Reply 3, 4 (citing Ex. 1010, Fig. 3). Like the ’123 Patent Specification, Weiser’s operational modes of the circuit similarly reflect categories, e.g., “background,” “not time critical,” “tasks hav[ing] a scheduled time to complete,” “high priority,” and medium priority (Ex. 1010, 4:36–58). Also, like the ’123 Patent Specification, Weiser’s operating conditions reflect the type of application program using the circuit, “[a] mail delivery process, for example, must eventually complete, but it can afford to take longer without

significantly affecting the user's perception." *Id.* at 4:42–46. Additionally, because his testimony is consistent with the evidence cited therein, we give substantial weight to Dr. Levitt's testimony that this disclosure in Weiser "exemplifies labeling services, which is the preferred embodiment of the 123 Patent in Figure 7." Ex. 1013 ¶ 65 (citing Ex. 1010, 4:36–52, Fig. 7).

Second, we turn to Patent Owner's contention that Weiser's labels cannot be both the operational mode of the circuit and an application type. Again, Patent Owner's contention is not commensurate with the scope of the claims. As discussed above with respect to claim construction, we agree with Petitioner (Pet. Reply 4) that the clause "where said operational mode indicates an application type" "is a consequence that flows from the determination of the operational mode." Petitioner's contentions are consistent with the full recitation, i.e., "determine an operational mode of the circuit, *where* said operational mode indicates an application type of the application program that is using said circuit" (emphasis added), as recited in claim 1, and as commensurately recited in claims 8 and 10.

Weiser's operating conditions indicate an application type of the application program that is using the circuit. For instance, in the disclosure discussed above identified by Petitioner, Weiser describes that "[s]ome tasks may be labeled 'background' or not time critical" and provides "[a] mail delivery process, for example, must eventually complete, but it can afford to take longer without significantly affecting the user's perception of the performance of the machine." Ex. 1010, 4:41–46. Accordingly, we find that Weiser's labels read on the entire recitation, i.e., an operational mode of the circuit where the operational mode indicates an application type of the

application program that is using the circuit, without rendering any recitation improperly superfluous.

Patent Owner's third argument that Petitioner conflates labeling a task with the operating condition of the circuit, which may be dictated by other factors, such as recent idle time (PO Resp. 9–11), also is not commensurate with the scope of the claim. As discussed above, we decline to adopt Patent Owner's suggestion, in part because the claims should be understood as encompassing the only examples in the '123 Patent Specification identified to us by the parties. We again note the examples in the '123 Patent, i.e., setting a clock to “min” based on a “quer[y] if the profile ID of the device indicates that the device is providing word processing or presentation services” (Ex. 1001, 6:42–44) and setting the clock to “max” “if the profile ID of the device indicates that it is involved in spreadsheet services” (*id.* at 6:53, 54), where “[t]he profile ID provides the operational mode of the managed device” (*id.* at 6:39–40 (emphasis added)). Thus, the operational mode of the circuit is, for example, an indicator that the circuit is providing word processing services, or in the alternative an indicator that the circuit is providing presentation services (*id.* at 6:42–44). The speed settings, e.g., “max” and “min” (*id.* at 6:45, 6:54), correspond to the recitations of the predetermined speeds, discussed below.

Furthermore, we do not agree with Patent Owner's characterization of Weiser's description of idle time. In particular, Patent Owner suggests that Weiser discloses a “slow” operating condition based on recent idle time, even though an application using the circuit is not of low priority. PO Resp. 10. However, Weiser's description that “perhaps the system might [] run slower” (Ex. 1010, 6:23), which is relied upon by Patent Owner (PO Resp.

10), pertains to Weiser's discussion of whether to "set the clock to the maximum clock speed" in the subsequent paragraph (*id.* at 6:19–40). Therefore, we do not agree with Patent Owner's characterization of this speed as "slow" (PO Resp. 10) and are not persuaded that Weiser's description of using recent idle time to slightly adjust clock speed undermines Petitioner's contentions.

Regarding the predetermined speed limitation, Patent Owner contends "Weiser does not disclose 'an operational mode of the circuit,' and it therefore cannot teach '*in response to the operational mode of the circuit.*'" PO Resp. 11. Patent Owner also again refers to the determination "based on various factors." *Id.* at 12 (citing Ex. 1010, 6:5–40).

Patent Owner's arguments are substantially similar to those discussed above with respect to the operational mode indicates an application type limitation, and we are not persuaded for the same reasons discussed above. Additionally, as Petitioner notes (Pet. 23), Weiser describes that "[i]f it is a low priority task, the minimum clock speed may be chosen by the step in box 88." Ex. 1010, 6:15–17. As Petitioner also correctly contends (Pet. 20; Pet. Reply 6), Figure 3 of Weiser describes a "Min" speed (item 88) and a "Max" speed (item 86), both of which are selected based on the operating mode. Ex. 1010, Fig. 3. Furthermore, because his testimony is consistent with the evidence cited therein, we give substantial weight to Dr. Levitt's testimony that Weiser describes varying speed depending on the task to be performed and that the varying speed, for example, may be either a first (slower) or second (faster) predetermined speed. Ex. 1013 ¶ 66–69 (citing Ex. 1010, 3:19–24, 4:4–5, 4:54–57, 6:15–18, Fig. 3).

c. Conclusion for Anticipation of Claims 1, 8, and 10

Petitioner's contentions and claim charts persuasively read all elements of each of claims 1, 8, and 10 onto the disclosure of Weiser. Additionally, for the reasons given above, including that we find that his testimony is consistent with the evidence cited therein, we give Dr. Levitt's testimony substantial weight (37 C.F.R. § 42.65). We determine that the record supports Petitioner's contentions and adopt Petitioner's contentions discussed above as our own. Despite the counter-arguments in the Patent Owner Response, and the evidence cited therein, which we also have considered, for the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 8, and 10 are anticipated by Weiser. For completeness, we note that our determination is the same with or without Dr. Levitt's testimony.

3. Dependent claims 4, 6, and 12

Each of claims 4 and 6 depends, directly, from claim 1, and claim 12 depends, directly, from claim 10.

a. The Petition

Each of claims 4 and 12 further recites that the "application type corresponds to a type of service." Claim 6 further recites that "the operational mode" indicates "a type of service" that is provided.⁷ For these

⁷ We note claim 6 recites "[t]he method of claim 1," but claim 1 recites "[a] power management apparatus." Ex. 1001, 7:34–35, 8:1. We see no reason, based on the complete record now before us, to change our determination in the Decision to Institute (Dec. to Inst. 15) that this is a typographical error and interpret claim 6 as reciting the power management apparatus of claim 1. *See Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1355 (Fed. Cir. 2003) (holding obvious errors in a claim can be corrected in construing

further recitations, Petitioner points to Weiser’s disclosure of a mail delivery process. Pet. 23, 25 (citing Ex. 1010, 4:42–43). In support of its positions, Petitioner (*id.*) also relies on Dr. Levitt’s testimony. *Id.* (citing Ex. 1013 ¶¶ 70, 72). Dr. Levitt testifies that “Weiser discloses a variety of tasks” and “[i]n the context of Weiser, these tasks are services and labeling tasks is analogous to labeling services.” Ex. 1013 ¶¶ 70, 72 (citing Ex. 1010, 4:36–52).

b. The Patent Owner Response and Petitioner Reply

Patent Owner’s contention that Dr. Levitt’s opinions should be ignored (PO Resp. 4) is based on testimony pertaining to “application type” and “services,” the latter of which is recited in only dependent claims, including claims 4, 6, and 12 discussed here. Our analysis and findings regarding the same argument discussed above with respect to the independent claims, as well as our determination to give Dr. Levitt’s testimony substantial weight, takes into account the record in its entirety, including the record as it pertains to the further recitations of dependent claims 4, 6, and 12. We particularly note that during his deposition, Dr. Levitt testified that “a lot of times ‘service’ and ‘application’ are used interchangeably” (Ex. 2010, 16:18–19), and we find that his testimony is consistent Weiser’s disclosure of a “mail delivery process” (Ex. 1010, 4:42–43), which was identified by Petitioner (Pet. 23 (citing Ex. 1010, 4:42–43)). Again, Dr. Levitt’s testimony is consistent with Weiser and, therefore, we give his testimony substantial weight (37 C.F.R. § 42.65).

the claim); *see also CBT Flint Partners, LLC v. Return Path, Inc.* 654 F.3d 1353, 1358 (Fed. Cir. 2011) (also holding obvious errors in a claim can be corrected in construing the claim).

We turn to Patent Owner's other contentions. Regarding claims 4 and 12 and Petitioner's identification of a "mail delivery process," Patent Owner contends it is a "problem" to have "a single feature satisfying all of these limitations." PO Resp. 13. Claims 4 and 12 do not require three separate indicators. Patent Owner acknowledged that no identifier other than the operational mode is needed. Tr. 43:20–24.

Dependent claims 4 and 12 simply recite that the "operational mode of the circuit" indicates an application type that also is a type of service. Again, Weiser's disclosure identified by Petitioner (Pet. 23, 25) is similar to the only example in the '123 Patent Specification identified by the parties. Like the exemplary services in the '123 Patent, i.e., "word processor or presentation services" (Ex. 1001, 6:43–44) and "spreadsheet services" (*id.* at 6:53), Weiser's exemplary disclosure of a "mail delivery process" (Ex. 1010, 4:41–43) is both an application program (i.e., mail application) and a service (i.e., mail delivery service). *See also* Pet. Reply 7 ("Assuming 'application type' is supported, the specification support is no more than a 'type of service,' which is described in Weiser "*e.g.*, labeling a mail delivery process.") Patent Owner's contention is similar to that discussed above with respect to the operational mode indicates an application type limitation and its construction, and we disagree with Patent Owner's contention for the same reasons.

Regarding claim 6, Patent Owner relies on its contentions with respect to claims 1 and 4, which are discussed above. Patent Owner additionally contends that Weiser "cannot disclose an 'instruction sequence' to determine the operational mode of the circuit" because "Weiser does not teach 'the operational mode of the circuit.'" PO Resp. 13. For the same reasons given

above with respect to independent claim 1, we are persuaded by Petitioner that Weiser discloses the operational mode of the circuit.

Regarding Patent Owner's contention pertaining to "instruction sequence," we further find that independent claim 1 recites "instruction sequences," and "the instruction sequence executing separately from the application program that is using said circuit," recited in claim 6, derives antecedent basis from this recitation in claim 1. Patent Owner's contention that "Petitioners point to no teaching" is conclusory and fails to take into account disclosure in Weiser identified by Petitioners, and the testimony of Dr. Levitt, discussed above. For example, as noted by Petitioner (Pet. 21 (citing Ex. 1010, Abstract, 6:5–13, Figs. 1–3; Ex. 1013 ¶¶ 59, 61), Weiser discloses with respect to Figure 3, "[t]his *code* may be simply added to an operating system" (Ex. 1010, 6:9–10 (emphasis added)). *See also* Pet. Reply 7 (citing Ex. 1010, 6:9–13) ("The disclosure of code meets the limitation of claim 6."). Additionally, Weiser discloses "[a] method for dynamically varying the power consumption of computer circuits (20) *under program control*." *Id.* at Abstract (emphasis added).

c. Conclusion for Anticipation of Claims 4, 6, and 12

Petitioner's contentions and claim charts persuasively read all elements of each of claims 4, 6, and 12 onto the disclosure of Weiser. Additionally, for the reasons given above, including that we find that his testimony is consistent with the evidence cited therein, we give Dr. Levitt's testimony substantial weight (37 C.F.R. § 42.65). We determine that the record supports Petitioner's contentions and adopt Petitioner's contentions discussed above as our own. Despite the counter-arguments in the Patent Owner Response, and the evidence cited therein, which we also have

considered, for the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 4, 6, and 12 are anticipated by Weiser. For completeness, we note that our determination is the same with or without Dr. Levitt's testimony.

C. Obviousness of Claims 1, 4–8, 10, 12, and 13 over Dewa and Weiser

Petitioner contends that each of claims 1, 4–8, 10, 12, and 13 of the '123 Patent is rendered obvious by the combined teachings of Dewa and Weiser. Pet. 45–47; *see also id.* at 17–36 (explaining why Petitioner contends claims 1, 4–8, 10, 12, and 13 are anticipated by each of Weiser and Dewa).

1. Dewa

Dewa relates to a computer system that variably controls the central processing unit (CPU) processing speed to manage power. Ex. 1009, 1:10–15. Dewa teaches determining CPU processing speed for software on the basis of speed data managed by the Operating System (OS). *Id.* at 5:61–64.

Dewa teaches speed management database 125 used to select processing speed corresponding to the software to be executed. *Id.* at 7:10–13. Figure 4 is reproduced below.

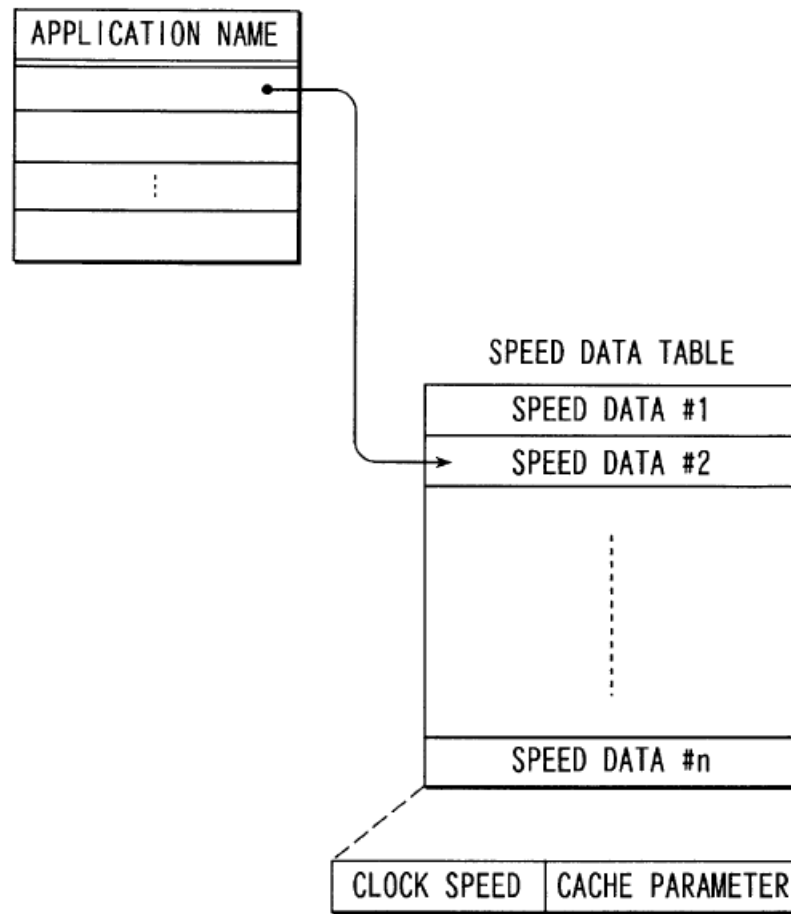


FIG. 4

Figure 4 shows the structure of speed management database 125.

Speed management database 125 is used by the OS to perform centralized control of the setting environment associated with device drivers and application programs. *Id.* at 7:16–20. Speed management database 125 holds application names as keys and pieces of speed information as values. *Id.* at 7:21–23. Dewa teaches using speed management database 125 to

control CPU processing speed for each piece of software when it is executed. *Id.* at 8:22–24.

2. *Whether Dewa is Prior Art*

a. *Overview*

Conception is “the formation, in the mind of the inventor of a definite and permanent idea of the complete and operative invention, as it is thereafter to be applied in practice.” *Coleman v. Dines*, 754 F.2d 353, 359 (Fed. Cir. 1985). Conception must include every feature of the claimed invention. *Id.* An inventor “may date his patentable invention back to the time of its conception, if he connects the conception with its reduction to practice by reasonable diligence on his part, so that they are substantially one continuous act.” *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996). Following a petitioner’s showing that a reference constitutes prior art relative to the actual filing date of the challenged patent, the burden of production shifts to the patent owner to show that the challenged claims are entitled to the benefit of an earlier priority date. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1380 (Fed. Cir. 2015) (“The burden of production then shifted to [Patent Owner] to argue or produce evidence that either [the reference] does not actually anticipate, or, as was argued in this case, that [the reference] is not prior art because the asserted claims in the [involved] patent are entitled to the benefit of a filing date (constructive or otherwise) prior to the filing date of [the reference].”).

For completeness, we also note, in accordance with Patent Office regulations, a patent owner response “is filed as an opposition” (37 C.F.R. § 42.120) and, therefore, “must comply with the content requirements for motions” (37 C.F.R. § 42.23(a)). The content requirements of petitions

and motions include “[a] full statement of the reasons for the relief requested, including a detailed explanation of the significance of the evidence.” *See* 37 C.F.R. § 42.22; *cf.* 35 U.S.C. § 316 (“The Director shall prescribe regulations . . . providing for the filing by the patent owner of a response . . . after an inter partes review has been instituted and requiring that the patent owner file with such response, through affidavits or declarations, any additional factual evidence and expert opinions on which the patent owner relies in support of the response.”). The Patent Office’s published guidance indicates that Patent Owner should submit with its Patent Owner Response “any affidavits or additional factual evidence sought to be relied upon” and Patent Owner should “explain the relevance of such evidence.” Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012).

b. The Parties’ Contentions

Petitioner contends that “Dewa is prior art under at least 35 U.S.C. § 102(e).” Pet. 14. Under 35 U.S.C. § 102(e), a prior art patent must have been filed “before the invention by the applicant for patent.” Petitioner asserts “Dewa was filed May 7, 1998 before the November 1998 filing date of the application which eventually matured into the 123 Patent.” Pet. 14.

Patent Owner contends that Dewa is not prior art because the ’123 Patent “is entitled to a priority date of August 28, 1997.” PO Resp. 3; *see also id.* at 1–3 (citing Ex. 2006, 1–3, 8, Fig. 3; Ex. 2007, 12, 30, 31). Patent Owner asserts “the invention of the ’123 Patent has a conception date of August 28, 1997” and “was reduced to practice no later than August 17, 1998.” *Id.* at 3. Patent Owner contends that according to the inventor, Mr. Barbee, a document entitled *Phoenix Intelligent Power Management (IPM)*

for Windows NT 5.0 and Windows 98 (Ex. 2006) includes a diagram and accompanying text (*id.* at 8, Fig. 3) that “was ‘central, or key’ to the way in which the invention would work” (PO Resp. 2 (citing Ex. 2007, 30–31; Ex. 2006, 8, Fig. 3)).

In its Reply, Petitioner contends that “the invention disclosure lacks any indication of showing reliable dates of conception or reduction to practice.” Pet. Reply 16. Petitioner further contends, “[e]ven if the board were to find the invention disclosure to be reliable, the invention disclosure does not support the claimed invention which requires ‘said operational mode indicates an application type.’” *Id.*

c. Analysis of Whether Dewa is Prior Art

Following Petitioner’s showing that Dewa constitutes prior art relative to the actual filing date of the ’123 Patent, the burden of production shifted to Patent Owner to show that the challenged claims of the ’123 Patent are entitled to the benefit of an earlier date, prior to the relevant dates of Dewa. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d at 1380. We agree with Petitioner that Patent Owner’s evidence does not support Patent Owner’s contention that Dewa is not prior art (Pet. Reply 16–22).

For instance, we agree with Petitioner that Patent Owner does not establish reliably its asserted date of conception. Although Patent Owner asserts “the invention of the ’123 Patent has a conception date of August 28, 1997” and “was reduced to practice no later than August 17, 1998” (PO Resp. 3), Patent Owner relies on a single document (*id.* at 1–3 (citing Ex. 2006)), with a copyright date of 1998 and a revision date of August 17, 1998 (*id.* at 1, 2). Patent Owner relies on testimony alone to support its contention that the diagram Patent Owner relies on was in the original draft (PO Resp. 2

(citing Ex. 2007, 30–31)) that was prior to the May 1998 filing date of Dewa.

We also agree with Petitioner (Pet. Reply 17–22) that Patent Owner has not produced evidence of conception or reduction to practice of the claimed invention, which requires “said operational mode indicates an application type.” As Petitioner notes (*id.*), the invention disclosure document depicts an “[a]daptive time-out’ concept,” shown in Figure 3. Figure 3 illustrates a device state profile including time periods that the “[d]evice [is] in use,” the “[d]evice [is] inactive,” and “T[delta],” which according to the accompanying text is “the total time in which a device is turned off.” Ex. 2006, 8, Fig. 3. We find that the adaptive time-out concept illustrated in Figure 3 and described in accompanying text pertains to only whether the device is in use (*id.*) and does not describe determining an operational mode of the circuit, where the operational mode indicates an application type of the application program that is using the circuit, as is required by the independent claims. Patent Owner’s other evidence (PO Resp. 1–3 (citing Ex. 2006, 1–3, 8, Fig. 3; Ex. 2007, 12, 30, 31)) does not remedy this deficiency.

Furthermore, Patent Owner acknowledged the deficiency:

JUDGE PARVIS: Did patent owner point to anything in the record that shows said operational mode to indicate an application type of application program? Is that in evidence with respect to conception o[r] reduction [to] practice?

MR. SUMMERFIELD: That is something that we would claim would be obvious from what is in the invention record. We agree it’s not in there expressly.

Tr. 48:1–7.

Contrary to Patent Owner's assertion of obviousness, evidentiary proof must demonstrate possession of every feature of the claim. *Coleman v. Dines*, 754 F.2d at 359; *Davis v. Reddy*, 620 F.2d 885, 889 (CCPA 1980) (holding "every feature recited" must be shown). Furthermore, Patent Owner takes contradictory positions in that Patent Owner also asserts that determining the operational mode of the circuit is not obvious over Weiser and Dewa. *See e.g.*, PO Resp. 19.

As a separate and independent reason, in this case, the Patent Owner Response did not contain a "full statement of the reasons for the relief requested" or include "a detailed explanation of the significance of the evidence," as it should have. 37 C.F.R. §§ 42.22, 42.23(a), 42.120. In this case, Patent Owner, instead, relies on a bare-bones, conclusory assertion that the challenged patent "is entitled to a priority date" that is earlier than Dewa (PO Resp. 3). Patent Owner's only reason is that the diagram shown in Figure 3 (Ex. 2006 8, Fig. 3) "was 'central, or key' to the way in which the invention would work" (PO Resp. 2 (citing Ex. 2007, 30–31; Ex. 2006, 8, Fig. 3)). Patent Owner, however, does not explain why a diagram that was "central" or "key" standing alone demonstrates a complete and operative invention, including every feature of the claimed invention, as is required. *Coleman v. Dines*, 754 F.2d at 359 ("It is settled" that "every limitation . . . must have been known."). Furthermore, as noted above, Patent Owner's assertion that the diagram was "central" or "key" (PO Resp. 2) is inconsistent with Patent Owner's obviousness contention that the missing feature distinguishes over the prior art (*id.* at 19). For the additional, independent reason that Patent Owner's assertion of priority is conclusory and, therefore, waived, we are persuaded Petitioner has met its burden.

d. Conclusion— Dewa is Prior Art

Petitioner's contentions and evidence show that Dewa was filed May 7, 1998, before the November 1998 filing date of the application which issued as the '123 Patent. Despite the counter-arguments in the Patent Owner Response, and the evidence cited therein, which we also have considered, we find that Petitioner has demonstrated sufficiently that Dewa is prior art.

3. Independent Claims 1, 8, and 10 and Dependent Claims 4–7, 12, and 13

Claims 1, 4, 6, 8, 10, and 12 are discussed above with respect to Petitioner's assertion of anticipation. For the reasons given above, we are persuaded that that Petitioner has demonstrated by a preponderance of the evidence that each of claims 1, 4, 6, 8, 10, and 12 are anticipated by Weiser. Nonetheless, for completeness, below we discuss further supporting evidence in Dewa and Petitioner's contention that these same claims are obvious over Weiser and Dewa.

Additionally, we discuss Petitioner's assertion that each of claims 5, 7, and 13 is obvious over Dewa and Weiser. Claims 5, 7, and 13 depend, directly, from claims 4, 6, and 12, respectively.⁸ Each of claims 5, 7, and 13 further recites "wherein the type of service said circuit is providing is selected from one of a word processing service, a presentation service and a spreadsheet service." For the reasons discussed above with respect to claim

⁸ Claim 7 includes the same error in the preamble as noted above with respect to claim 6. We see no reason, based on the complete record now before us, to change our determination in the Decision to Institute (Dec. to Inst. 18) that we should interpret claim 7 in the same manner as claim 6. See *Novo Indus.*, 350 F.3d at 1355.

construction, we are persuaded by Petitioner that “selected from one of,” as recited in dependent claims 5, 7, and 13, means that the subsequent list reflects alternatives, i.e., one of a word processing service, a presentation service, or a spreadsheet service.

a. The Petition

As an example of the contentions in the Petition, with respect to “determin[ing] an operational mode of the circuit,” recited in claim 1, and commensurately recited in claims 8 and 10, Petitioner points to Dewa’s teachings of dynamically controlling CPU processing speed using speed management data. Pet. 31–32 (citing Ex. 1009, Abstract, 5:62–64, 7:8–13, 8:22–34)). In support of its positions that Dewa teaches this limitation, Petitioner also relies on the testimony of Dr. Levitt. *Id.* (citing Ex. 1013 ¶¶ 85, 96–99, 100–102). Dr. Levitt testifies that “Dewa’s speed management database 125 . . . functions the same as the 123 Patent’s profile ID,” and, therefore, Dewa’s use of the speed management database teaches determining the operational mode of the circuit. Ex. 1013 ¶ 85.

As an additional example, with respect to dependent claims 5, 7, and 13, Petitioner points to (Pet. 32–33 (citing Ex. 1009, 7:8–13)) Dewa’s teaching that “the user who used the text editor at a low speed is more likely to select the low speed for the text editor on the next day” so “speed management database 125 is used to select the processing speed corresponding to the software to be executed” (Ex. 1009, 7:8–13). Petitioner additionally relies on the declaration of Dr. Levitt (Pet. 32–33 (citing Ex. 1013 ¶ 103), who testifies that “a text editor corresponds to a word processing service provided by the application program running on the circuit” (Ex. 1013 ¶ 103).

Petitioner further contends that a person of ordinary skill in the art would have combined the teachings of Dewa and Weiser. Pet. 46–47 (citing Ex. 1013 ¶¶ 133–137). In support of its positions regarding reasons to combine, Petitioner relies on the testimony of Dr. Levitt. *Id.* Dr. Levitt, for example, testifies that one of ordinary skill in the art would have known that some application types have different power setting needs than other application types (Ex. 1013 ¶ 133), such as Weiser’s not-time-critical tasks (*id.* ¶ 132 (citing Ex. 1010, 4:36–52)) and Dewa’s text editor type applications (*id.* ¶ 135 (citing Ex. 1009, 7:8–13)). Dr. Levitt also testifies regarding a slight modification of Dewa’s speed management database (*id.* ¶¶ 133–137), which, as discussed above, Dr. Levitt testifies corresponds to the operational mode of the circuit recited in the independent claims (*id.* ¶ 85). In particular, Dr. Levitt testifies it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Dewa to associate a more generalized class of common applications to a desired, common clock speed. *Id.* ¶ 137. Dr. Levitt, for instance, testifies that it would have been obvious to apply Weiser’s teaching of labeling groups of tasks into Dewa’s speed management database to account for an increased number of entries taking up more memory (*id.* ¶ 134) and maintain a reasonably sized database. *Id.* ¶ 135.

b. The Patent Owner Response and Petitioner Reply

Patent Owner contends “[a]ll of the claims of the ’123 patent contain the limitation ‘an operational mode of the circuit’ which is not seen in any of the cited references, individually or collectively.” PO Resp. 1. Patent Owner also contends “[i]t should be noted that the Board expressly rejects Petitioner’s argument saying that Dewa teaches ‘an application type.’” *Id.* at

14 (citing Dec. to Inst. 15)). However, although we did not institute on the ground that the claims are anticipated by Dewa because “Petitioner has not shown sufficiently that Dewa discloses a category” (*id.* at 16), we did institute on the ground that claims 1, 4–8, 10, 12, and 13 are obvious over the combined teachings of Dewa and Weiser. *Id.* at 17, 18, 23.

Turning back to Patent Owner’s contention that the references collectively do not teach the limitation “an operational mode of the circuit” (PO Resp. 1), in addition to finding that Weiser discloses this limitation, as an independent reason, we also are persuaded by Petitioner’s contentions and the evidence cited therein (Pet. 46–47 (citing Ex. 1013 ¶¶ 133–137)) that categorizing applications is an obvious modification of Dewa. In particular, we are persuaded by Dr. Levitt’s testimony that one of ordinary skill in the art would have known that some application types have different power setting needs than other application types (Ex. 1013 ¶ 133), such as Weiser’s not-time-critical tasks (*id.* ¶ 132 (citing Ex. 1010, 4:36–52)) and Dewa’s text editor type applications (*id.* ¶ 135 (citing Ex. 1009, 7:8–13)). We additionally are persuaded by Dr. Levitt’s further testimony that it, therefore, would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Dewa to associate a more generalized class of common applications to a desired, common clock speed. *Id.* ¶ 137.

Patent Owner further contends that “Dewa does not teach ‘an operational mode of the circuit’ . . . because the operating clock for one application can change.” PO Resp. 18–19. Patent Owner particularly refers to the ability of the user to change the speed and asserts “[t]here is more than one speed for the operation of the application depending on the user’s intention.” *Id.* at 18. Patent Owner’s contentions pertain to speed and are

not commensurate with the scope of the claims because, as discussed with respect to claim construction, the claims do not require that the operational mode specify expressly the particular clock speed at which the circuit operates.

With respect to the predetermined speed, Patent Owner similarly contends “Dewa’s users are given discretion to change the clock for operating any particular application.” PO Resp. 20. Patent Owner points to no intrinsic or extrinsic authority supporting that a predetermined speed can never change, and Patent Owner further provides no contention regarding construction of this term. Additionally, Weiser teaches a first predetermined speed “Min Clock” 88 and a second predetermined speed “Max Clock” 86. Pet. 20 (citing Ex. 1010, Fig. 3; Ex. 1013 ¶¶ 66, 68, 69). As Dr. Levitt testifies (Ex. 1013¶ 68), Weiser also teaches that “[s]equencer 26 selects the clock speeds” (Ex. 1010, 4:4–5), which requires a prior determination of the speeds that can be selected.

We now turn to Patent Owner’s contentions regarding reasons to combine Dewa and Weiser. Patent Owner contends that Dewa and Weiser “[c]annot [b]e [c]ombined” for the following three reasons: (1) the combination defeats Dewa’s purpose of allowing a user to adjust clock speed at will; (2) the combination does not reduce the size of Dewa’s database; and (3) the combination would be complicated because it would interfere with the normal task scheduling activities of Weiser. PO Resp. 14–17.

Turning to the first of these, Patent Owner contends “a combination of Dewa and Weiser would eliminate the user’s control over clock speed.” *Id.* at 15. We are not persuaded by Patent Owner’s first contention, as Patent Owner narrowly focuses on small differences between Weiser and Dewa and

fails to consider the collective teachings of Weiser and Dewa from the perspective of one of ordinary skill in the art. *See KSR*, 550 U.S. at 420 (“[F]amiliar items may have obvious uses beyond their primary purposes.”); *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985) (a prior art reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect).

As Petitioner correctly contends (Pet. 26 (citing Ex. 1009, 7:16–23, 8:23–24)), Dewa teaches a speed management database, which holds application names and corresponding speed information (*id.* at 7:21–23) that is used to adjust processor clock speed dynamically for software when it is executed (*id.* at 8:22–24). As Petitioner also correctly contends (Pet. 27), Dewa teaches “[f]irst of all, it is checked whether the speed data of a process of the active window is present in the registry” and “[i]f YES in step S201, the speed data is read out, and the power management software 124 is instructed to set the processing speed to the speed designated by the speed data (steps S202 and S205).” Ex. 1009, 8:48–53. That Dewa also teaches a user setting speed data does not prohibit combining the teachings of Weiser and Dewa relied upon by Petitioner, as Patent Owner contends (PO Resp. 14–15). Additionally, we agree with Petitioner (Pet. Reply 8–9) that combining the teachings of Weiser and Dewa does not mandate eliminating the user’s control.

We turn to Patent Owner’s second contention that the combination does not reduce the size of Dewa’s database (*id.* at 15–16). Patent Owner contends that “Dr. Levitt omits the fact that there must be extra columns for application name and corresponding speeds in Dewa’s database in order to

record Weiser's labels." PO Resp. 16. Patent Owner also contends "Weiser allows relabeling (Ex. 1010 at 4:52–55) which means it would require more memory to track those changes." *Id.* Patent Owner does not offer the testimony of Dr. Levy in support of its positions, but instead relies on attorney argument. *Id.* at 15–17.

Patent Owner's contentions are not consistent with the evidence of record. Dr. Levitt testifies that it would have been obvious "to modify Dewa's speed management database by grouping the application names into types of applications" (Ex. 1013 ¶ 135) and that one of ordinary skill in the art would have known that a "database[]" can be reduced in size if it had few entries" (*id.*). Patent Owner incorrectly characterizes Dr. Levitt's testimony as requiring recording additional data (PO Resp. 16), without addressing his testimony regarding modifying Dewa's database so as to reduce its size (Ex. 1013 ¶ 135). Similarly, Patent Owner's contention regarding Weiser's relabeling does not take into account modifying Weiser's labels and, instead, is based on a need not set forth in Weiser that changes would have to be tracked. PO Resp. 16

We now turn to Patent Owner's third reason, i.e., the combination would be complicated because it would interfere with the normal task scheduling activities of Weiser. *Id.* at 16, 17. First, we note that Patent Owner does not argue that the proposed combination of the teachings of Weiser and Dewa would be beyond the level of ordinary skill in the art or unsuccessful. PO Resp. 14–17. Second, we consider the Declaration of Dr. Levy, which Patent Owner relies on in support of its positions. *Id.* (citing Ex. 2011 ¶¶ 3–13). Dr. Levy testifies that the resulting combination of Dewa and Weiser "would be a system in which the added features would

interfere with normal task scheduling activities of Weiser's generic operating system (OS) scheduler." Ex. 2011 ¶ 4 (citing Ex. 1010, 6:9–12). Dr. Levy further testifies "[a]s shown above" the combination of Dewa and Weiser is "disadvantageous" and "[a] person of skill would understand that Weiser teaches away from any combination." *Id.* ¶ 13.

Dr. Levy's testimony (*id.* ¶¶ 4–13) includes a single citation to the evidence of record, specifically a citation to Weiser's teaching that the flowchart of Figure 3 "may be simply added to an operating system since it does not interfere with the task scheduling activity." Ex. 1010, 6:9–12. As an initial matter, Weiser's technique does not criticize, discredit, or otherwise discourage the use of Weiser's categorizing of applications with Dewa or the use of Dewa's word processing application type with Weiser. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) ("A reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not 'criticize, discredit, or otherwise discourage' investigation into the invention claimed.") (*quoting In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004)).

Dr. Levy's testimony that "Weiser teaches away from any combination" (Ex. 2011 ¶ 13) is based on his characterization of Dewa as being "unlike" Weiser because Dewa teaches only "user-manipulated speed control" (*id.* ¶ 6). More specifically, Dr. Levy testifies that "unlike Weiser's system" in Dewa, "it is the intelligence of the user, rather than any mechanism described by Dewa that determines the speed to be selected." Ex. 2011 ¶¶ 6, 7. However, Dr. Levy's testimony that Dewa is unlike Weiser in this regard is not consistent with the teachings of Dewa because,

as Petitioner correctly contends (Pet. 31–32), Dewa teaches recording speed data and using the recorded data to dynamically control software for each piece of software (*see, e.g.*, Ex. 1009, Abstract, 5:59–64, 6:46–50, 7:8–13, 8:48–50, Figs. 1, 4).

Other of Dr. Levy’s testimony is based on this incorrect characterization. In particular, Dr. Levy testifies “[t]o the extent anything in Dewa can be characterized as involving ‘intelligent power management,’ it is [the] branch prediction mechanism,” and “such a branch prediction mechanism would further complicate the scheduling activities in Weiser that uses a generic operating system.” *Id.* ¶¶ 9, 10. Dr. Levy further testifies “[s]uch a branch prediction mechanism would further complicate the scheduling activities in Weiser” and “Dewa’s methods interfere with the OS scheduler and normal task scheduling activities upon which Weiser relies.” *Id.* ¶¶ 10, 11. For these reasons, Dr. Levy testifies “the combination of Dewa and Weiser is disadvantageous” and “[a] person of skill would understand that Weiser teaches away from any combination that interferes in any way with task scheduling activity of an OS scheduler.” *Id.* ¶ 13.

We agree with Petitioner (Pet. Reply 9, 10) that Dr. Levy’s testimony is not consistent with the teachings of Weiser and Dewa. As Petitioner correctly notes (*id.*), Weiser chooses the next task (step 70) by determining the priority of the task (step 72) (Ex. 1010, Fig. 3, 6:12–17), which is different than scheduling based on priority. Additionally, Weiser further teaches “[t]his code may be simply added to an operating system since it does not interfere with task scheduling activity and it can be executed quickly” (*id.* at 6:9–12). Dr. Levy’s testimony regarding branch power management features does not take into account Dewa’s teaching, noted by

Petitioner (Pet. 31–32), of recording speed data and using the stored, recorded data to dynamically control software for each piece of software (see, e.g., Ex. 1009, Abstract, 5:59–64, 6:46–50, 7:8–13, 8:48–50, Figs. 1, 4).

Additionally, Dr. Levy does not cite to adequate evidence supporting his testimony and testifies regarding different features than those relied upon by Petitioner. As an initial matter, Dr. Levy does not provide any citations to Dewa or other evidentiary support other than the citation to Weiser noted above (Ex. 2011). See 37 C.F.R. § 42.65 (a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”). For completeness, we look to a branch prediction mechanism discussed in Dewa (Ex. 1009, 9:11–13). Dewa’s branch mechanism relates to “another embodiment” (*id.* at 8:66), in accordance with a speed management database illustrated in Figure 8 (*id.* at 9:1). Dr. Levy does not testify regarding the teachings relied upon by Petitioner and provides no testimony regarding the speed management database 125 illustrated in Figure 4, which also is relied upon by Petitioner (Pet. 25, 28, 29, 31, 32 (citing Ex. 1009, Fig. 4)).

Because Dr. Levy’s testimony does not disclose sufficiently underlying facts or data on which the opinion is based and is not consistent with the teachings of Weiser and Dewa, we give Dr. Levy’s testimony little weight in this proceeding. See 37 C.F.R. § 42.65 (a). We determine that one of ordinary skill in the art would not find Petitioner’s proposed combination and modification to be overly complicated or complex, as Dr. Levy testifies. See *KSR*, 550 U.S. at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”)

Despite the counter-arguments in the Patent Owner Response, and the evidence cited therein, which we also have considered, for the foregoing reasons, we find reasonable each of Petitioner's asserted rationales, including that a person of ordinary skill in the art would have combined the teachings of Dewa and Weiser to simplify database operations, reduce memory needed to store the database, add a word processing service type, and to achieve the other advantages noted by Petitioner. Pet. 32, 33, 43–47 (citing Ex. 1013 ¶¶ 100–102, 133–137).

Additionally, the testimony of Dr. Levitt relied upon by Petitioner in support of its assertion of these rationales is consistent with the evidence of record. For instance, Dr. Levitt's testimony that one of ordinary skill in the art would have known that some application types have different power setting needs than other application types (Ex. 1013 ¶ 133) is consistent with Weiser's teaching of dynamically varying speed depending on the task to be performed (1010, 3:17–23, 6:14–17). As an additional example, Dr. Levitt's further testimony that it would have been obvious to apply Weiser's use of labeling tasks into Dewa's speed management database to account for an increased number of entries taking up more memory (Ex. 1013 ¶¶ 134, 135) is consistent with Dewa's teaching of how to structure the database (*see, e.g.*, Ex. 1009, Figs. 1, 4, 5:59–60, 7:16–20) and Weiser's teaching of using broad task labels to control speed (*see, e.g.*, Ex. 1010, 4:40–58, 6:14–17). We give Dr. Levitt's testimony substantial weight (37 C.F.R. § 42.65) because it is consistent with the evidence of record.

c. Conclusion for Obviousness of Claims 1, 4–8, 10, 12, and 13

Petitioner's contentions and claim charts persuasively read all elements of each of claims 1, 4–8, 10, 12, and 13 onto the combined teachings of Weiser and Dewa. Additionally, because we find that Dr. Levitt's testimony is consistent with the evidence cited therein, we give his testimony substantial weight (37 C.F.R. § 42.65). We determine that the record supports Petitioner's contentions and adopt Petitioner's contentions discussed above as our own. Despite the counter-arguments in the Patent Owner Response, and the evidence cited therein, which we also have considered, for the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 4–8, 10, 12, and 13 are unpatentable as obvious over the combined teachings of Dewa and Weiser.

D. Obviousness of Claims 2, 3, 9, and 11 over Weiser, Dewa, and APM

Petitioner contends that each of claims 2, 3, 9, and 11 of the '123 Patent is rendered obvious by the combined teachings of Weiser, Dewa, and APM. Pet. 36–45. Although Petitioner's summary of grounds (Pet. 13) and the section header (Pet. 36) refer to only Dewa and APM, Petitioner's omission of Weiser in the summary and header is ministerial in nature. As we found in the Decision to Institute (Dec. to Inst. 19–21), Petitioner provides persuasive contentions regarding obviousness over Weiser, Dewa, and APM in the Petition, including contentions regarding a rationale for combining Weiser, Dewa, and APM in the subsequent discussion (Pet. 36–47). Patent Owner had the opportunity to respond to Petitioner's contentions and had notice that *inter parties* review was instituted on the basis that each

of dependent claims 2, 3, 9, and 11 is rendered obvious by the combined teachings of Weiser, Dewa, and APM (Dec. to Inst. 21, 23). *See* PO Resp. 21–30. For these reasons, we turn to whether Petitioner has met its burden on the ground of obviousness over Weiser, Dewa, and APM based on the complete record now before us.

1. APM

APM teaches an interface specification for an Advanced Power Management (APM) Basic Input Output System (BIOS) module. Ex. 1004, 1, 8. APM controls power usage of the system based on system activity, such as entering into APM standby state after a short period of inactivity and recovering to the APM enabled state instantaneously. *Id.* at 9. The APM BIOS controls a CPU core at different clock speeds including full on, slow clock, and stop. *Id.* at 13.

APM teaches a hierarchy of cooperating layers made up of the APM BIOS layer at the bottom and applications at the top. *Id.* at 7. Calls and information between the applications and the APM BIOS layer are passed through an intermediate APM driver layer. *Id.* The APM driver uses function calls, specifically “*CPU Idle*” and “*CPU Busy*,” as well as “selected forms of system activity such as mouse movement or keyboard activity” to indicate CPU usage changes to the APM BIOS. *Id.* at 25. The APM BIOS adjusts clock speed in response to either these function calls or the system activity. *Id.*

2. Claims 2, 3, 9, and 11

Each of claims 2, 3, 9, and 11 depends, directly, from one of independent claims 1, 8, or 10.

a. The Petition

Petitioner contends “[c]laims 2, 9, and 11 cover the concept of monitoring the activity of a device (*e.g.*, keyboard, mouse, etc.) and adjusting the operating speed of the circuit accordingly.” Pet. 39 (citing Ex. 1013 ¶ 115; 1001, 6:60–65). For the further recitations of claims 2, 9, and 11, Petitioner points to the combined teachings of APM, Dewa, and Weiser including the APM teachings summarized above and the teachings of Dewa and Weiser discussed with respect to the independent claims. Pet. 38–42. For instance, Petitioner points to APM’s teaching of slowing the clock in response to a “*CPU Idle*” function call and restoring the clock to normal speed in response to either (1) a “*CPU Busy*” call, or (2) “selected forms of system activity such as mouse movement or keyboard activity.” *Id.* at 38 (citing Ex. 1004, 25). Petitioner also points to APM’s teaching of at least three different speeds, stop, slow clock, and full on. *Id.* at 39 (citing Ex. 1004, 13); *see also id.* at 25 (citing Ex. 1009, Abstract, Fig. 4) (illustrating speed data table including speed data #1 through speed data #n).

Petitioner contends that claim 3 “requires the third predetermined speed to be between the first predetermined speed and the second predetermined speed.” *Id.* at 42. Petitioner points to the same teachings discussed above with respect to claims 2, 9, and 11 and further contends, in reliance on the testimony of Dr. Levitt, that it would be obvious to set a clock at the third predetermined speed for an input/output device. *Id.* at 42, 43 (citing Ex. 1013 ¶¶ 125–127).

Petitioner also relies on the testimony of Dr. Levitt for reasons to combine the references. Pet. 38–42 (citing Ex. 1013 ¶¶ 113–120). Dr. Levitt, for example, testifies that one of ordinary skill in the art would have

combined the references because Dewa teaches building its system on the Advanced Configuration and Power Interface (ACPI), which was the successor to APM and is backwards compatible with APM. Ex. 1013 ¶ 119 (citing Ex. 1009 5:17–29, Figs. 1, 7; Ex. 1012, 31). Dr. Levitt further testifies that one of ordinary skill in the art would be motivated to achieve efficient power management using multiple techniques, including the techniques taught in APM, Dewa, and Weiser. *Id.* ¶¶ 119, 120 (citing Ex. 1010, 3:4–7, 4:46–51, 6:29–31).

b. The Patent Owner Response and Petitioner Reply

Patent Owner contends (1) that the art does not teach the further limitations of claims 2, 3, 9, and 11, and (2) that APM cannot be combined with Dewa and Weiser. PO Resp. 21–30. Turning to the first of these contentions, Patent Owner, more specifically, contends “Petitioners attempt to reduce [] claims 2, 9, and 11 to monitoring activity of a device (e.g., keyboard, mouse, etc.), and adjusting the operating speed of the circuit accordingly.” PO Resp. 25 (citing Pet. 39). Patent Owner acknowledges that APM teaches “controlling ‘the power of the system based on system activity’” (*id.* (citing Ex. 1004, 9)) and “determin[ing] “‘short inactivity’ or ‘long inactivity’ to decide whether the system should be placed in APM Standby state or the APM Suspend state” (*id.* at 27 (citing Ex. 1004, 15)). Patent Owner, however, contends “[t]he cited references only discuss one scenario, i.e., operating at a reduced speed if the system is idle” (*id.*), which Patent Owner contends differs from the further recitation of the claims.

Patent Owner’s contention is not commensurate with the scope of claims 2, 9, and 11. More specifically, each of claims 2, 9, and 11 recites determining if there is “a predetermined activity level from an input/output

device coupled to the circuit within a predetermined period” and “if so, operating the circuit at third predetermined speed, otherwise operating the circuit at a said first predetermined speed.” Patent Owner points to no intrinsic or extrinsic evidence and does not propose any construction supporting its suggestion that “predetermined activity level from an input/output device” as recited in claims 2, 9, and 11 cannot be a reduced level of activity. Furthermore, Petitioner persuasively points to APM’s teaching of restoring the clock to normal speed in response to “selected forms of system activity such as mouse movement or keyboard activity” (Pet. 38 (citing Ex. 1004, 25)) and Weiser’s teaching of adjusting to a maximum clock speed based on “recent” screen, keyboard, or other input/output activity (step 80) (*id.* at 20, 41; Pet. Reply 11 (citing Ex. 1010, Fig. 3)).

Patent Owner also asserts that APM’s teaching is different because “the system activity in APM is regarded as an interrupt,” and, therefore, “there is no reason to monitor the activity level of the keyboard.” PO Resp. 26 (citing Ex. 2011 ¶ 14). Patent Owner relies on the testimony of Dr. Levy in support of its position. *Id.* Dr. Levy testifies that in APM “there is no reason to monitor the activity level of the keyboard” because “such system activity in APM is received as an interrupt and generates a resume event.” Ex. 2011 ¶ 14 (citing Ex. 1004, 10, 20). Dr. Levy’s testimony pertains to only what APM “discloses” (*id.*), and does not take into account the collective teachings and suggestions of APM, Dewa, and Weiser, including Weiser’s teaching of adjusting to a maximum clock speed based on “recent” screen, keyboard, or other input/output activity (step 80) (Ex. 1010, Fig. 3) and APM’s teaching of monitoring activity levels “for a specified short

period of time” and “a specified long period of time” (Ex. 1004, 15; *see also id.* at 9 (teaching monitoring activity over time periods including, “instantaneous,” “a short period” and “a relatively long period”)).

Regarding Patent Owner’s contentions that the art does not teach the further limitations of claim 3, Patent Owner more specifically contends that Petitioner does not connect APM’s teaching of “Full On,” “Slow Clock,” and “Stop” to any of the system’s activity levels. PO Resp. 28 (citing Ex. 1004, 13). Patent Owner also contends that “APM’s stop clock cannot be the predetermined speed.” PO Resp. 29 (citing Ex. 2011 ¶ 15).

Claim 3 recites that the third predetermined speed is between the first and second predetermined speeds, i.e., faster than the first predetermined speed. To better understand the relationship of the recited speeds, a table below, which we refer to as Table 1, includes each speed and a corresponding claim limitation, if any, pertaining its relationship to other speeds. Table 1 is ordered with the fastest speed at the top.

Speed	Relationship
“second predetermined speed”	Not applicable (this is the fastest speed).
“third predetermined speed”	“between the first predetermined speed and the second predetermined speed” (as recited in only claim 3)
“first predetermined speed”	“said first predetermined being slower than the second predetermined speed” (as recited in independent claims 1, 8, and 10)

Table 1 illustrates predetermined speeds and the corresponding claimed relationship.

Regarding Patent Owner’s contention that Petitioner does not connect APM’s teaching of “Full On,” “Slow Clock,” and “Stop” to any of the

system's activity levels (PO Resp. 28 (citing Ex. 1004, 13), Petitioner points to (Pet. 39 (citing Ex. 1004, 13, 25); Ex. 1013 ¶¶ 117, 118)) APM's teaching of CPU Core Modes, which include "Full On," "Slow Clock," and "Stop" (Ex. 1004, 13) and depend on CPU usage and "selected forms of system activity such as mouse movement or keyboard activity" (*id.* at 25). Patent Owner does not take into account sufficiently the complete teachings of APM identified by Petitioner.

Regarding Patent Owner's contention that "APM's stop clock cannot be the predetermined speed" (PO Resp. 29 (citing Ex. 2011 ¶ 15)), Patent Owner does not take into account sufficiently the collective teachings of the three references, i.e., APM, Dewa, and Weiser. As Petitioner correctly notes (Pet. 20, 25, 28, 41; Pet. Reply 11), APM, Dewa, and Weiser teach different clock speeds (*id.* at 13; Ex. 1009, Abstract, Fig. 4 (illustrating speed data #1 through speed data #n); Ex. 1010, Fig. 3). We specifically note, as an example with respect to the third predetermined speed being between the first predetermined speed and the second predetermined speed, that Weiser's teaching of "Slower Clock" 84 is between "Max Clock" 86 and "Min Clock" 88 and is based on "recent" screen, keyboard, or other input/output activity (step 80) (Ex. 1010, Fig. 3).

Turning to the second of Patent Owner's contentions, i.e. that APM cannot be combined with Dewa and Weiser, Patent Owner, more specifically, contends that APM teaches away and Dewa's power management cannot work in APM. PO Resp. 21–24. Regarding Patent Owner's argument that APM teaches away (*id.* at 21, 22), we find that APM does not criticize, discredit, or otherwise discourage the use of power management instructions that are executed separately from the application

program using the circuit. *See DePuy Spine*, 567 F.3d at 1327.

Furthermore, as Petitioner correctly contends (*see, e.g.*, Pet. Reply 13; Pet. 38), Patent Owner's contention is not consistent with APM's teaching, for example, that the APM driver is a software module that communicates with applications executed separately at a different layer (Ex. 1004, 7, 8, Fig. 1 (describing the "APM Driver" as a "software module.")).

Regarding Patent Owner's argument that Dewa's power management cannot work in APM (PO Resp. 22–24), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Petitioner relies on APM's teaching, for example, that it was known to adjust clock speed in response to "selected forms of system activity such as mouse movement or keyboard activity." Pet. 38 (citing Ex. 1004, 25). Patent Owner's contentions (PO Resp. 22–24 (citing Ex. 1004, 17; Ex. 1009, 5:17–29, 5:46–48, Fig. 1; Ex. 1012, 15, 24, Fig. 1-1) pertain to whether the operating system communicates with applications directly or via an interface, not whether it would have been obvious to one of ordinary skill in the art to combine APM's teaching of adjusting clock speed in response to system activity, such as mouse movement or keyboard activity (Ex. 1004, 25).

Furthermore, Patent Owner does not focus on that part of Dr. Levitt's testimony regarding the backwards compatibility of ACPI (Ex. 1013 ¶ 119 (citing Ex. 1012, 31 ("When it starts, the ACPI OS takes over these functions from legacy BIOS interfaces such as the APM BIOS and the PNPBIOS.))). The functions include "[s]ystem power management," such as providing "for any device to wake the computer." Ex. 1012, 31.

Petitioner provides additional evidentiary support showing that the knowledge of adjusting clock speed in response to system activity, such as mouse movement or keyboard activity, was not limited to use with a particular interface. *See, e.g.*, Pet. 20, 41; Pet. Reply 11 (citing Ex. 1010, Fig. 3). We additionally note that Patent Owner's contentions are attorney argument, without identifying the testimonial support of Dr. Levy.

Despite Patent Owner's contentions and purported evidentiary support, we are persuaded that Petitioner provides sufficient rationale for combining the teachings of Weiser, Dewa, and APM. Pet. 38–42 (citing Ex. 1013 ¶¶ 113–120). In addition to testifying persuasively that one of ordinary skill in the art would have combined the references because Dewa teaches building its system on the ACPI, which was the successor to APM and is backwards compatible with APM (Ex. 1013 ¶ 119 (citing Ex. 1009 5:17–29, Figs. 1, 7; Ex. 1012, 31)), Dr. Levitt further testifies that one of ordinary skill in the art would be motivated to achieve efficient power management using multiple techniques, including the techniques taught in APM, Dewa, and Weiser. *Id.* ¶¶ 119, 120 (citing Ex. 1010, 3:4–7, 4:46–51, 6:29–31). We give Dr. Levitt's testimony substantial weight because it is consistent with the evidence of record.

c. Conclusion for Obviousness of Claims 2, 3, 9, and 11

For the foregoing reasons, Petitioner has demonstrated by a preponderance of the evidence that claims 2, 3, 9, and 11 are unpatentable as obvious over the combined teachings of Dewa, Weiser, and APM. Petitioner's contentions and claim charts persuasively read all elements of each of claims 2, 3, 9, and 11 onto the combined teachings of Weiser, Dewa, and APM. Additionally, because we find that Dr. Levitt's testimony is

consistent with the evidence cited therein, we give his testimony substantial weight (37 C.F.R. § 42.65). We determine that the record supports Petitioner's contentions and adopt Petitioner's contentions discussed above as our own. Despite the counter-arguments in the Patent Owner Response, and the evidence cited therein, which we also have considered, for the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 2, 3, 9, and 11 are unpatentable as obvious over the combined teachings of Dewa, Weiser, and APM.

III. MOTION TO EXCLUDE

Petitioner filed a Motion to Exclude Exhibit 2010, which is the deposition transcript of Dr. Levitt, who testifies in support of Petitioner's contentions. Paper 30. Patent Owner opposes the Motion to Exclude. Paper 33.

We need not reach the merits of Petitioner's Motion to Exclude Evidence because, even without excluding portions of Dr. Levitt's testimony, we have decided in Petitioner's favor. Accordingly, Petitioner's Motion to Exclude is dismissed as moot.

IV. CONCLUSION

For the foregoing reasons, we conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 4, 6, 8, 10, and 12 are unpatentable, under 35 U.S.C. § 102(b), as anticipated by Weiser, claims 1, 4–8, 10, 12, and 13 are unpatentable, under 35 U.S.C. § 103(a), as obvious over the combined teachings of Dewa and Weiser, and claims 2, 3, 9, and 11 are unpatentable, under 35 U.S.C. § 103(a), as obvious over the combined teachings of Weiser, Dewa, and APM. We also dismiss Petitioner's Motion to Exclude.

V. ORDER

For the reasons given, it is:

ORDERED that claims 1–13 of the '123 Patent are unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude is
dismissed; and

FURTHER ORDERED that, because this is a Final Written Decision,
parties to the proceeding seeking judicial review of the decision must
comply with the notice and service requirements of 37 C.F.R. § 90.2.

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