Trials@uspto.gov
571-272-7822

Paper 46
Date: May 18, 2026

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RESMED CORP.,
Petitioner,

v.

CLEVELAND MEDICAL DEVICES, INC.,
Patent Owner.

IPR2025-00159
Patent 11,375,921 B1

Before SHERIDAN K. SNEDDEN, NEIL T. POWELL, and CYNTHIA M. HARDMAN, *Administrative Patent Judges*.

HARDMAN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claim Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

This is a Final Written Decision in an *inter partes* review challenging the patentability of claims 1, 2, 4, 5, 7–9, 11–14, and 16 of U.S. Patent No. 11,375,921 B1 ("the '921 patent," Ex. 1001). We have jurisdiction under 35 U.S.C. § 6.

Petitioner has the burden of proving unpatentability of the challenged claims by a preponderance of the evidence. 35 U.S.C. § 316(e). Having reviewed the parties' arguments and cited evidence, for the reasons discussed below, we find that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 2, 4, 5, 7–9, 11–14, and 16 are unpatentable.

A. Procedural History

Petitioner Resmed Corp. filed a Petition requesting *inter partes* review of claims 1, 2, 4, 5, 7–9, 11–14, and 16 of the '921 patent. Paper 1 ("Pet."). Patent Owner Cleveland Medical Devices, Inc. filed a Preliminary Response to the Petition. Paper 7. The parties further submitted an authorized Reply and Sur-reply to the Preliminary Response. Papers 8, 9. In view of the then-available preliminary record, we instituted an *inter partes* review. Paper 10 ("Dec.").

After institution, Patent Owner filed a Response. Paper 23 ("PO Resp."). Petitioner filed a Reply. Paper 27 ("Reply"). Patent Owner filed a Sur-reply. Paper 35 ("Sur-reply").

Patent Owner filed an authorized Motion to Terminate, alleging that Petitioner failed to name a real party in interest (namely, Petitioner's corporate parent, Resmed Inc.). Paper 37. Petitioner filed an opposition.

Paper 38. Patent Owner filed a reply. Paper 39. We denied the Motion to Terminate. Paper 44.

On March 19, 2026, we held an oral hearing, the transcript of which is of record. Paper 42 ("Tr.").

B. Real Parties in Interest

Petitioner and Patent Owner each identify only themselves as the real party in interest. Pet. 74; Paper 5 (Patent Owner Mandatory Notices), 1.

C. Related Matters

The parties identify *Resmed Corp. v. Cleveland Medical Devices, Inc.*, 1:23-cv-02221-BMB (N.D. Ohio) (the "Ohio case") as a related matter involving the '921 patent. Pet. 75; Paper 3, 1.

Petitioner identifies *inter partes* reviews for U.S. Patent No. 11,602,284 (IPR2025-00157), U.S. Patent No. 11,690,512 (IPR2025-00158), U.S. Patent No. 11,786,680 (IPR2025-00160), U.S. Patent No. 11,857,333 (IPR2025-00246), and U.S. Patent No. 11,872,029 (IPR2025-00247). Pet. 75.

The parties identify an *ex parte* reexamination of the '921 patent (90/019,700, filed by Petitioner), and Petitioner further states that it requested *ex parte* reexamination of U.S. Patent No. 11,786,680 (90/019,705). *Id.*; Paper 5, 1.

D. The '921 Patent (Ex. 1001)

The '921 patent, titled "Devices and Methods for Sleep Disorder Diagnosis and Treatment," issued on July 5, 2022 from U.S. Application 16/057,963, filed on August 8, 2018, and claims priority as a continuation to several utility applications, the earliest of which was filed on November 4, 2005. Ex. 1001, codes (21), (22), (45), (54), (63).

The ’921 patent “relates to an integrated sleep diagnosis and treatment device.” *Id.* at 1:14–18. One embodiment of such a device is depicted in Figure 1 of the ’921 patent, reproduced below.

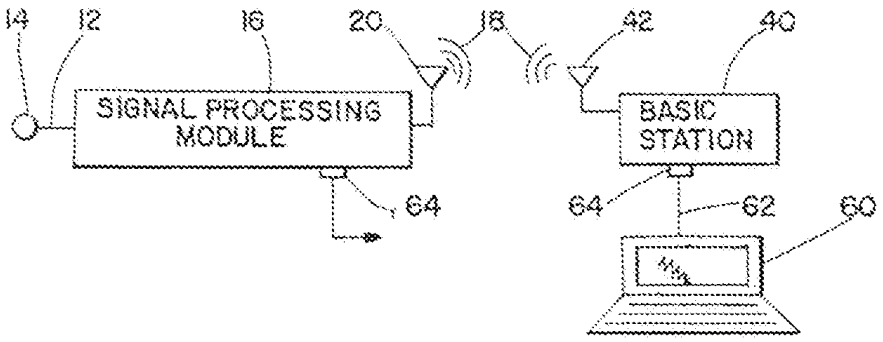


Fig. 1

Figure 1 of the ’921 patent is a block diagram of part of a sleep diagnosis and treatment system, wherein “external input 12 from sensor 14 is input to signal processing module 16.” *Id.* at 8:57–60. Signal processing module 16 generates signal 18, which is “encoded with data corresponding to the external input 12” and transmitted “by wireless means to a base station 40.” *Id.* at 8:63–66.

Figure 7 of the ’921 patent is reproduced below.

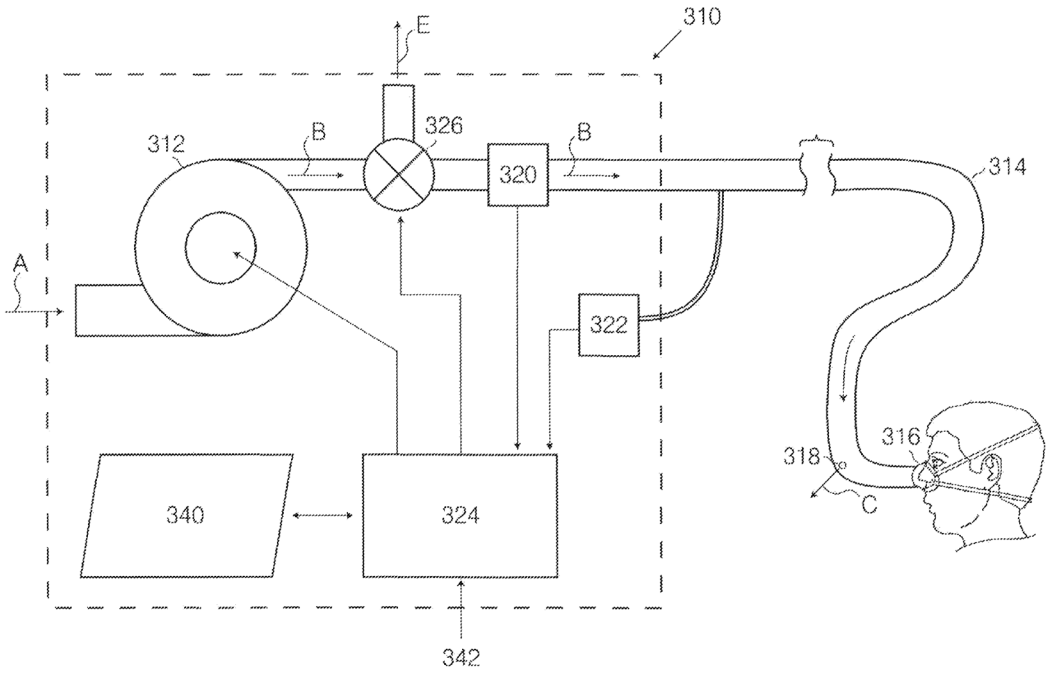


Fig. 7

Figure 7 depicts a continuous positive airway pressure device (referred to herein as a PAP device), which “can be used to physically treat a subject’s sleep disorder, [and] which can be further adjusted using the output of the level of severity of the subject’s sleeping disorder.” *Id.* at 22:41–47. The device includes:

> pressure generator 312, a blower, piston or bellows, that receives a supply of gas from a gas source, such as ambient atmosphere, as indicated by arrow A, or pressurized gas tanks (not shown) and creates a flow of breathing gas, as indicated by arrows B, having a pressure greater than the ambient atmospheric pressure.

Id. at 22:48–54. Circuit 314 “delivers the elevated pressure breathing gas to the airway of the subject” such as via patient interface device 316. *Id.* at 22:54–59.

Device 310 may further include flow sensor 320, pressure sensor 322, or both to "monitor the flow and/or pressure of gas passing in the subject circuit 314." *Id.* at 23:7–10. "The information from the flow sensor 320 and/or pressure sensor 322 is used, for example, to control the pressure or flow of gas provided to the subject, monitor the condition of the subject, monitor the usage of the pressure support device, any combination thereof, or the like." *Id.* at 23:10–17.

The '921 patent states that "one or more sensors used in the system of the present invention can also be tethered to a computer, base station, cell phone, a PDA or some other form of processor or microprocessor." *Id.* at 19:4–7. In addition, the '921 patent describes embodiments in which the "invention can be part of a remote communication station or base station." *Id.* at 19:8–10. For instance, a remote communication system may be "a PDA, computer or cell phone, which receives the physiological data transmission, optionally re-processes the information, and re-transmits the information via cell towers, land phone lines, satellite, radio frequencies or cable to a remote site for analysis." *Id.* at 19:35–41.

E. The Challenged Claims

Petitioner challenges claims 1, 2, 4, 5, 7–9, 11–14, and 16 of the '921 patent. Claim 1 is reproduced below with bracketed notations added:[1]

> 1. A sleeping disorder treatment system comprising:
>
> [a] a PAP device configured to be a single enclosure, the PAP device comprising:
>
> [a.i] a blower having an air output;

[1] For ease of reference, we use the same bracketed notations Petitioner uses in the Petition. *See, e.g.*, Pet. 78–79.

[a.ii] an airflow sensor internal to the PAP device and adapted for measuring the respiratory airflow of a subject while using the PAP device;

[a.iii] a first processor adapted for generating and outputting the data related to the subject's treatment and the treatment's efficacy by receiving sensor data from the airflow sensor, and calculating both the quantified symptom data of the severity of the sleeping disorder symptoms and/or an index of a subject's symptoms measured during use of the PAP device, and data of usage of the PAP device;

[a.iv] a first radio frequency wireless transceiver;

[a.v] a mask or a nasal cannula;

[a.vi] wherein the airflow sensor and the first processor are adapted for measuring and calculating a data of a quantitative output of the severity of a subject's sleeping disorder symptoms during a treatment and further providing for a data related the subject's treatment and the treatment's efficacy;

[a.vii] wherein the blower, and the mask or the nasal cannula are adapted for physically or chemically treating a subject's sleeping disorder symptoms,

[a.viii] wherein the first processor is configured to adjust or re-adjust the blower using, in part, the data of the quantitative output of the level of severity of the subject's sleeping disorder symptoms during treatment;

[b] a software stored on a non-transitory computer readable medium and executable by a second processor, the software adapted to be used with and to display the data related to the subject's treatment and the treatment's efficacy to the subject or a care provider by using a base station, a cell phone or a PDA, each comprising a second radio frequency wireless transceiver, the second processor and a display; and

[c] a remote internet site, the remote internet site adapted to receive the data relate to the subject's treatment and the treatment's efficacy, in whole or part, generated by the PAP

device and transmitted via the first radio frequency wireless transceiver,

[c.i] wherein the software is further adapted to retransmit a data related to the subject's treatment and the treatment's efficacy received by the software from the first radio frequency wireless transceiver of the PAP device, in whole or part, to the remote internet site, and

[c.ii] wherein the sensor data from the sensors is processed by the first processor using one or more of the signal processing techniques from the group consisting of a standard deviation technique, a recursively fit ARMAX system identification model, a short-time fourier transform technique, a time-frequency signal analysis with a variety of different kernals, and a wavelet analysis.

Ex. 1001, 23:51–24:43.

Independent claims 7 and 12 also recite sleeping disorder treatment systems. *Id.* at 24:64–25:54, 26:3–60. Challenged claims 2, 4, 5, 8, 9, 11, 13, 14, and 16 depend directly from independent claims 1, 7, or 12 and recite additional features of the sleeping disorder treatment systems. *Id.* at 24:44–48, 24:53–60, 25:55–61, 25:65–26:2, 26:61–27:2, 27:6–10.

F. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1, 2, 4, 5, 7–9, 11–14, and 16 are unpatentable on the following two grounds:

Ground	Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
1	1, 2, 4, 5, 7–9, 11–14, 16	103(a)	Toge,[3] Burton,[4] Kumar[5]
2	1, 2, 4, 5, 7–9, 11–14, 16	103(a)	Toge, Burton, Kumar, Kisner[6]

Pet. 2. Petitioner supports its contentions with the Declaration of Jason Kirkness (Ex. 1003) and two declarations from Sandeep Chatterjee (Exs. 1005, 1069), among other evidence. Patent Owner supports its contentions with the Declarations of Michael T. Goodrich (Ex. 2015) and David A. Borkholder (Ex. 2016), among other evidence.

[2] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA") included revisions to 35 U.S.C. § 103 that became effective on March 16, 2013. Here, Petitioner applies "an effective filing date of no earlier than November 4, 2005." Pet. 6. Accordingly, we apply the pre-AIA version of § 103; however, our decision would be no different under the AIA version of the statute.

[3] Toge, JP 2002-291889 A, published October 8, 2002 ("Toge," Ex. 1044). Exhibit 1044 includes a Japanese-language document and an English translation of that document. *See* Ex. 1052 (translator declaration for Toge).

[4] Burton et al., WO 2004/032719 A2, published April 22, 2004 ("Burton," Ex. 1050).

[5] Kumar et al., U.S. Patent App. Pub. 2002/0198473 A1, published December 26, 2002 ("Kumar," Ex. 1008).

[6] Kisner et al., U.S. Patent 5,309,921, issued May 10, 1994 ("Kisner," Ex. 1051).

II. ANALYSIS

A. Principles of Law

In an *inter partes* review, "the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). Petitioner ultimately bears the burden of persuasion to prove unpatentability of each challenged claim by a preponderance of the evidence. 35 U.S.C. § 316(e). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

Under pre-AIA 35 U.S.C. § 103(a), a claim is unpatentable as obvious 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); *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on 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 ordinary skill in the art; and (4) any objective indicia of nonobviousness.[7] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). An obviousness determination requires finding a

[7] Patent Owner does not assert any objective indicia of nonobviousness. *See generally* PO Resp.

reason to combine accompanied by a reasonable expectation of achieving what is claimed in the challenged patent. *See Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016). "[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *KSR*, 550 U.S. at 419–20.

B. Level of Ordinary Skill in the Art

We consider the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time the invention was made.[8] *See Graham*, 383 U.S. at 17–18. The parties agree that a person of ordinary skill in the art (sometimes referred to herein as a POSITA) would have had:

> at least a bachelor's degree in mechanical engineering, electrical engineering, computer science, biomedical engineering, or a similar technical field, with at least two years of relevant product design experience working with diagnostic sensor systems and network data systems, such as networked PAP machines. Additional experience could substitute for less education, and additional education could likewise substitute for less experience.

Pet. 12–13 (citing Ex. 1003 (Kirkness Decl.) ¶¶ 44–46); PO Resp. 7–8.

Because the proposed level of ordinary skill in the art is consistent with the cited prior art and is undisputed on this record, we adopt it for purposes of this Decision. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (indicating that the prior art itself may reflect an appropriate skill level).

[8] For purposes of this Decision, we apply a priority date of November 4, 2005. *See supra* n.2.

C. Claim Construction

In AIA proceedings we interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b). Under this standard, we construe the claim "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.*

Petitioner states that it adopts Patent Owner's interpretation of various claim terms as described in Patent Owner's opening claim construction brief in the Ohio case. Pet. 14 (citing Ex. 1054, 12, 13). The claim terms are recited in limitations 1[a.iii]/7[a.iii]/12[a.iii] and 1[a.vi]/7[a.vi]/12[a.vi]. *See id.* at 13–14. These claim limitations are not in dispute on this record.

Although Patent Owner asserts that "[n]o express construction is necessary for the Board to resolve the instant dispute," Patent Owner in fact addresses the construction of the term "retransmit." *See* PO Resp. 8, 32; Sur-reply 19–21. However, as discussed below (*see supra* Section II.E), we need not reach Patent Owner's arguments regarding the claim limitations that recite the word "retransmit" (i.e., claim limitations [1.c.i] and [7.c.i]).

We find it unnecessary to construe any claim term to resolve the issues in this case. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that "we need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Overview of Asserted Prior Art

1. Toge (Ex. 1044)

Toge, titled "Remote monitoring method for a medical device," is the October 8, 2002 publication of Japanese application P2001-96730. Ex. 1044, codes (21), (43), (54).

Toge "pertains to a remote monitoring method for monitoring the condition of a patient using a positive pressure artificial respiration assisting device remotely." *Id.* ¶ 1. We reproduce Toge's Figure 1 below.

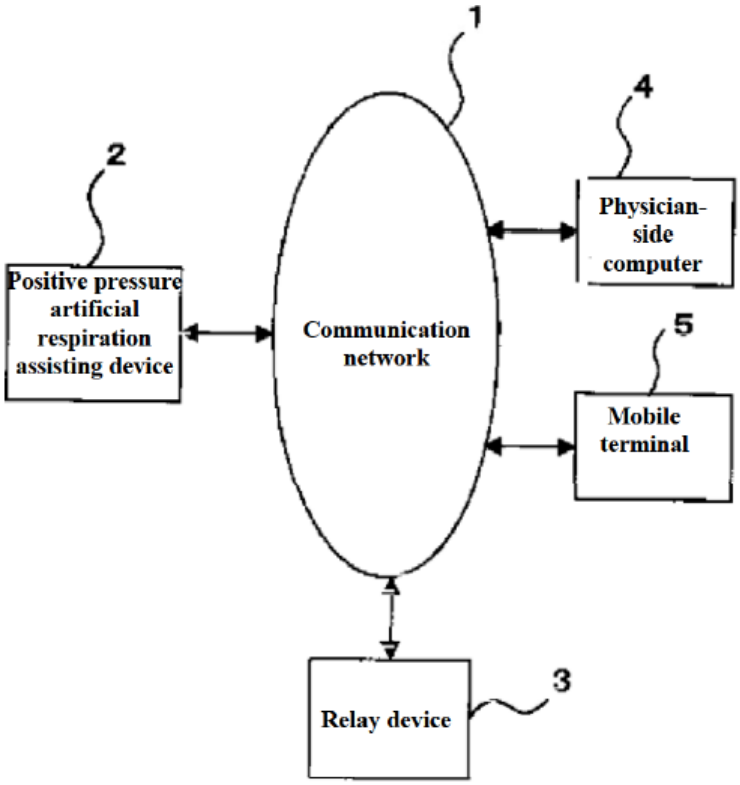


Figure 1 depicts a remote telemedicine system. *Id.* ¶ 8. The system includes positive pressure artificial respiration assisting device 2, relay device 3, and physician-side terminal devices, specifically physician-side computer 4 and mobile terminal 5, which are all connected to communication network 1. *Id.* ¶ 8. Communication network 1 may be "a public telephone network, the

Internet, a mobile communication network, or a dedicated line network." *Id.* ¶ 9.

Toge teaches that relay device 3 receives data transmitted from positive pressure artificial respiration assisting device 2 and transmits it to the physician-side computer 4. *Id.* ¶ 16. "[M]edical institution personnel . . . can operate the physician-side computer 4 to send a data download request to the relay device 3 and download the necessary data onto the physician-side computer 4" and can operate physician-side computer 4 to set necessary data for positive pressure artificial respiration assisting device 2. *Id.* ¶ 18.

According to Toge, "mobile terminal 5, in the possession of a physician or nurse, is capable of being mobilized in emergencies by the physician-side computer 4, relay device 3, or other mobile terminals possessed by hospital personnel," and can be used to set data for positive pressure artificial respiration assisting device 2. *Id.* ¶ 19. "[M]obile terminal 5 includes mobile phones, PHS, PDAs and PocketBell (registered trademark), etc." *Id.*

We reproduce Toge's Figure 2 below.

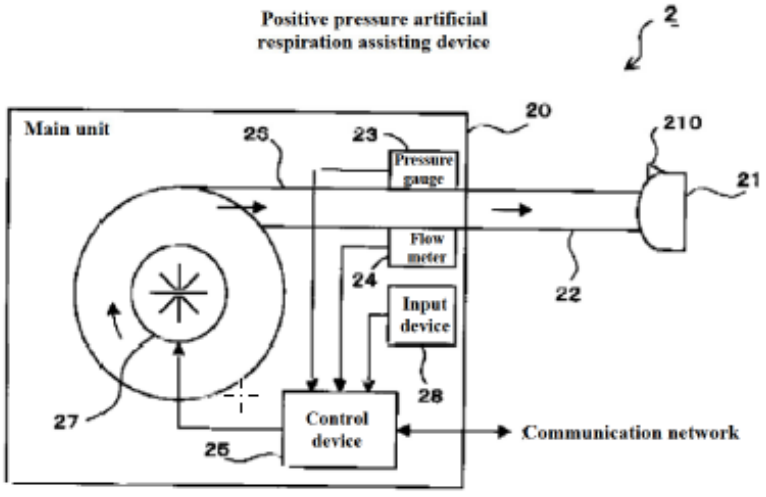


Figure 2 depicts details of positive pressure artificial respiration assisting device 2. *Id.* ¶ 20. Device 2 includes main unit 20 connected via air tube 22 to nasal mask 21. *Id.* ¶ 21. "[M]ain unit 20 is equipped with a pressure gauge 23, a flow meter 24, a control device 25, a flow path 26, a blower 27, and an input device 28." *Id.* ¶ 23. "Positive pressure air is constantly delivered to the nasal mask 21 via the air tube 22 from the main unit 20" and "nasal mask 21 is equipped with an exhalation vent 210 to expel the patient's exhaled breath to the exterior of the nasal mask 21." *Id.* ¶ 22.

We reproduce Toge's Figure 3 below.

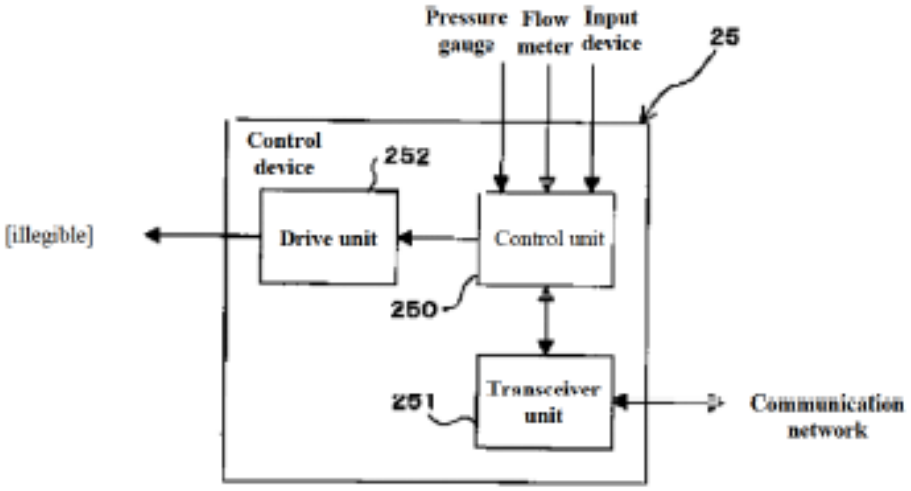


Figure 3 shows the detailed configuration of control device 25 of positive pressure artificial respiration assisting device 2. *Id.* ¶ 20. Control device 25 "comprises a control unit 250, a transceiver unit 251, and a drive unit 252." *Id.* ¶ 23. Control unit 250 can determine operational time, which physicians can use to "determine whether the patient is using the positive pressure artificial respiration assisting device 2 and assess the treatment (patient) compliance." *Id.* ¶ 42.

Toge teaches that the functionality of relay device 3 can be integrated into the positive pressure artificial respiration assisting device 2, such that

device 2 can directly transmit treatment data to the physician-side computer 4 or mobile terminal 5 via the communication network 1. *Id.* ¶ 60. "[P]hysician-side computer 4 or mobile terminal 5 then directly sets the thresholds on the positive pressure artificial respiration assisting device 2 and sends download requests." *Id.* ¶ 61.

2. Burton (Ex. 1050)

Burton, titled "Method and Apparatus for Maintaining and Monitoring Sleep Quality During Therapeutic Treatments," published on April 22, 2004, from PCT Application PCT/US2003/032170. Ex. 1050, codes (21), (43), (54).

Burton relates to "a method and apparatus for delivering therapeutic treatments to patients without adversely affecting their sleep." *Id.* at 1:4–6. We reproduce Burton's Figure 1 below.

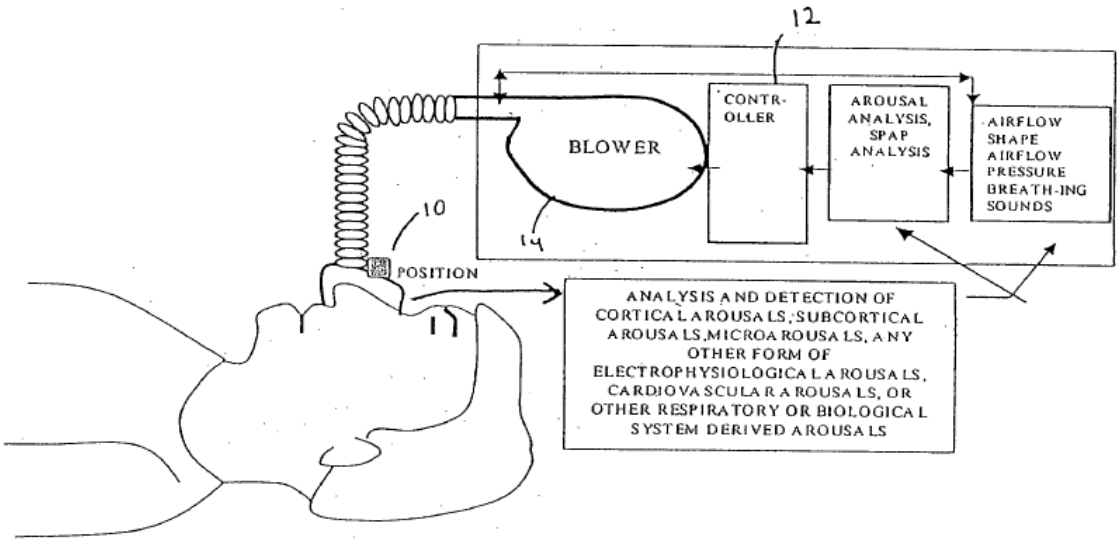


FIG. 1

Figure 1 shows Burton's system, which "includes one or more sensors 10 which detect a patient's physiological parameters, a controller 12 which monitors and determines arousal based on the physiological variables received from the sensor, and a gas delivery apparatus 14 which is controlled by the controller 12." *Id.* at 6:12–15. Burton states that the system "is capable of maintaining the sleep quality of a patient undergoing a therapeutic treatment by sensitizing the therapeutic device to various physiological indicators which predict the onset of arousal and using an adaptive algorithm to modify a patient's therapeutic treatment." *Id.* at 3:21–24. The algorithm "has the capability to be adapted during real-time operation based on any combination of a) empirical clinical data, b) individual patient collected or alternative (to laboratory) collected data (from diagnostic study within sleep laboratory or other alternative site) or c) real-time monitored and analyzed data." *Id.* at 3:25–28.

Burton describes "an algorithm for detecting variation in airflow shape that could be indicative of the incidence or probable onset of upper airway resistance (UAR) or variations of UAR, respiratory event related arousals (RERA) or treatment event related arousals (TERA)." *Id.* at 4:24–27. For instance, Burton explains that the system "would record and note the likelihood of arousal or upper airway flow limitation by way of the shape characteristics of the airflow signal (as derived from a breathing mask circuit)." *Id.* at 4:18–20. According to Burton, "[t]his detection of waveshape characteristics could be achieved by detecting changes in the sequence (1 or more) breathing waveform shapes and then associating these changes with the onset probability or actual incidence of hypopnea, shallow breathing or UAR." *Id.* at 4:20–23.

Burton teaches that a system using the techniques it describes "can predict the UAR, RERA and TERA events or the onset of such events and adjust the treatment to avoid such events." *Id.* at 5:10–12. Burton further teaches that "[a]pnea events, shallow breathing, upper airway resistance and hypopnea events can also be detected and pre-empted by analysis of the change in shape of the high bandwidth monitoring of the airflow waveforms and pressure waveforms." *Id.* at 13:23–26.

3. Kumar (Ex. 1008)

Kumar, titled "System and Method for Real-Time Monitoring, Assessment, Analysis, Retrieval, and Storage of Physiological Data Over a Wide Area Network," is the December 26, 2002 publication of U.S. Application 10/109,958. Ex. 1008, codes (21), (43), (54).

Kumar "relates to remote monitoring of devices over a wide area network," and "to network-based transmission of data from a physiological collecting device." *Id.* ¶ 2. We reproduce Kumar's Figure 1A below.

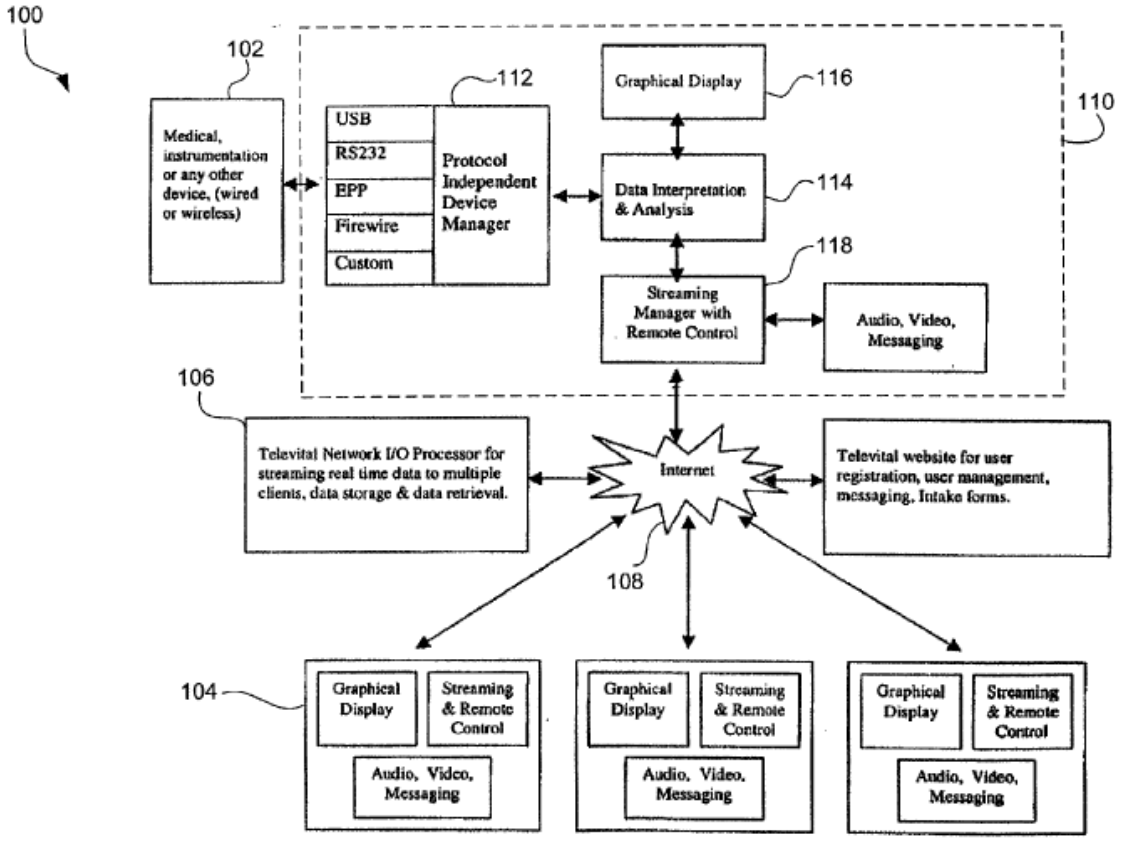


Fig. 1A

Figure 1A shows "a diagram of an exemplary system architecture for network-based monitoring of data from a patient-side physiological collecting device." *Id.* ¶ 22. Architecture 100 includes patient-side devices 102 for collecting data from a patient/client, provider-side devices 104, and central server 106 that implements an engine. *Id.* ¶ 67. "The devices and engine are connected to a wide area network (WAN) 108 such as the Internet, intranet, or extranet," and "[t]he system allows for the real-time Streaming of raw, interpreted, and/or processed physiological data as well as textual/audio/video data from a patient to a health care provider." *Id.*

Patient-side devices 102 may "be connected via a computing device 110, such as a computer, handheld devices such as personal digital assistants (PDAs) and pocket PCs such as IPAQ with Windows CE operating System and Palm devices based on Palm OS[], wireless telephone, or any other computing device, to the WAN." *Id.* ¶ 72. "A protocol independent device manager 112 running on the computing device establishes a two-way communication with a vast array of client-side devices." *Id.*

Kumar teaches "a modular architecture in which the patient-side device and/or the computing device coupled to the patient-side device can send a request to the engine with an identifier of the patient-side device, and the engine will send the appropriate plug-in which allows the computing device to communicate with the patient-side device." *Id.* ¶ 74. Therefore, Kumar's system "may support both plug-and-play web device drivers and customized graphical user interfaces (GUIs) for the various devices." *Id.*

"The system may be implemented using Apache [W]eb Server, MySql on Linux, Oracle on Linux, Java servlets, Applets, HTML, JavaScript, Java, C#, Microsoft's .NET etc." and "the server may be implemented on the Internet, intranet, or an extranet." *Id.* ¶ 87.

4. Kisner (Ex. 1051)

Kisner, titled "Apparatus and Method for Respiratory Monitoring," issued on May 10, 1994, and is directed to "[a] passive, non-invasive, non-contacting apparatus and method for monitoring the respiration of a subject within a monitored environment." Ex. 1051, codes (45), (54), (57).

We reproduce Kisner's Figure 11 below.

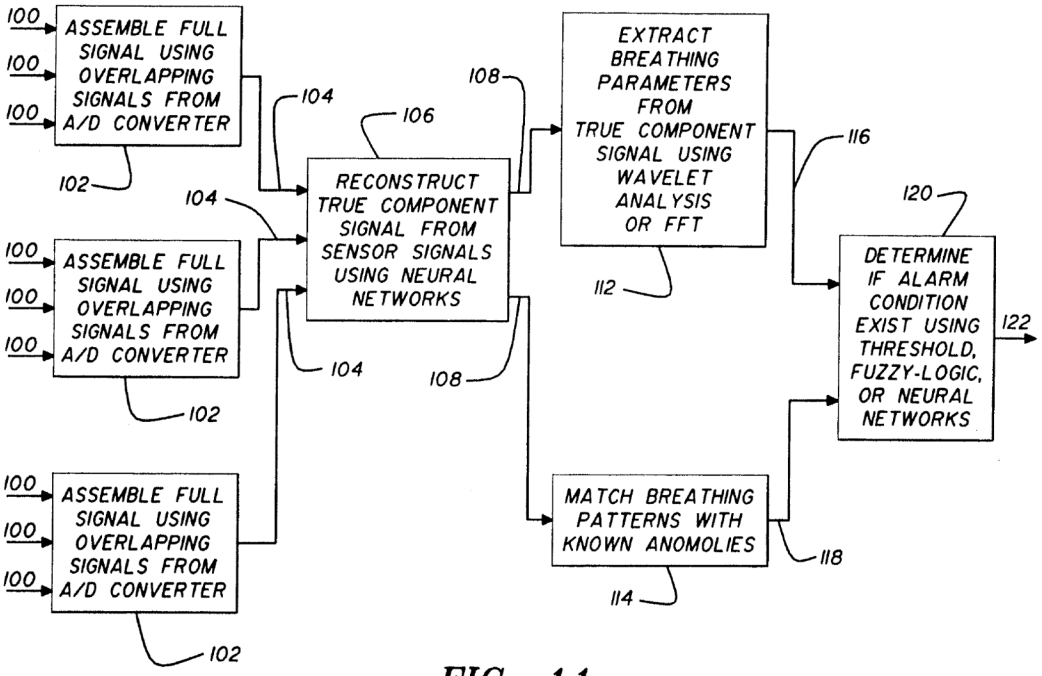


FIG. 11

Figure 11 depicts steps for signal processing conducted within Kisner's microprocessor system. *Id.* at 7:67–8:2. Kisner explains that overlapping signals 100 "are assembled into a full signal at 102, generating sensor signal 104." *Id.* at 13:40–45. "Sensor signals 104 are reconstructed using neural networks or other processing algorithms to form true component signals 108 at 106." *Id.* Kisner further explains:

> Breathing parameters are extracted from true component signals 108 using wavelet analysis or similar means at 112 to generate signal 116. Breathing patterns from signal 108 are matched with known anomalies at 114 to generate signals 118. Signals 116 and 118 are processed using threshold, fuzz-logic, neural networks or similar processing technique at 120 to determine if an alarm or other desired output condition exists which is expressed and communicated by signal 122.

Id. at 13:45–53.

E. Ground 1 – Alleged Obviousness Over Toge, Burton, and Kumar

Petitioner asserts that all challenged claims are unpatentable as obvious over the combination of Toge, Burton, and Kumar. Pet. 15–67. Patent Owner disputes that Petitioner has carried its burden regarding claim limitations [1.c]/[7.c]/[12.c] (directed to a "remote internet site") and [1.c.i]/[7.c.i]/ [12.c.i] (directed to software adapted to "retransmit" data or "independently receive" data). *See, e.g.*, PO Resp. 8, 23.

After considering all of the arguments and evidence presented on the full trial record, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 2, 4, 5, 7–9, 11–14, and 16 are unpatentable as obvious over the combination of Toge, Burton, and Kumar. We find that the deficiencies in Petitioner's arguments regarding the "remote internet site" are dispositive, and thus we need not reach the parties' arguments regarding the "retransmit" data or "independently receive" limitations. We address the parties' arguments concerning the "remote internet site" below.

1. Claim Limitations [1.c]/[7.c]/[12.c] ("remote internet site")

Claim limitations [1.c]/[7.c]/[12.c] recite a "***remote internet site*** adapted to receive data related to the subject's treatment and the treatment's efficacy." *See* Pet. 79, 81, 83 (emphasis added).

a. Overview of Petitioner's Obviousness Arguments

In arguing the "remote internet site" limitations, Petitioner cites Toge's disclosure of a PAP device connected to a physician-side terminal via a communication network such as the internet. *See* Pet. 49 (citing Ex. 1044 (Toge) ¶¶ 6, 9). Petitioner argues that in light of this disclosure, it would have been obvious to a person of ordinary skill in the art to

implement a "remote internet site" on the physician-side devices to receive data from Toge's PAP. *Id.* (citing Ex. 1003 (Kirkness Decl.) ¶ 215; Ex. 1005 (Chatterjee Decl.) ¶ 147). According to Dr. Kirkness, a person of ordinary skill in the art "would have understood that one common way to access data transmitted over the internet, like the data from Toge's wireless PAP device, is via a remote internet site." Ex. 1003 (Kirkness Decl.) ¶ 214. Dr. Chatterjee further opines that

> [a] person of ordinary skill in the art would have understood that if data can be transmitted through the Internet to and from the physician-side computer, ***the physician-side computer could be implemented as a web server***. As I discussed in Section V.A [¶ 32], web content lives on a web server. It was well within the skill of a person of ordinary skill in the art to host data on the physician-side computer to allow others to access the data through the Internet.

Ex. 1005 ¶ 146 (emphasis added). Thus, Petitioner maps the claimed "remote internet site" to a web server implemented on Toge's physician-side computer that is accessible via a web page request. *See id.*; *see also* PO Resp. 8 n.2, 10.

Petitioner argues in the alternative that if "Toge and the knowledge of a POSITA does not disclose" a "remote internet site," a person of ordinary skill in the art would have been motivated to implement "the remote internet site of Kumar[] in the Toge system." Pet. 49. Petitioner asserts that Kumar's telemedicine system includes a browser-based engine ("a remote internet site") and that a person of ordinary skill in the art "***would have improved the physician-side computer*** of Toge by implementing it with the browser-based engine accessible through web pages as taught by Kumar" for various reasons, including convenience and efficacy, to provide health

access for more people, to leverage advances in mobile computing and wireless communications, and in view of the general market trend to implement consumer devices into intelligent systems. *Id.* at 50–51 (emphasis added) (citing Ex. 1008 (Kumar) at, e.g., ¶¶ 10, 11, 87), 15–17 (citing Ex. 1003 (Kirkness Decl.) ¶¶ 135–40; Ex. 1005 (Chatterjee Decl.) ¶¶ 76–87). Petitioner also asserts that an ordinarily skilled artisan would have been motivated to use Kumar's browser-based engine with Toge's PAP device because it would have enabled data storage in a secure device at a central server for later access and/or analysis. *Id.* at 53 (citing Ex. 1008 (Kumar) ¶¶ 83–84; Ex. 1003 (Kirkness Decl.) ¶ 223; Ex. 1005 (Chatterjee Decl.) ¶¶ 150–53).

We now turn to analyzing the parties' disputes regarding the claimed "remote internet site."

b. Whether a Person of Ordinary Skill in the Art Would Have Modified Toge to Implement a "Remote Internet Site" as Proposed by Petitioner

Patent Owner argues that Petitioner's Toge-alone argument fails as a matter of law because Petitioner has not provided a reason why a person of ordinary skill in the art would have added a remote internet site to Toge's physician-side computer. Patent Owner asserts that Dr. Chatterjee merely states that "the physician-side computer ***could*** be implemented as a web server," while Dr. Kirkness states "it ***would have been obvious*** . . . to utilize a 'remote internet site' to receive the data . . . on the physician side devices of Toge." PO Resp. 12–13 (citing Ex. 1003 (Kirkness Decl.) ¶ 146; Ex. 1005 (Chatterjee Decl.) ¶ 214). Patent Owner argues that "[t]hese conclusory allegations are inadequate to support a finding that a POSITA

would have been motivated to modify Toge's physician-side computer into a web server." *See id.*; *see also* Sur-reply 1–3.

We agree with Patent Owner and find that Petitioner has not carried its burden of explaining why a person of ordinary skill in the art would have implemented a remote internet site in Toge's system in the specific fashion Petitioner asserts (i.e., using the physician-side computer as a web server). As Patent Owner aptly states, the operative question is not merely whether a person of ordinary skill in the art would have modified Toge's system to include a remote internet site, but whether the artisan would have modified Toge's system to include a remote internet site "on a ***physician's client computer***" in accordance with the specific implementation argued by Petitioner. Sur-reply 2.

On this critical question, Petitioner's arguments are thin. Petitioner's declarant Dr. Kirkness states that a person of ordinary skill in the art "would have understood that one common way to access data transmitted over the internet, like the data from Toge's wireless PAP device, is via a remote internet site." Ex. 1003 ¶ 214. This assertion is reasonable. Indeed, prior art of record, such as Kumar, illustrates use of a central server that hosts a browser-based engine that can be accessed through web pages. *See, e.g.*, Ex. 1008 (Kumar) Fig. 1A, ¶¶ 67, 72, 79, Pet. 10.

Petitioner, however, elected to argue a specific implementation, namely that the skilled artisan would have modified Toge's *physician-side computer* to operate as a web server. *See, e.g.*, Pet. 15; Ex. 1005 (Chatterjee Decl.) ¶ 146; Reply 4. We find that this implementation is unsupported on this record. Petitioner has not pointed us to any disclosure in Toge, Burton, or Kumar (or any other prior art reference of record) that teaches or suggests

"that a *doctor's computer* should act a web server hosting sensitive patient data." PO Resp. 9 (emphasis added). And critically, the Petition is silent as to *why* a person of ordinary skill in the art would have selected this implementation in particular. *See, e.g.*, Pet. 49.

In its Reply, Petitioner contends that "at the relevant time, it was common to have the client and server on the same computer which was known as a 'localhost.'" Reply 4 (citing Ex. 1070; Ex. 1069 (Chatterjee Reply Decl.) ¶¶ 4–10; Ex. 2020, 4 ("In a typical client/server based application, the client process and server process can be on the same computer.")). As an initial matter, Petitioner has not pointed to any prior art in the field of networked medical device systems that had such a configuration. But even assuming such a configuration was known and/or common, that is not a sufficient motivation. *See id.* at Sur-reply 1–2. As our reviewing court has held, "[i]t does not suffice to simply be known. A reason for combining must exist." *Virtek Vision Int'l ULC v. Assembly Guidance Sys., In*c., 97 F.4th 882, 887–88 (Fed. Cir. 2024). Here, the Petition lacks any articulated rationale for the proposed modification.

In its Reply, Petitioner argued that making Toge's physician-side computer a server would have "broaden[ed] access to the data." Reply 2. But even this belated contention fails, because it does not explain why a person of ordinary skill in the art would have selected this *specific* implementation. Indeed, other implementations, such as the central server as taught in Kumar, would have "broaden[ed] access to the data." *See, e.g.*, Ex. 2015 (Goodrich Decl.) ¶ 36 (discussing Kumar's system).

Further, Patent Owner persuades us that "no POSITA would have used [the localhost] architecture if the purpose was to provide 'broad access

to data collection and analysis.'" Sur-reply 6. This is because, as Petitioner's own declarant Dr. Chatterjee explains, "[a]n IP packet sent to localhost has the IP address 127.0.0.1 and ***does not actually go out to the Internet***." Ex. 1069 ¶ 8 (emphasis added); *see also* Ex. 1070 (Microsoft Computer Dictionary), 316. Given that the localhost implementation does not utilize data requests over the internet, Petitioner has not sufficiently tied its proposed implementation to the reason it belatedly raised in Reply, namely "broadening access to the data." Reply 2; *see also* Sur-reply 7; Ex. 2003, 4 (indicating that when "the client and server reside in the same machine," this architecture "is not suitable for a web application" because "it can only access data available in a single computer or server"). In short, we find on this record that Petitioner's proposal to implement a web server on Toge's physician-side computer undermines the reason for the modification in the first place (i.e., broadening access to data).

In sum, on the full trial record, we find that Petitioner has not demonstrated by a preponderance of the evidence that a person of ordinary skill in the art would have modified Toge's system to include a remote internet site on a physician's client computer as argued in the Petition.

We now turn to a new argument Petitioner raised during the oral hearing. Specifically, Petitioner's counsel asserted that in its proposed combination, Toge's physician's computer hosting the data and the computer with the remote internet site (for accessing the data) could be more than one machine, e.g., part of a network of machines in a hospital. *See, e.g.*, Tr. 10:1–11:3, 14:12–22, 15:16–24. Counsel contended that "Kumar discloses the same exact thing in terms of having engines or central servers or computers at hospitals, clinics, medical groups." *Id.* at 10:11–13.

This argument is untimely because it was not presented in Petitioner's briefs, and Patent Owner rightly identified it as an impermissible new argument presented for the first time at the oral hearing. *See id.* at 23:11–17, 26:23–27:5, 53:3–22. When asked where in its briefs Petitioner made this argument, counsel pointed to Petitioner's Reply at page 4, footnote 1. *See id.* at 15:16–21. That footnote states: "PO also ignores the fact that a computer can be implemented using multiple machines. *See, e.g.,* EX1001, 18:64-19:4." This brief sentence and citation to the challenged patent (not the asserted prior art) does not fairly inform Patent Owner (or the Board) that Petitioner proposes an implementation *in Toge* that uses more than one machine. Indeed, the body of the text associated with footnote 4 defends having "the ***same machine*** as both a client and a server" in Toge (i.e., "Toge's physician-side computer"). Reply 5 (emphasis added). Petitioner's declarant likewise defended the implementation of "a client and server both residing on the ***same*** computer," without ever mentioning that he envisioned the computer being more than one machine. Ex. 1069 (Chatterjee Reply Decl.) ¶ 8; *see also id.* ¶ 6 (Dr. Chatterjee stating: "[I]n general, you can have a client on the ***same machine*** as the server."), ¶ 19 (discussing "***a*** machine ***serving as both*** client and server") (all emphases added). For the above reasons, we find that Petitioner's argument that Toge's physician's computer hosting the data and the computer with the remote internet site are more than one machine is untimely and inconsistent with the arguments in the Petition, Reply Brief, and expert declarations, and we do not consider it.

We find that Petitioner's arguments on Ground 1 are insufficient for an additional, independent reason. Specifically, Patent Owner argues that Toge is a "push" system, and changing it "to require client devices to request

data from a web server—which uses a pull protocol instead of a push protocol—would have interfered with Toge's ability to push crucial treatment data to the physician-side devices." PO Resp. 11–12; *see also* Ex. 2015 (Goodrich Decl.) ¶¶ 43–44; Ex. 2002, 2–3 (describing HTTP as "a pull protocol" where "information can only be pulled from a web server after a client's request" and stating that "[t]he web server never pushes information to a client without a request"); Ex. 2016 (Borkholder Decl.) ¶¶ 44–50. According to Patent Owner, "[i]n Toge's system infrastructure, the PAP device pushes treatment data to physician-side computer and mobile device without any request," which allows physicians to be alerted to emergencies. PO Resp. 6; *see also id.* at 5 (citing Ex. 1044 (Toge) ¶¶ 39, 47, 54, 61); *see also id.* at 10–12, 17–21.

We find that Patent Owner here identifies an important shortcoming flowing from Petitioner's proposed modification, and that Petitioner does not adequately respond. As an initial matter, Petitioner does not persuasively demonstrate that in the modified system, Toge's PAP would remain a push system. Dr. Chatterjee testifies that "[w]eb servers use HTTP," and "[t]hese HTTP servers store the Internet's data and provide the data ***when it is requested*** by HTTP clients." Ex. 1005 (Chatterjee Decl.) ¶¶ 32, 168 (explaining that in the Toge's system as modified per Petitioner's arguments, the physician-side mobile device would request the patient's data from the physician-side computer) (emphasis added). Other evidence of record similarly indicates that web servers operate as a pull model, where information is sent in response to a request. *See* Ex. 2001, 25 (discussing the sender-push models versus receiver-pull models like "the HTTP-based web access system"); Ex. 2024 at 2–3 ("The client-server model operates on a

request-response mechanism, where clients send requests to the server, and the server responds with the requested information or service."); Ex. 2002, 2–3 (describing HTTP as "a pull protocol" where "information can only be pulled from a web server after a client's request," and stating that "[t]he web server never pushes information to a client without a request").

In Reply Dr. Chatterjee asserts that "[t]here is nothing inherent about a machine serving as both a client and server that prevents it from pushing data as soon as it is received" and that "[i]f the server identifies an emergency, the server could automatically push out such data." Ex. 1069 (Chatterjee Reply Decl.) ¶¶ 19–20. We find this testimony unpersuasive on this record because it is not supported by citation to any objective evidence of record. *See id.*; *see also* 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."); *Xerox Corp. v. Bytemark*, IPR2022-00624, Paper 9, 16 (PTAB 2023) (precedential). This testimony is also inconsistent with statements in his opening declaration explaining that a web server "provide[s] the data when it is requested by HTTP clients" (Ex. 1005 (Chatterjee Decl.) ¶ 32) and with other evidence of record indicating that the web-based client-server model operates as a pull system. *See, e.g.*, Ex. 2001, 25; Ex. 2024 at 2–3; Ex. 2002, 2–3.

Additionally, Petitioner and Dr. Chatterjee did not dispute or even engage with testimony from Patent Owner's declarant that "general web push solutions" were not introduced until after the priority date of the '921 patent, and thus "the web client would need to perform a data **pull** action rather than receiving a data push from the web server." Ex. 2015 (Goodrich Decl.) ¶ 57 (citing HTTP/2 Server Push and Google Cloud Messaging). For

at least these reasons, we find unpersuasive Dr. Chatterjee's testimony that "the server could automatically push out [emergency] data."[9]

Petitioner and Dr. Chatterjee also argue that "even in a pull system, data can be sent effectively in real time" to address emergency situations because "when the physician's web client is active, it could continuously query the server to see if new data has been received." Reply 7; Ex. 1069 (Chatterjee Reply Decl.) ¶ 20. Dr. Chatterjee's statement here is also unpersuasive because it too lacks any supporting citation to objective evidence of record. Additionally, neither Dr. Chatterjee nor Petitioner disputed or even engaged with Dr. Goodrich's testimony that the 1999 HTTP/1.1 specification dictating how web servers behave would time out a web connection after a period of time (thus hampering the ability to continuously query the server) and Dr. Borkholder's testimony that continuously querying the server would have "require[d] proactive monitoring by physicians" and "made the system more difficult for the physician to use as they are extremely limited in their time." Ex. 2015 (Goodrich Decl.) ¶ 57; Ex. 2016 (Borkholder Decl.) ¶ 49.

Petitioner also argues that Kumar's system is able "to transmit patient data in real-time, for use in emergency situations." Reply 7. However, given the state of the art as discussed above, we agree with Patent Owner that Petitioner's reliance on "Kumar's real-time streaming embodiment still requires the physician to log into the website to request the real-time data," a

[9] Petitioner's other declarant, Dr. Kirkness, testified that he is not a "specific expert in the field" of network architecture and does not know "all of the limitations." Ex. 2019 (Kirkness Tr.) 83:6–19 (cited at PO Resp. 17).

scenario that would be subject to the time-out issues Patent Owner raised (and Petitioner did not dispute). Sur-reply 11 (citing Ex. 1008 (Kumar) ¶¶ 90–93 (disclosing a physician logged into a web page displaying a list of patients and patient session information), Figs. 5, 8 (depicting a physician logged into a webpage where logged information and data is available); Ex. 2015 ¶ 57). Accordingly, we find that Petitioner's proposed modification would have the drawback of reducing the utility and convenience of this Toge's emergency alert feature, e.g., by requiring the physician to continuously query the server to see if new data had been received, which would be subject to connection time outs. *Compare* Ex. 1069 (Chatterjee Reply Decl.) ¶ 20 (proposing continuous querying); *with* Ex. 2016 (Borkholder Decl.) ¶ 49 (addressing inconvenience of continuous querying/proactive monitoring); Ex. 2015 (Goodrich Decl.) ¶ 57 (addressing web connection timeout).

Petitioner argues that Toge's system is not limited to operating in emergency situations because Toge teaches monitoring a patient's periodic condition and storing data for later transmittal. *See, e.g.*, Reply 6; Ex. 1069 (Chatterjee Reply Decl.) ¶ 21; Ex. 1044 (Toge) ¶¶ 7, 44, 47. While we agree that Toge's purpose is not *limited* to pushing emergency information, it is a feature that Toge repeatedly touts. *See, e.g.*, Ex. 1044 (Toge) ¶¶ 19, 39, 46–47, 55–57. As noted, Petitioner's proposed modification would have the drawback of reducing the utility and convenience of this feature. On the flip side, Petitioner fails to identify any clear, tangible benefits gained from modifying Toge's system as proposed. *See, e.g.*, Pet. 49. Our reviewing court advises that "the benefits, both lost and gained, should be weighed against one another." *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340,

1349 n.8 (Fed. Cir. 2000). Here, such a weighing does not favor Petitioner's proposed modification.

It is true that a motivation to combine "does not require a combination to be the most preferred or most desirable prior art combination, just that it be *an* option known to a POSITA." Reply 12 (citing *Novartis Pharms. Corp. v. West-Ward Pharms. Int'l Ltd.*, 923 F.3d 1051, 1059 (Fed. Cir. 2019); *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004)). Here, however, after considering the arguments and cited evidence of record, we find that the Petition lacks the necessary "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at 418. Instead, Petitioner's argument based on Toge alone appears to be based "on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention." *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998).

For the above reasons, we find that Petitioner has not carried its burden of demonstrating that a person of ordinary skill in the art would have modified Toge in the manner proposed by Petitioner to result in a system that teaches or suggests claim limitations [1.c]/[7.c]/[12.c].

c. Whether a Person of Ordinary Skill in the Art Would Have Modified Toge in View of Kumar to Implement a "Remote Internet Site" as Proposed by Petitioner

Petitioner alternatively argues that "[a] POSITA would have improved the physician-side computer of Toge by implementing it with the browser-based engine accessible through web pages as taught by Kumar." Pet. 15; *see also id.* at 52–53. Petitioner argues that a person of ordinary skill in the art would have been motivated to do so for "convenience and efficiency," including because "the physician or provider can access the data anywhere

using an Internet browser, as opposed to downloading specialized software." *Id.* at 15–16. Petitioner additionally argues that a person of ordinary skill in the art would have made the asserted modification because "Kumar's plug-and-play user interfaces would allow anyone with an Internet browser to access the data" and "the market was looking for any consumer device to connect to the Internet." *Id.* at 16–17. Petitioner argues that the modification would have facilitated data sharing and analysis, including by "allowing a provider to seek expert consultation for clinically difficult cases, by sharing the patient history and medical test results online." *Id.* at 53.

Like Petitioner's Toge-alone argument, Petitioner again argues that the skilled artisan would have implemented the Toge and Kumar combination by operating Toge's physician-side computer as a central server from which the artisan could have accessed PAP data via a remote internet site. *See, e.g.*, Pet. 15; Ex. 1005 (Chatterjee Decl.) ¶ 155.

Regarding Petitioner's proposed modification of Toge in view of Kumar, Patent Owner is again correct that the operative question is not merely whether a skilled artisan would have modified Toge to include Kumar's remote internet site somewhere in Toge's system, but "whether it would have been obvious to modify Toge's system to include a 'remote internet site' on a ***physician's client computer***," as Petitioner argues. Sur-reply 2. The analysis above discussed for Petitioner's Toge-alone argument applies equally to its Toge-Kumar argument, and for the same reasons, we find that Petitioner has not satisfied its burden of demonstrating that a person of ordinary skill in the art would have modified Toge in view of Kumar in the manner proposed by Petitioner to result in a system that teaches or suggests claim limitations [1.c]/[7.c]/[12.c].

The Toge/Kumar combination fails for an additional reason, namely, "Kumar does not disclose implementing a web server on a doctor's computer." PO Resp. 1. We find that Kumar's disclosure of a central web server that is separate from the physician-side devices undermines Petitioner's position that it would have been obvious to modify Toge's physician-side computer to include a server. *See, e.g.*, Ex. 1008 (Kumar) Fig. 1A (depicting physician-side devices 102 separate from central server 106), ¶ 11 ("The engine manages transmission of the data from the patient-side device to the provider-side device."), ¶ 67 ("As shown [in Fig. 1A], the system includes one or more patient-side devices 102 for collecting data from a patient/client, one or more provider-side devices 104, and an engine implemented on a central server 106.").

Petitioner's additional proffered motivations for combining Toge and Kumar are unavailing. *See* Pet. 15–18, 49, 52–53. The asserted benefits of convenient access to and sharing of data through web pages by physicians and "anyone with an Internet browser" (*id.* at 1–16, 53) are insufficiently explained on this record given Dr. Chatterjee's testimony that the localhost model does not use the internet. *See supra*; *see also* Ex. 1069 (Chatterjee Reply Decl.) ¶ 8. Petitioner's asserted motivations of "leverag[ing] the advances in mobile computing" and "general market trend to implement consumer devices into intelligent systems" (*id.* at 16–17) are not tied to the specific implementation discussed above and do not rectify the deficiencies discussed above regarding that implementation.

For the all of above reasons, we find that Petitioner has not carried its burden of demonstrating that a person of ordinary skill in the art would have

modified Toge in view of Kumar in the manner proposed by Petitioner to result in a system that teaches or suggests claim limitations [1.c]/[7.c]/[12.c].

2. Conclusion – Ground 1

In sum, after considering the arguments and cited evidence of record, we find that Petitioner has not shown by a preponderance of the evidence that that claims 1, 2, 4, 5, 7–9, 11–14, and 16 are unpatentable as obvious over the combination of Toge, Burton, and Kumar.

F. Ground 2 – Alleged Obviousness Over Toge, Burton, Kumar, and Kisner

Petitioner asserts that all challenged claims are unpatentable as obvious over Toge, Burton, Kumar, and Kisner. Pet. 67–73. Petitioner relies on its arguments for Ground 1, except "[t]o the extent that the prior art combination does not disclose limitation 1[c.ii]/7[c.ii]/12[c.ii], reciting 'wherein the sensor data from the sensors is processed by the first processor using one or more of the signal processing techniques from the group consisting of . . . a wavelet analysis." *Id.* at 69. For these limitations, Petitioner relies on Kisner. *Id.* at 69–73.

We agree with Patent Owner that Petitioner's arguments for Ground 2 do not address the deficiencies discussed above for Ground 1. *See* PO Resp. 33. Accordingly, considering all of the arguments and evidence presented on the full trial record, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 2, 4, 5, 7–9, 11–14, and 16 are unpatentable as obvious over the combination of Toge, Burton, Kumar, and Kisner.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 2, 4, 5, 7–9, 11–14, 16 of the '921 patent are unpatentable.

In summary:

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2, 4, 5, 7–9, 11–14, 16	103(a)	Toge, Burton, Kumar		1, 2, 4, 5, 7–9, 11–14, 16
1, 2, 4, 5, 7–9, 11–14, 16	103(a)	Toge, Burton, Kumar, Kisner		1, 2, 4, 5, 7–9, 11–14, 16
Overall Outcome				1, 2, 4, 5, 7–9, 11–14, 16

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 2, 4, 5, 7–9, 11–14, and 16 of U.S. Patent No. 11,375,921 B1 are unpatentable; and

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

For PETITIONER:

Lisa Nguyen
David Tennant
Grace Wang
PAUL HASTINGS LLP
lisanguyen@paulhastings.com
davidtennant@paulhastings.com
gracewang@paulhastings.com

For PATENT OWNER:

James Hannah
Jeffrey Price
Jenna Fuller
Jeffrey Eng
KRAMER LEVIN NAFTALIS & FRANKEL LLP
jhannah@kramerlevin.com
jprice@kramerlevin.com
jfuller@kramerlevin.com
jeng@kramerlevin.com