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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RESMED CORP.,

Petitioner,

v.

CLEVELAND MEDICAL DEVICES INC.,

Patent Owner.

Case No. IPR2025-00160
U.S. Patent No. 11,786,680

**PETITIONER'S REPLY TO
PATENT OWNER'S RESPONSE**

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I. INTRODUCTION

The Petition established that the challenged claims of the '680 Patent (directed to a networked PAP device) would have been obvious over Toge in view of the knowledge of a POSITA or in view of Kumar, Burton, and Kisner. The POR confirms this. Indeed, PO primarily argues that a POSITA would not have implemented the Toge system to include a “remote internet site” or a patient cell phone. But PO's arguments are unsupported, ignores disclosures in Toge and Kumar, and overlooks the law.

II. GROUND 1: THE CHALLENGED CLAIMS ARE UNPATENTABLE OVER TOGE IN VIEW OF KUMAR AND BURTON

A. Toge in view of Kumar renders obvious a “remote internet site” and database that is hosted on at least one server

The Petition established that a POSITA would have been motivated to implement Toge's system using Kumar's browser-based engine, which renders obvious a “remote internet site” having a “database that is hosted on at least one server.” Pet., 45-46; Kirkness, ¶¶212-214; Chatterjee, ¶¶129-131. In particular, the Petition details how Kumar's browser-based engine could be “accessed through web pages and is implemented on an Internet web server” (*remote internet site*), and patient data (e.g., PAP data) could be “stored in a secured storage device at the central server for later access, replay, and/or analysis” (*database hosted on at least one server*). Pet., 45-46 (emphasis omitted); Kirkness, ¶¶212-213; Chatterjee,

¶¶129-131. PO does not dispute that Toge in view of Kumar discloses these limitations.

B. A POSITA would have been motivated to implement Toge's PAP system to include Kumar's browser-based engine (*remote internet site*)

PO erroneously argues that a POSITA would not have been motivated to implement Toge with Kumar where Toge's physician-side computer is configured as a web server because "(1) Toge's physician-side computer operates as a client device and client and server would not be on the same computer; and (2) implementing the physician-side computer only as a web server, would have interfered with Toge's purpose." POR, 11. PO is wrong for a number of reasons as detailed below.

1. The architecture representing Toge's physician-side computer configured as a web server would not have dissuaded a POSITA from implementing it

PO first argues that a POSITA would not have been motivated to implement Toge's physician-side computer as a web server because "it violates the principle that 'the client and server are not on the same computer.'" POR, 12. But as Dr. Chatterjee explained, there is no such immutable "principle." EX2018, 10:14-16 ("[I]n general, you can have a client on the same machine as the server"); *see also* Chatterjee Reply, ¶¶4-9. Indeed, at the relevant time, it was common to have the client and server on the same computer, which was known as a "localhost." *See*

EX1071; Chatterjee Reply, ¶8. PO's own cited references confirm that a machine often serves as both a client and server, which was a well-known design choice. *See* EX2020, 4 (“In a typical client/server based application, the client process and server process can be on the same computer”); *see also* Chatterjee Reply, ¶5 (“During the relevant period, it was a well-known design option to use the same machine as both a client and server”). Thus, having the same machine as both a client and a server was a well-known and oft-employed system configuration that a POSITA would have naturally considered for implementation of a web server within Toge's PAP system using Toge's physician-side computer. Chatterjee Reply, ¶¶4-10.

PO then alleges that the Toge web server configuration would have presented “security vulnerabilities,” suggesting that Toge's physician-side computer implemented as a web server could not be made secure. POR, 12 (“Separating the user layer and database layer onto different machines is a fundamental security practice for web applications, particularly given web server vulnerabilities.”). This is incorrect. As a threshold matter, all systems have security risks, and a POSITA implementing the networked PAP device of Toge would have considered known ways to mitigate such risks. *See Elekta Ltd. v. ZAP Surgical Sys., Inc.*, 81 F.4th 1368, 1374 (Fed. Cir. 2023) (motivation to combine “assumes that a skilled artisan is a person of ordinary creativity with common sense, common wisdom, and common knowledge”).

PO and its expert, Dr. Goodrich, ignore the fact the architecture would be sufficiently secure if properly implemented in a manner well-known to a POSITA. *See* Chatterjee Reply, ¶¶11-17; *see also*, EX2018, 15:3-7 (“[T]he answer to your question about security limitations is going to be different [] if the client and server ***are implemented in a proper way***”) (emphasis added); EX2019, 30:7-14 (“Of course, confidentiality is an issue, and you could solve those issues through two methods. One is encryption, and two, meeting the HIPAA requirements of, you know, distribution of data, and that required either specific consent or the removal of data that was identifying. So those features, I think, were well known.”). For example, the source of one PO’s cited references discloses different design options to provide database security that could have been implemented on a machine serving as both a client and server. *See* EX1071; EX1072; Chatterjee Reply, ¶15.

PO next asserts that if Toge’s physician-side computer was implemented as a web server “performance reductions [] would have ensued,” caused by “contention for the CPU(s), memory, network bandwidth, and input/output resources on th[e] machine.” POR, 13, 14. To begin with, PO fails to describe any specifics of these “performance” issues for the Toge-Kumar system. *See id.* Regardless, performance can be addressed in a number of ways as part of the implementation of the system, and a POSITA would have been more than capable of doing so. *See Elekta*, 81 F.4th at 1374; *see also* Chatterjee Reply, ¶¶16-17 (“[A] POSITA would have been aware

of options to mitigate” performance issues, including “implementing other design enhancements” and/or “using different hardware”). More importantly, PO and its expert suggest that the user layer and the database layer should be on separate machines (POR, 12; Goodrich Decl., ¶¶46-47), which could lead to different and potentially greater performance issues. Chatterjee Reply, ¶16. *See also Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (“[A] given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate a motivation to combine”); DI, 35.

Finally, PO alleges that configuring Toge’s physician-side computer as a web server would have “interfered with Toge’s purpose” “to push ‘necessary’ or ‘crucial’ data to physician-side devices so that physicians can monitor their patients and take emergency action when needed.” POR, 15. As a preliminary matter, PO has improperly limited Toge’s entire “purpose” to a singular embodiment for emergency situations. But Toge is broader. *See* Chatterjee Reply, ¶21 (“[T]ransmitting PAP data to a physician in emergency situations is not Toge’s only purpose”); DI, 35. Under “Problems to be Solved by the Invention,” Toge states that “[t]he present invention[’s]...objective is to enable remote monitoring of the patient's condition during the use of a positive pressure artificial respiration assisting device or the condition of the positive pressure artificial respiration assisting device itself.” EX1044, [0005]. Toge’s system monitors, for instance, a patient’s breathing rate

and oxygen saturation levels both “in real-time or at regular intervals” such that “physicians can also know the real-time or *periodic condition* of the patient.” EX1044, [0044] (emphasis added). In other words, Toge's PAP can transmit treatment data in “real-time [allowing] physicians [] [to] address emergencies involving the patient” (EX1044, [0046]) or can be stored in the memory of the PAP device and be later transmitted. See EX1044, [0007] (describing a “wired communication network for transmitting treatment data stored in the memory” of the PAP); see also Chatterjee Reply, ¶¶18-21. Accordingly, PO wrongly concludes that the architecture of a Toge physician-side computer web server configuration would eliminate “Toge's purpose of pushing, without request, ‘necessary’ or ‘crucial’ [] treatment data.” POR, 17.

Moreover, PO erroneously interprets the combination of Kumar's web-based engine with Toge's PAP system as eliminating the ability of Toge's PAP to push data to physician-side devices, insisting that those devices must “request[]” or “pull[]” data from the web-based engine/remote internet site. POR, 16-17. PO points to no support in Toge or Kumar for its limiting conclusion because it cannot. The Kumar networking system is, in fact, designed for the type of real-time transmissions that PO alleges its implementation “destroys.” For example, Kumar describes “a *browser-based engine* [that] supports *real-time streaming* ... of raw, interpreted, and processed physiological data ... from a patient/client to a health care

provider.” Pet., 27-28, 63-64; Kirkness, ¶¶161, 278; Chatterjee, ¶¶100, 192; EX1008, [0010]. Like Toge, Kumar discusses its telemedicine networking system as one that allows the “*transmi[ssion] [of] signals in real-time*, while *simultaneously storing* data,” in addition to “providing *treatment in real-time* to the patient.” EX1008, [0009], [0014]; Pet., 27-28, Kirkness, ¶¶160-162; Chatterjee, ¶183.

Dr. Chatterjee confirms the ability of Kumar's system to transmit patient data in real-time, for use in emergency situations, for example. Chatterjee, ¶77 (“internet-based, *real-time access*” to patient information could “*help identify medical emergencies*, for example, if the patient stopped breathing altogether”); *see also* EX1008, [0007]; EX1044, [0054]-[0057]. PO's conclusion that patient data could only be accessed from Kumar's web-based engine upon “request” is erroneous. *See* Chatterjee Reply, ¶¶18-21. Put simply, even in a pull system, data can be sent effectively in real-time. *See, e.g., id.* ¶20 (describing how “[e]ven if the web clients could only pull information,” the system could be designed such that the server could “automatically push out,” or the client could “continuously query the server” for data indicative of an emergency situation). To the extent PO argues that Toge's physician computer implemented as web server would have been unable to receive data transmitted in real-time from a patient's PAP, that conclusion is also faulty for the reasons discussed above.

Finally, not only are PO's arguments against a motivation to combine Toge and Kumar mistaken, but they also ignore the fact that 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. *See 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). Accordingly, a POSITA would have been motivated to implement Toge's physician-side computer as a web server.

2. A POSITA would have been motivated to implement Toge's physician-side computer as a web server (*remote internet site*) because of the numerous advantages

The Petition extensively details the significant benefits of using a remote monitoring system like Kumar's browser-based engine in Toge's PAP system. Pet., 18-20, 29; Kirkness, ¶¶137-144; Chatterjee, ¶¶70-81. PO cherry-picks a few of Petitioner's motivations to combine Toge and Kumar and asserts that they are "nonexistent motivations" for being "either generic, already achieved by Toge, or would have introduced technical obstacles that would have been a non-motivating factor." POR, 17-18. PO's conclusory allegations are inaccurate and ignore the context of the motivations, and the numerous other motivations articulated in the Petition and by Drs. Kirkness and Chatterjee. *See* DI, 36-38.

First, PO denigrates as "generic" "advances in mobile computing" as a rationale to combine Toge with Kumar. POR, 18. PO's conclusion takes this

rationale out of its proper context. Dr. Chatterjee describes the “core benefits” in using the internet in telemedicine (i.e., IoT) such as “automation, real-time access to information, data collection, improved efficiency, and cost reduction.” Chatterjee, ¶¶75-79. As Dr. Chatterjee explains, a POSITA’s knowledge of these “core benefits” coupled with the concomitant “advances in mobile computing” and the “general market trend[]” of combining the internet with (e.g., medical) devices would have provided the motivation for a POSITA to combine Toge’s networked PAP system with Kumar’s remote internet, web-based engine. *See, e.g.*, Chatterjee, ¶74 (“A person of ordinary skill in the art improving a networked PAP system, like that described in Toge, would have looked at other ways such networked PAP systems had been implemented, like that in Kumar.”). A POSITA would have been motivated to increase computing efficiency and patient compliance and treatment through the implementation of mobile computing advances and wireless communications in the Toge system. *Pet.*, 4, 18-19; Kirkness, ¶¶93, 138; Chatterjee, ¶¶75-79.

Second, PO dismisses motivating benefits such as the convenience and efficiency of a Toge-Kumar PAP system for physicians and patients as being “already achieved by Toge’s system that allows data to be accessed anywhere.” *POR*, 18. As the Petition established, however, in a combined Toge-Kumar system, the use of a remote internet site would have allowed patient data to be transmitted to

and accessible from “anywhere in the world” via the Internet, increasing the convenience for physician-providers. Pet., 51-53, 66; Kirkness, ¶¶165-168, 235, 286; Chatterjee, ¶183; EX1008, [0083]. A POSITA would have understood that a Toge-Kumar system would have allowed physicians to remotely “monitor the data, assess therapy and prescribe modifications and/or changes” including using, for example, artificial intelligence to “track trends” in PAP data in real-time and “predict future behaviors and physiological responses” based on a particular patient’s habits. Pet., 19, 65-66; Kirkness, ¶¶116, 165, 235, 285; Chatterjee, ¶¶81, 84. Use of Kumar’s remote internet site also would have allowed for the PAP data of one or multiple patients to be transmitted to and stored in a secured server database for “later access, replay, and/or analysis” from anywhere in the world by multiple providers. Such stored data could have been used to create or add to a system of electronic medical records. Pet., 29, 65; Kirkness, ¶¶138, 165, 235; Chatterjee, ¶¶131, 182. Toge’s unmodified system, limited to the access of patient data using an individual physician’s computer/cell phone, would not have had these vastly improved accessibility benefits.

As detailed in the Petition, such expanded access to patient data would have also benefited patients, providing them with increased physician access given the increasingly widespread internet availability for both patients and physicians; use of a remote internet site “would allow anyone with an Internet browser to access the

data.” Pet., 19; Chatterjee, ¶¶80-81; Kirkness, ¶139 (“Health accessibility has been a longstanding problem,” due to “distance as well as the ability to collect data”). A Toge-Kumar system would have similarly reduced the need and expense of in-person appointments. Pet., 18-19; Kirkness, ¶¶95, 138-39; Chatterjee, ¶¶66, 92 (describing involvement in development of home monitoring equipment to record “sleep patterns for all-night monitoring at the patients home rather than in a hospital”).

Other benefits (disregarded by PO) flow from the increased accessibility the Toge-Kumar combination provides, including better patient care, that would have motivated a POSITA to modify and improve the Toge system. For example, patient data stored at the remote internet site (as opposed to the patient PAP) could have been shared with and analyzed by other physicians to, for instance, allow “a provider to seek expert consultation for clinically difficult cases,” resulting in better diagnosis and treatment through the shared analysis of collected data. Pet., 53, 66-68; Kirkness, ¶¶165, 235, 286. As such, a POSITA would have been motivated to expand to the above-described convenience and efficiency benefits through the incorporation of Kumar’s remote internet site.

Finally, PO argues that many of the benefits derived from “allow[ing] anyone with an Internet browser” to access data is not motivating “because of the obstacles a POSITA would have encountered in making the proposed modification.” POR,

19. Specifically, PO declares that the Toge physician-side computer web server modification is “not suitable” to allow outside access via a web application because “it would encounter a loss of performance and be exposed to security vulnerabilities.” *Id.* Petitioner has already rebutted PO’s alleged “performance” and “security” issues above. *See* Section II.A *supra*. A POSITA would not have been discouraged from making Kumar-based remote internet site modifications to the Toge PAP system based on such reasons. *See* Chatterjee Reply, ¶¶11-17.

C. A POSITA would have been motivated to add a patient cell phone that displays PAP treatment data to Toge’s PAP system based on the disclosures of Kumar

PO does not dispute that the combination of Toge, Kumar, and Burton discloses a patient cell phone able to display patient PAP data. *See* Pet., 45; Kirkness, ¶¶175, 210-211; Chatterjee, ¶¶112, 125-128. PO instead argues that a POSITA would not have been motivated to add a patient cell phone that displays patient data to Toge’s PAP system to because “Toge’s PAP device includes a screen that allows a patient to access and review their treatment data” making the addition of a patient cell phone for data display an “unnecessary redundancy.” POR, 20-21. But the modification is not redundant; rather, the modification provides numerous advantages set forth in the Petition that the PO fails to address.

Specifically, the Petition outlined several advantages to displaying data on a patient cell phone that would have motivated a POSITA to add the feature to the

Toge-Burton-Kumar system. *See, e.g.,* Pet., 33; Kirkness, ¶181; DI, 39. For instance, the Petition explains that a POSITA would have been motivated to also display data on a patient cell phone because a POSITA would have known that it would have been more “beneficial for the patient to review such information” through the patient’s own device, providing increased treatment compliance. Pet., 33; Kirkness, ¶181. Dr. Kirkness describes an additional advantage of displaying PAP data on a patient’s cell phone, that of allowing “the patient to view...and stor[e] such information for *later viewing even when away from the PAP device*,” making the data available for viewing anytime, further “encouraging” patient engagement. *See* Kirkness, ¶¶181, 208 (emphasis added); Pet., 33. Patient data stored solely on the PAP device would not have been easily accessible by the patient at any time or place, a benefit PO ignores. Dr. Kirkness also noted that displaying patient data on a cell phone could have potentially eliminated the “need [for the PAP] to include a screen suitable for displaying data to the patient, which in turn improves the [PAP] device’s portability,” allowing for the development of a “smaller and less expensive PAP device that is easier to use.” Kirkness, ¶181 (explaining that a smaller, more portable PAP device would have been “desirable”). But even if, as PO argues, the PAP and cell phone displays were simply duplicative, it would not have eliminated the motivation to combine the references. *See Medichem*, 437 F.3d at 1165.

PO contends that few cell phones in “the early 2000s” would have been

“capable” of “receiv[ing] and output[ting] data via applications downloaded on the device,” and, as such, replacing the PAP display with a cell phone display would have been “nonsensical.” POR, 21. But it is PO’s argument that is inapt. Dr. Chatterjee extensively described cell phone devices that were available well before the relevant date of patent capable of displaying such data. *See* Chatterjee, ¶¶25-29 (Nokia 9000 Communicator), ¶¶30-31 (PDAs, Palm Pilot, Blackberry), ¶¶106-107 (pocket PCs, iPAQ device). A POSITA would have been aware of those devices in addition to their exponential uptake and would have been motivated to incorporate a patient-side cell phone into Toge’s PAP system for the reasons discussed above. *See* Section II.B *supra*. Moreover, PO’s generic assertion about cell phone functionality in the “early 2000s” misses the mark as it is untethered to the date of patent (2005) and, consequently, is of little relevance.

PO also complains that the Petition makes contradictory arguments regarding a POSITA’s motivation to incorporate a patient-side cell phone into the Toge system (e.g., an ability to use downloadable software) and to implement a remote internet site accessible by a physician-side cell phone (e.g., an ability to access data through web pages as opposed to “downloading specialized software”). POR, 22-23; Pet., 19, 32; Kirkness, ¶¶178-180; Chatterjee, ¶¶107-109. PO’s argument is inapposite. The physician and patient cell phone limitations involve devices with different functionalities within the Toge-Kumar system, used by different people—that is, a

patient cell phone that locally accesses (and stores) patient PAP data versus a physician computer/cell phone that remotely accesses data from a remote internet site/web server. As such, there would have been different benefits and, therefore, motivations for a POSITA to incorporate each cell phone device into Toge's PAP system. In other words, a feature that may have been less advantageous for a physician cell phone (e.g., an ability to access data using specialized downloadable software), could have been more advantageous for a patient cell phone. Regardless, the fact that a device/function "has simultaneous advantages and disadvantages...does not necessarily obviate a motivation to combine." *Medichem*, 437 F.3d at 1165.

In view of the foregoing, a POSITA would have been motivated to incorporate a patient cell phone that displays a patient's PAP data into the Toge-Kumar-Burton PAP system.

**III. GROUND 2: THE CHALLENGED CLAIMS ARE NOT
PATENTABLE OVER TOGE IN VIEW OF THE KNOWLEDGE OF
A POSITA OR TOGE IN VIEW OF KUMAR, BURTON, AND
KISNER**

PO does not make any additional arguments regarding Ground 2 beyond "the same reasons [for] Ground 1." POR, 23. Accordingly, for the reasons discussed above, Toge in view of Kumar and Burton and further in view of Kisner, render obvious the challenged claims.

IV. SECONDARY CONSIDERATIONS OF NONOBVIOUSNESS

PO makes no arguments regarding secondary considerations of non-obviousness and, accordingly, any such arguments have been waived.

V. CONCLUSION

In view of the Petition and foregoing, the Board should find all challenged claims unpatentable.

Dated: December 9, 2025

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that Petitioner's Reply to Patent Owner's Response complies with the word count limitation of 37 C.F.R. § 42.24(a)(1)(i) because the Reply contains a total of 3,548 words, calculated by Microsoft Word's word-count feature. This total excludes the cover page, signature block, and the parts of the Reply exempted by Rule 37 C.F.R. § 42.24(a)(1).

Dated: December 9, 2025

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CERTIFICATE OF SERVICE

I hereby certify that on December 9, 2025, a true and correct copy of the foregoing **PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE** is being served by electronic mail on Patent Owner's counsel of record listed below, pursuant to it Mandatory Notices:

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