

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3 RESMED CORP,)CASE IPR 2025-00159
)U.S. PATENT NO. 11,375,921
4 PETITIONER,)
)CASE IPR 2025-00160
5 V.)U.S. PATENT NO. 11,786,680
)
6 CLEVELAND MEDICAL)
 DEVICES, INC.,)MOBILE VIDEOCONFERENCE
7)DEPOSITION OF
)JASON P. KIRKNESS, Ph.D.
8 _____)
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13 MOBILE VIDEOCONFERENCE DEPOSITION OF JASON P.
14 KIRKNESS, Ph.D., taken remotely before Cheryl A.
15 Rooney, RPR, CRR, Online General Notary Public within
16 and for the State of Nebraska, beginning at 9:01 a.m.,
17 PST, on August 28th, 2025.
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1 A P P E A R A N C E S

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1 (Whereupon, the following proceedings
2 were had, to-wit:)

3 JASON P. KIRKNESS, Ph.D.,
4 having been first duly sworn,
5 was examined and testified as follows:

6 DIRECT EXAMINATION

7 BY MS. FULLER:

8 Q. Good morning, Dr. Kirkness. Can you
9 please state your name and occupation for the
10 record.

11 A. My name is Jason Paul Kirkness. And I
12 am an industry scientific executive.

13 Q. Is there any reason why you cannot
14 give truthful and correct testimony today?

15 A. No.

16 Q. Do you understand that you are here
17 today in regards to your declarations filed in
18 IPR 2025-00159 and IPR 2025-00160?

19 A. Yes.

20 Q. And in each of these IPR proceedings
21 you have filed a declaration, which has been
22 labeled Exhibit 1003. Is it okay today if we
23 refer to them as your '680 declaration and '921
24 declaration?

25 A. Yes.

1 Q. So any time I am referencing your
2 declaration, I'll make sure that I put the
3 patent number in front so you know what one to
4 refer to. Is that okay?

5 A. Yes.

6 Q. That goes also for any other exhibits
7 we will introduce into the deposition. I'll
8 make sure you know the IPR proceeding that the
9 exhibit was filed in. Is that okay?

10 A. Yes.

11 Q. Dr. Kirkness, what was the process in
12 preparing your declarations? Can you elaborate
13 on that process?

14 A. Certainly. So the process of
15 preparing the declarations is first to read the
16 literature -- sorry, read the patent that I am
17 looking to analyze, to understand the patent
18 area, to be able to understand its background,
19 to be able to understand the art, the area of
20 the field in which it's in, to then be able to
21 in depth go into the -- and you know, at the
22 time of reading it, understand how and where the
23 claims are described, understand the claims and
24 their structure, and then to compare that to the
25 existing body or bodies of literature, art work,

1 that are available.

2 And so the process of doing that
3 involves, for example, database and archive
4 storage, sometimes a trip to the library,
5 depending on whether things are available online
6 or not. There's considerable amount of
7 information online that I have access to. The
8 library databases, some of those public, some of
9 those you need a subscription or a membership at
10 to withdraw books, so you need a library card.
11 So all of those are common ways in which I
12 prepared.

13 And then following that, what I will
14 do is be able to write some background sections
15 which describe the area, then be able to expand
16 upon that to cover the literature in the field,
17 some of the background material that are
18 involved in the notion of the development of the
19 area. So as the field moves, the scientific
20 field moves toward that area of development, or
21 you know, invention, let's say. And then be
22 able to compare and contrast the things with my
23 experience at that time.

24 So the things that I was involved in,
25 projects which I'm involved in, I would

1 reference in there my CV in which I've described
2 in detail the timing and the experiences that I
3 would have had personally, and known, the people
4 that I would know and my experience of people at
5 the time that were involved in some of these
6 activities. So attending meetings, being able
7 to -- not all of it's captured in my CV.

8 So, for example, when you're at a
9 scientific meeting and you're seeing
10 presentations of the development of the field,
11 you know, these are things that are probably --
12 you know, you capture, but I would know some of
13 those areas and who was important at the time
14 and who was not, and those kinds of things, all
15 coming to putting together some understanding
16 around this field and the work that we're
17 analyzing here.

18 Q. In preparing your declarations did you
19 find the prior art that is asserted in the
20 grounds, or was the art handed to you?

21 A. So I don't know if somebody handed me
22 the art or I found the art, but I can certainly
23 attest to that I have found that art through the
24 process that I used. And indeed, the art that I
25 gathered is from searches on the Google patent,

1 let's just say, Google patent side, which is a
2 public database that allows you to put in
3 keyword searches and search through volumes,
4 large volumes of art based on certain criteria.
5 So I'm able to restrict the time base.

6 So, for example, I can look at art
7 that's prior to the time period of relevance,
8 and I can look for various criteria. There are
9 also other manners for searching. For example,
10 you can search based on images, for example.
11 You could look at prior work that references the
12 same -- I know this is a loose term -- art, but
13 art, looks at very similar art work. So there
14 are many, many ways in order to compare features
15 of prior art. And so in using that, that is one
16 of the ways in which I established that the art
17 that I've used is relevant in this case.

18 Q. When you say "keyword searches", do
19 you mean that you are taking keyword from the
20 patent and then working backward to find prior
21 art?

22 A. No, that's not what I'm referring to.
23 What I'm referring to is that -- the process of
24 being able to pull up the art work. So there's
25 many, many different ways in which to find art

1 work. So, for example, when you read an
2 article, you would be able to put -- read the
3 list of references at the end of the article,
4 referencing a section that has, for example, you
5 know, a quote or a cited reference. And those
6 cited references you can insert into a keyword
7 search or let's just say a search by title,
8 search by author, search by -- you know, and
9 there's so many different ways in which that you
10 can pull up the relevant material that relates
11 or is cited in some fashion.

12 So there are, you know, I don't know
13 how many references that I've pulled up and
14 searched for, and these are the ones that I
15 found a display and speak directly to the point
16 that we're talking about today.

17 Q. Did you write your declaration?

18 A. So if you're talking about did I type
19 every space, format, and you know, lay out every
20 piece of the declaration, no, I've had
21 assistance from that point of view. I attest to
22 everything in the declaration, and yes, I have
23 put together that declaration.

24 Q. When you say "assistance", do you have
25 assistants that work under you, or are you

1 talking about associates at the law firm?

2 MS. ALEXANDER: I just wanted to
3 caution the witness not to reveal any privileged
4 information.

5 THE WITNESS: So, for example, in
6 the past I have asked people to staple things,
7 gather things. These are people that, you know,
8 that have helped me assemble documents. But
9 when I state assistance, I mean all of the
10 things in the declaration are my declaration and
11 I attest to all of that.

12 BY MS. FULLER:

13 Q. In preparing your declaration did you
14 confer with Dr. Chatterjee, who I'm sure you're
15 also aware filed declarations in these
16 proceedings as well?

17 A. No.

18 Q. Have you reviewed Dr. Chatterjee's
19 declarations in these proceedings?

20 A. No.

21 Q. So in preparing for your declaration
22 today what materials did you review?

23 A. So I have reviewed the patent, the
24 associated art. I have refamiliarized myself
25 with some of the reference material, of which I

1 put together. That's about it.

2 Q. Did you read the institution decision?

3 A. No.

4 Q. So, Dr. Kirkness, I'm going to have
5 you take out or look at or open your '921
6 declaration. I'll be asking a series of
7 questions related to the '921. Let me know when
8 you have it available.

9 A. I have the Exhibit 1003, which is the
10 '921 declaration, in front of me.

11 Q. Perfect. So I'm just going to direct
12 you generally to your experience and
13 qualifications that start on Paragraph 4, to
14 have handy for you, if you need to look at those
15 paragraphs.

16 A. Yes.

17 Q. So, Dr. Kirkness, can you explain to
18 me what is your experience in the medical device
19 development area?

20 A. So my career spans almost 30 years,
21 not quite. It's, you know -- is there something
22 specific that you'd like? I'm happy to just
23 describe it.

24 Q. Well, let's get into more of the
25 specifics. You have worked in medical device

1 development; is that correct?

2 A. That's correct.

3 Q. And in the medical device development
4 area, has that been related to the medical
5 device, such as sensors, CPAP machines, that you
6 worked in the design aspects of?

7 A. Yes.

8 Q. Okay. Can you explain your --
9 actually, strike that.

10 In the medical device development,
11 have you also worked on the network
12 infrastructure side of the integration in a
13 medical device system?

14 A. So, I have worked with medical device
15 networking systems, and I can tell you that has
16 also spanned almost the entire -- my entire
17 career in sleep and pulmonary medicine. And
18 this is because early in my career I was
19 involved in research and development associated
20 with various respiratory treatments and various
21 respiratory devices associated with improving
22 sleep or sleep-disordered breathing.

23 And in order to assess those, we would
24 capture and characterize sleep-disordered
25 breathing, and we would capture those, for

1 example, in a hospital setting, and then
2 transmit those data to a subsequent laboratory
3 or office where a number of people would be able
4 to review, analyze, annotate, provide
5 detailed -- even further signal processing,
6 detailed analysis. I mean, that's a complete
7 'nother story. And then we would use those
8 things and be able to write reports. And then
9 using network infrastructure, be able to
10 transmit those reports to other sites or other
11 locations.

12 So I think when you're talking about
13 my experience in networking, I wouldn't say that
14 I -- even though I did have some hand in
15 actually managing and I would say a personal
16 interest, it wasn't my responsibility for
17 building the actual network infrastructure of
18 the hospital, but I was somewhat a local
19 administrator for networking for our respiratory
20 team under the banner of medicine. And this is
21 during the time when a lot of the devices, the
22 computer systems, physiological data acquisition
23 systems that we were using, we were using in
24 order to try to expedite and understand how
25 novel treatments in the field were being used.

1 And this was at Westmead Hospital in the period
2 between 2006, 2007 -- I'm sorry, not 2006.
3 1996. It seems like a lifetime ago. 1996 and
4 2003.

5 And then similarly had similar
6 responsibilities -- when I left Westmead around
7 2004, 2005, had similar type of experience and
8 responsibilities at Johns Hopkins University
9 School of Medicine for almost 12 years.

10 Q. So is it a correct understanding that
11 you worked on the medical device side of things
12 that then is integrated with the network
13 infrastructure of the hospital?

14 A. So I certainly worked on both the
15 medical device, physiological data acquisition,
16 let's just say optimization of the flow of data
17 in order to analyze data at some junction.
18 Also, the processing of that data in order to
19 create algorithms, algorithms that are used in
20 order to dig deep into the understanding of what
21 those physiological signals mean clinically,
22 summarize those clinical findings, transmit
23 those findings, and then also aggregate this
24 for -- on a -- whether it be an individual basis
25 if it was for a clinical care decision, but

1 further than that, we would aggregate those for
2 clinical trials. We would also aggregate those
3 for publication and presentation.

4 Then I would say beyond that, there
5 was also the understanding of the -- how those
6 findings fed back to understand where the
7 products need -- whether they fit the market,
8 whether they fit the need, whether there's some
9 clinical variation, and how that clinical
10 variation translates into product acceptance.
11 So that whole cycle of research related to
12 medical device development in the respiratory
13 field.

14 Now, some of those products are
15 related to CPAP. Some of them are not. Some of
16 them are related to breathing. Some of them are
17 related to tissues in the airway. Some of them
18 are related to, you know, various properties of
19 the airway, upper airway collapsibility, for
20 example. So I think that there's -- but most of
21 it would relate to respiratory, particularly in
22 the period between -- well, before 2005, but
23 after that expanded as well.

24 Q. Can we turn to Paragraph 46 of your
25 '921 declaration. Let me know when you're

1 there.

2 A. Yes. I'm there.

3 Q. You state: Given the progress and
4 sophistication of wireless and network
5 technology, innovations were made quickly as the
6 availability, cost, and size of hardware and
7 equipment made solutions to these problems
8 simple to implement.

9 Is this based off of your time where
10 you're explaining between the 1996 and 2005 time
11 period when you were working in the hospital
12 setting, or the clinical space?

13 A. Okay. So let me just refresh myself
14 with this section of the declaration. So this
15 section relates to the definition of a person of
16 ordinary skill in the art in 2005. And as I've
17 described here, would have at least a bachelor's
18 degree in mechanical engineering, electrical
19 engineering, computer science, biomedical
20 engineering or similar technical field, with at
21 least two years of relevant product design or
22 experience working with diagnostic sensor
23 systems, network data systems, such as network
24 PAP machines.

25 In addition, experience could

1 substitute for less education, and additional
2 education could likewise substitute for less
3 experience, of which I certainly made that
4 definition of a POSITA.

5 So as I've said in Paragraph 45, the
6 factors that support this conclusion in the
7 field of art is that it's integrated sleep
8 diagnosis and treatment device, and that is
9 described in Toge, Kumar, and Burton, and
10 those -- how you would use those art in order to
11 improve systems to get a more accurate data and
12 how to more effectively use the data collected,
13 some of the solutions including making patient
14 more comfortable, such as using wireless sensors
15 or observations, the patent remote -- of the
16 patient remotely from home, providing realtime
17 analysis of the data, such as programming
18 algorithms to determine efficacy or realtime
19 data streaming to the physician.

20 So these are all things that at the
21 time I had experience or in-depth knowledge
22 about those items. So given the progress and
23 sophistication of the network, wireless
24 technology innovations were made quickly as
25 availability, cost, size, hardware, and

1 equipment made solutions to these problems
2 simple to implement. This allowed many of those
3 active in the field to quickly learn mechanical
4 systems and computer engineering basics.

5 So that's my declaration. I attest to
6 that.

7 BY MS. FULLER:

8 Q. So my question, though, is what is the
9 basis for supporting your assertion that given
10 the progress and sophistication of networking
11 wireless and technology, innovations were made
12 quickly as the availability, cost, and size of
13 hardware and equipment made solutions to these
14 problems simple. I want to get an understanding
15 of where that statement comes from.

16 A. So this -- these are -- this statement
17 as described in the declaration -- so for
18 example, networking went -- over that period
19 went from, for example -- and computer systems
20 and their ability to network, went from specific
21 IP -- so when I say IP, Internet protocol --
22 systems where the computers really required
23 either -- not many people had experience in
24 being able to network computer systems and/or
25 devices, to the point where systems became plug

1 and play in terms of networking. So almost
2 anybody could create a computer network.

3 Like I said, I did not formally train
4 as a computer scientist, nor am I a computer
5 engineer or a mechanical engineer, or electrical
6 engineer. However, the networking principles
7 became very easy to understand for somebody with
8 ordinary skill in the art, to be able to put
9 component A with component B to create simple
10 networks, or understand how you could network a
11 data acquisition system.

12 So the data acquisition systems that
13 we were using were configurable to change the
14 number of inputs, the range of inputs, the
15 impedance of the inputs, the types of sensors
16 that you could attach to them. So all of these
17 things were a -- and this was from very early,
18 so 1997, and I was using those to create novel
19 data acquisitions systems myself, and then
20 create mechanisms to be able to transmit those
21 to review stations to be able to -- and also
22 program, create simple -- you know, simple but
23 using programming languages to be able to dig
24 into the insights of that data and be able to
25 look at properties of the air flow, frequencies

1 of the air flow oscillations, you know, all of
2 those types of things. I'm sure that you're
3 interested in talking about those later. So
4 that's about the sophistication of networks.

5 Wireless technology. So wireless
6 technology at the time -- so some of the doctors
7 had wireless devices like Apple, Apple mutants,
8 some people had Palm Pilots. You know, this is
9 around the year 2000. These were things -- or
10 Sony had a similar device that was able to
11 network and synch with computers so that you
12 could create little connections and automate
13 some of the features that you did. So people
14 were becoming more attuned with using the --
15 using handheld devices as -- either as data
16 acquisition systems, so, for example, like
17 creating -- collecting data from patients, some
18 simple -- you know, some simple things.

19 More sophisticated in that we had a --
20 in my product development cycle that I described
21 earlier, we had a polymus device -- you know, I
22 couldn't spell it for you, I'm sorry, at this
23 point -- but it was designed to collect
24 stereotactical data without -- basically it
25 could tell where it was in space, in 3D. And

1 this was transmitted to a computer and be able
2 to -- we were using it for looking at changes in
3 the anatomy of people in response to a treatment
4 device.

5 So I think that -- you know, and
6 around 1998 that idea about, you know, spatial
7 recognition and all of these types of different
8 technologies that were exploding almost -- the
9 possibilities were limitless in how you could
10 put these together to create new understandings
11 of how your medical devices could be helping
12 people. So those are two examples of how they
13 relate to innovation progress.

14 If you want to talk about
15 availability, like I said, back in 2003, I know
16 that I had a mobile telephone that was able to
17 have face-to-face video conference, and I had a
18 plan that was unlimited. So I could
19 face-to-face video conference. Now, it depended
20 on which network you were in. So I was on a
21 specific network, and that was how -- that was
22 one of the ways in which they were attracting
23 people to the network.

24 But a mobile phone in 1997 when I
25 started, you know, or even before that, was a

1 completely different tool. You needed a
2 suitcase to carry that around. And in 2003 I
3 could talk to somebody on the other side of the
4 world and see their face.

5 Q. When you say that you were able to use
6 a cell phone to do video conferences, were you
7 in an area that was a metropolitan -- big city?

8 A. So I lived in Newcastle, Australia.
9 That was considered a regional center. And yes,
10 indeed, the network was less reliable in a
11 regional network than in, for example, a
12 metropolitan, you know, city like Sydney, where
13 I worked. So yes, it was easier to do but it
14 didn't take very long for -- like I said, that
15 was in 2003. It didn't take very long for them
16 to solve that problem more extensively.

17 Q. But the problem relates to the cell
18 towers and the coverage in the remote areas at
19 that time; correct?

20 A. Yeah, I think that that's -- what I
21 think is that when you're talking about a cell
22 phone coverage is that, for example, globally
23 cell phones were being utilized more and more.
24 Whilst I don't have any statistics on this, the
25 coverage was increasing with time. I think that

1 the ability for people to access that was
2 increasing. I wouldn't say it was ubiquitous,
3 you know, for example, in the outback of
4 Australia. You might have needed a different
5 type of technology to access, so for example,
6 satellite technology, or you know -- there could
7 have been a large number of different things,
8 yeah.

9 Q. So you're not aware, exactly, when
10 technology or the cellular towers were
11 implemented in these remote areas? You don't
12 have a time frame?

13 A. To me that's -- I have not been asked
14 to provide an opinion on when cell towers were
15 available at any specific location.

16 Q. Can we turn to paragraphs 24 and 25 of
17 your '921 declaration. Let me know when you get
18 there.

19 A. Yes.

20 Q. So in these paragraphs it talks about
21 your experience as a director of clinical
22 affairs; correct?

23 A. Yes.

24 Q. Can you explain what a director of
25 clinical affairs does? What is their duties?

1 A. Certainly. So clinical affairs is a
2 terminology largely used to describe the
3 development of -- so the development of evidence
4 as it translates to a medical device -- I would
5 say medical device, and it usually or
6 predominantly follows a course from
7 associated -- or parallels product development.

8 So, for example, if a company had a
9 product that they were looking to have
10 regulatory approval for marketing, so a medical
11 device needs to have FDA approval in order to be
12 marketed in the USA, for example.

13 So the clinical halfway or clinical
14 affairs relates to creating the scientific
15 evidence to support a -- the approval of a
16 device by assessing a device's safety and
17 efficacy in order to satisfy -- and the
18 regulatory requirements for a medical device.
19 That's briefly. There are probably other
20 duties. And in that role, I had many other
21 duties.

22 Q. So this involves submitting 510(K)
23 clearance showing the device is effective and
24 safe before it hits the market; is that a
25 correct understanding?

1 A. So some medical device -- for example,
2 some medical devices do need 510(K) in order to
3 satisfy the FDA's requirements. There are
4 other -- for example, other markets in Europe
5 and other markets in Australia, beyond. There's
6 markets in India, Japan, that have varying
7 regulatory requirements of a medical device.
8 And then some of the processes related to 510(K)
9 clearance depend on the risk stratification of
10 various devices. So roughly, I would answer
11 yes. However, I would caution about a global
12 statement such as yours.

13 Q. But it's a fair assessment that for a
14 device to hit the market that's considered a
15 medical device there has to be evidence that
16 it's safe and effective; correct?

17 A. I would attest to that. And I would
18 hope that everybody would.

19 Q. Is the cellular phone that has
20 software related to medical treatment, would
21 that be classified as a medical device that
22 would require clearance?

23 A. So if you are talking about a 510(K)
24 cleared medical device, so a 510(K) cleared
25 medical device would be required to be deemed

1 safe and effective. Are you referring to a
2 510(K) cleared medical device?

3 Q. First of all, I am asking would a cell
4 phone that has software related to medical
5 device treatment, would that be considered a
6 medical device?

7 A. So I have not been asked to provide an
8 opinion on whether the device that you're
9 describing should be 510(K) cleared.

10 Q. I'm not asking about 510 clearance.
11 I'm just asking, sitting here today, in your
12 professional experience, is a cell phone that
13 has software related to medical treatment, would
14 that be considered a medical device?

15 A. As I said, I can't provide an opinion
16 on the device that you're describing right now.
17 If there's a spot in the declaration where you'd
18 like to point me to, I might be able to do so.
19 It would be beyond the scope to decide right now
20 whether what you're describing in the absence of
21 seeing -- what I would need to see is a whole
22 range of different things. You need to know
23 what it's being used for, so who is using it.
24 There's a whole risk assessment that needs to be
25 performed. To answer your question would

1 require basically months' worth of work.

2 Q. So you're saying that it has to be
3 specific to the treatment in what it's being
4 used for; is that correct, to be a --

5 A. I, respectfully, provided an answer
6 that it would take a considerable amount of time
7 to be able to make an assessment of the device
8 that you described, in the absence of any other
9 information.

10 Q. How long have you been working within
11 the United States?

12 A. So 20 years, and I'm a citizen of the
13 United States since 2013.

14 Q. Are you aware that the FDA issued
15 guidance on how it intends to integrate
16 smartphone medical apps with a medical device?
17 Are you aware that guidance came out in 2011?

18 A. So I am -- I'm aware that the FDA does
19 regulate medical devices, and indeed, in my --
20 you'll see in my CV, Exhibit 1004, on Page 14,
21 between the time of 2014-2016, whilst I was on
22 the faculty at Johns Hopkins, I was also part of
23 a start-up company, and I was the chief
24 technology for a start-up company, which was
25 designing, developing, and we had some

1 intellectual property that we licensed from
2 Johns Hopkins as well, to develop a
3 smartphone-based monitor for connecting to -- to
4 connect to therapies for chronic respiratory
5 diseases. So insomuch as that role, I had
6 investigated and discussed the guidance and the
7 FDA guidance around that issue that you just
8 mentioned.

9 Q. So why was it not until around that
10 time frame was there guidance even issued?

11 MS. ALEXANDER: Objection;
12 outside the scope.

13 THE WITNESS: So I don't know the
14 specific answer to your question. A generic
15 answer to your question is that there are many
16 areas in science where the -- where guidance
17 follows the state of the art. So, for example,
18 today the guidance on the usage of AI in various
19 applications is dearth. So there's very little.
20 And that's despite a preponderance of usage.

21 BY MS. FULLER:

22 Q. So if I understand this correctly, the
23 application of using a smartphone was developed
24 around that time, and in response there was
25 guidance issued by the FDA?

1 A. Again, I don't know. I don't know why
2 the FDA did that.

3 Q. So in going back to your CV and your
4 response that you had worked with smartphone
5 integration in a medical device, can you
6 elaborate on some of the issues in integrating a
7 phone with the medical device?

8 A. Certainly. It was -- we actually were
9 pretty successful in doing so in a very rapid
10 manner, and because of our success in being able
11 to do so, we were able to attract Maryland state
12 business development funding to support that
13 over three years. We gained support from the
14 medical community, Johns Hopkins, and beyond.

15 And the -- some of the technology that
16 it was based on was air flow sensing. So we had
17 created a lightweight air flow sensor that was
18 agnostic to other air flow sensing devices in
19 the market. So you know, brand X had their air
20 flow sensor, brand Y had their flow sensor, and
21 we were able to create an air flow sensor that
22 did not require integration with a specific
23 brand, which at the time we thought, whoa, was
24 fantastic. And, you know, the biggest struggles
25 in that area were to raise funds in order to get

1 to the FDA.

2 Q. Show about for security purposes, was
3 there issues to make sure that the device is
4 secure so hackers would not be able to hack the
5 device and gain confidential information or
6 control?

7 A. Of course, confidentiality is an
8 issue, and you could solve those issues through
9 two methods. One is encryption, and two,
10 meeting the HIPAA requirements of, you know,
11 distribution of data, and that required either
12 specific consent or the removal of data that was
13 identifying. So those features, I think, were
14 well known. But they were well known, you know,
15 in 1994 -- well, let's just say 2005 in the U.S.
16 when I joined the School of Medicine. All of
17 the data that we had needed to be protected for,
18 privacy, we weren't able to share it, and it had
19 to meet good clinical practice criteria.

20 Q. In the data in 2005, are you referring
21 to when --

22 A. Clinical research data, and you know,
23 that's predominantly the type of data that I was
24 utilizing and had access to. And until
25 something is on the market, prescribed by a

1 doctor, it's not considered as being clinical
2 data -- sorry, a medical record.

3 Q. And this relates to having access to,
4 is where you review it at a remote viewing
5 station; is that correct? Is that how you would
6 access it?

7 A. So which specifically are you
8 referring to?

9 Q. I'm just trying to understand your
10 clinical procedures in 2005 and how data would
11 be accessed.

12 A. Okay. So 2005 clinical data could be
13 accessed in many different forms and many
14 different ways. And you could -- you know,
15 there's a large number of different ways that
16 clinical data could be accessed, could be
17 stored. Data could be transmitted. The
18 permutations are significant. The number of
19 devices that could be used, the types of devices
20 that could be used, the kinds of patients that
21 would be collected data for, types of diseases.
22 You know, there's hundreds of classifications of
23 diseases that could be involved, and the
24 combinations thereof.

25 So you know, for example, there could

1 be patients with obstructive sleep apnea, which
2 is one of the areas that we're discussing right
3 now, for example. But other sleep-disordered
4 breathing -- other sleep-disordered breathing
5 phenotypes or disease classifications could
6 certainly be overlapped. So, for example,
7 central sleep apnea could be a condition, but
8 some people have a combination of central and
9 obstructive sleep apnea. So anyway, you know,
10 these are just examples, and you know, I haven't
11 even touched upon the type of physiological data
12 that you could acquire in order to determine all
13 of those things. I think I just described a
14 million things.

15 Q. Let's drill it down. Can we go to
16 Paragraph 94 of your '921 declaration where it
17 states: In the early 2000s, allowing patients
18 to undergo sleep studies in their own homes
19 recorded physiological data stored on the
20 devices transferred to a personal computer
21 through an integrated interface (FDA
22 510(K)K040576).

23 Do you see that?

24 A. It's in the declaration and the
25 declaration is for '921, and it's on

1 paragraph -- you said --

2 Q. -- 94.

3 A. Yes. 94.

4 Q. Starting with the early 2000s. I
5 won't reread that back into the record. I'll
6 let you read it.

7 A. Okay. Yes.

8 Q. So procedurally, in the early 2000s,
9 is this how data was transferred from a medical
10 device to a personal computer?

11 A. Do we have that exhibit? Is that one
12 of the exhibits that is --

13 Q. You don't have any exhibit cited for
14 this paragraph --

15 A. Okay.

16 Q. -- of your declaration. However, I
17 guess, what is the basis then for this
18 assertion?

19 A. Okay. So in my experience it would
20 have -- anybody prior to the 2000s, anybody
21 would have been able to record physiological
22 data at home stored on a type of device or a
23 medium, and then at a later date transferred
24 that to a computer, you know, through some kind
25 of specific interface.

1 Now, whilst I've quoted that, off the
2 top of my head I don't know what that
3 represents. But my assertion would be that
4 that's an example of transferring recorded
5 physiologically data to a computer. And it
6 could be done by directly taking a medium, let's
7 just say a flash drive because -- you know, like
8 a Sony memory card, that's something that I know
9 was very, very ubiquitous at the time. Lots of
10 people had those little Sony flashcards. And
11 there are other similar little SD cards that
12 could be transferred around very simply.

13 Q. So stored on the devices, transferred
14 to a personal computer, your understanding that
15 this would be a memory card that stores the
16 information and then can be opened up on a
17 personal computer?

18 A. Yeah, that would be one example of
19 being able to take recorded physiological data
20 stored on the device, transferred to a personal
21 computer.

22 Q. So this is one of the 2005 procedures
23 of ways to transfer data?

24 MS. ALEXANDER: Objection.

25 Mischaracterizes his testimony.

1 THE WITNESS: So what I said is
2 that during this period of time a person of
3 ordinary skill in the art would have found it
4 very obvious to be able to use a remote-based
5 physiological data recorder to capture
6 physiological signals, and then be able to, at a
7 later date, access those through the transfer of
8 the data that's stored on a recorded
9 physiological device, and transfer that to a
10 personal computer. That would have been
11 obvious.

12 Q. Let's jump to Paragraph 100 of your
13 '921 declaration. Let me know when you get
14 there.

15 A. I'm there.

16 Q. So in this paragraph you discuss
17 accessing a secure website to requests for data
18 from a secure server located centrally through
19 landlines to the carrier's local transmission
20 antenna. Can you explain this process of
21 transferring data?

22 A. Certainly. And it would be wise,
23 because this is a very specific citation of a
24 study which describes a very specific protocol
25 in which in my opinion they were using wireless

1 data transmission from -- that was attached to
2 the flow generator, so the CPAP or the auto
3 CPAP.

4 So then here in this section in the
5 declaration states that the data could be
6 accessed by a secure website that could access,
7 for example, a secure server that was located at
8 a central location. And the landlines to the
9 carriers local transmission antenna, which is
10 located within several miles of the device
11 location setup.

12 So that describes, for example a
13 wireless -- both a wireless transmission of data
14 and the access of the data through the carrier,
15 so the landline to a carrier's local
16 transmission antenna, which is located within
17 several miles of the device and setup, where it
18 is transmitted wirelessly to the device.

19 So this describes basically both
20 wireless transmission and transmitting data to a
21 server through landlines.

22 Q. Was this transmission of data through
23 a server -- to a server through landlines, did
24 this involve the dial-up Internet in using
25 standard telephone lines, is that --

1 A. I would have to refer to that
2 publication to be able to answer that question.

3 So --

4 Q. I guess generally, let's go back to
5 the 2004 time frame. Was dial-up Internet the
6 way to transfer information back in the early
7 2000s?

8 A. Well, like I said, in 2003 I had a
9 handheld device that could do video. So I
10 wouldn't say -- I wouldn't necessarily say that
11 it was the most common -- now, I don't even
12 think I'm the most progressive when it comes to
13 technology, either. So I wouldn't necessarily
14 say that -- I just wouldn't agree with that
15 statement.

16 And then the other thing I would say
17 is in -- with regards to technology adoption,
18 which I think is the point that you're getting
19 at, is that there's a range of technology
20 adoption, and that, you know, I'm not saying
21 that my -- you know, maybe at that time even my
22 parents weren't -- you know, were no longer
23 using dial-up.

24 So you know, there's a rapid
25 transition between the usage of these kinds of

1 technologies. So that's generally -- I'm not
2 pointing to any specific point in the
3 declaration or anything like that. You know, I
4 just don't think that around that time dial-up
5 was a -- was something that people were looking
6 for. If anything, I would have thought that
7 dial-up was something that people were
8 complaining about.

9 MS. ALEXANDER: Jenna, we're
10 coming up on about an hour. Are you coming
11 close to where you can take a quick break?

12 MS. FULLER: I have a few more
13 questions and then we can take a quick break. I
14 shouldn't be that much longer. I just want to
15 finish this line of questioning before we break.

16 BY MS. FULLER:

17 Q. So going back to this Paragraph 100,
18 though, dial-up Internet was a way to transfer
19 information; is that correct?

20 A. So I don't say anything in my
21 declaration about dial-up. I don't think I use
22 dial-up, the term dial-up. If I do, let me
23 know. But I'm not sure that I described where
24 and when dial-up versus other modes of access to
25 the Internet. You know, I do recall the first

1 dial-up that I made, and that was in the
2 mid-'80s.

3 Q. So you don't offer an opinion of
4 dial-up versus other ways to transfer
5 information in your declaration?

6 A. So unless stated elsewhere in the
7 declaration that I'm not aware of, you know, I'd
8 have to go through and see if there's any
9 reference to -- specifically to dial-up.

10 MS. FULLER: Let's go off the
11 record.

12 (10:15 a.m. PST - Recess taken.)
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1 (At 10:27 a.m. PST, with parties
2 present as before, the following proceedings
3 were had, to-wit:)

4 BY MS. FULLER:

5 Q. Dr. Kirkness, how long have you been
6 working with CPAP machines?

7 A. Since around about 1995, '96.

8 Q. So almost three decades of experience
9 with these machines. Do they include a screen
10 which allows a patient to view their data as
11 well as control settings?

12 A. There is various -- you know, and this
13 has changed over many years. So there's various
14 different types of interfaces that you can have.
15 Initially there were some devices that had
16 toggle switches or dials, and selector switches.
17 Then LCD screens and digital delays. There's a
18 whole host of different types of displays that
19 some devices versus others have. To describe
20 all of the different displays of the hundreds of
21 different machines that are available would
22 probably require, you know -- if there's a
23 specific type of device -- now, once again, you
24 probably have to give me the specs of a device
25 for me to be able to describe it in detail.

1 Q. No, just in your experience with
2 working with CPAP machines, they include some
3 interface to allow the patients to see the data;
4 correct?

5 A. Yes.

6 Q. On the interfaces on the CPAP machine,
7 so whether it's an LCD screen, a digital screen,
8 it's an interface on the CPAP machine; is that
9 correct?

10 A. Yes. So just to expand on that a
11 little bit so there's a wide range of different
12 types of ways in which -- different types of
13 individuals, by the way, should, would, or could
14 interact with a device. And some of those
15 devices -- so if you're talking about a CPAP
16 device, which is the most, I would say, simple
17 of all of those devices, it would require --
18 most probably require less -- it's a simpler
19 concept.

20 There are other devices that are
21 analogous to -- in other words, deliver pressure
22 to the airways at different levels for different
23 reasons. Some of them deliver pressure; some of
24 them are limited by pressure; some of them are
25 limited by volume. And so there's a range of

1 different ventilatory assist devices, including
2 CPAP, BIPAP. Ventilators may fall into that as
3 well.

4 Q. So in narrowing it down to the CPAP
5 device, I think you said this would require a
6 display; is that correct?

7 A. So there are -- once again, this
8 could -- it could depend on what the device was
9 configured to do or what it was being used to
10 do. For example, if you wanted a person to be
11 able to change the pressure, the set pressure,
12 if it had one set pressure and no other feature
13 so when you turned it on, it delivered a given
14 pressure and held the entire system at that one
15 pressure, and that was what it was -- what the
16 device was set to do, maybe you don't need to
17 interact with it at all. So that's the simplest
18 kind of pressure delivery device.

19 But if you need -- the real fact is
20 that individuals, depending on their clinical
21 situation, so, for example, if they are -- they
22 may change weight over time, the amount of
23 pressure that they require may change. Now, do
24 you require a person to interact with that
25 device in order to change the pressure? Yes.

1 What is the mechanism of doing so? Well, in
2 some way you need to be able to receive the set
3 pressure information and be able to alter the
4 pressure that is delivered.

5 Now, I've just described a very, very
6 rudimentary CPAP condition. The truth is that
7 the variations on providing pressure to the
8 airway are a magnitude to that.

9 Q. So for instance, if a patient is
10 sleeping with their -- has their device at their
11 nightstand and they want to change the pressure,
12 the CPAP display would allow that to happen; is
13 that correct?

14 A. So usually a physician prescribes a
15 CPAP pressure, so let's just say it's not
16 usual -- so, for example, the IFU, so
17 instructions for use of a CPAP, a medical
18 device, are that it delivers -- and you know,
19 this is generic, not specific to any device,
20 because every specific device has their own
21 operating instructions. However, a simple
22 rudimentary CPAP machine that I described prior
23 whereby its operating instructions say that it
24 is to be operated at the prescription of a
25 physician, under those circumstances a patient

1 is not changing the pressure of the therapeutic
2 pressure.

3 Now, I can think of alternates and
4 features of more sophisticated machinery where
5 it doesn't fit into that description.

6 Q. Let me get your understanding of a
7 claim construction in an Inter Partes Review
8 proceeding. Can you explain that understanding
9 to me?

10 A. Are you referring to the section in my
11 declaration where I have --

12 Q. So we could go to Paragraph 133 of
13 your '921 declaration.

14 A. Oh, claim construction. So I am at
15 Exhibit 1003 of the '921 patent, section number
16 X, claim construction, on Page 56,
17 Paragraph 133.

18 Q. And what is your understanding of
19 claim construction?

20 A. So in my opinion here in the
21 declaration, I've applied a plain meaning of the
22 terms and the phrases in the claims for my
23 analysis as a person of ordinary skill in the
24 art would have understood those terms and
25 phrases at the time of around 2005. However,

1 with respect to the following two limitations, I
2 have adopted the patent owner's interpretation
3 of these terms as described in the PO's opening
4 claim construction brief in the parallel
5 district court action for the purposes of my
6 opinion. Those descriptions were provided for
7 me, and they are as follows.

8 So Number 1, Number 2, as you see. So
9 I've specifically reviewed the portion of the
10 patent owner's opening claim construction brief
11 relating to these two terms, including the
12 portion which states that these limitations are
13 met when the claim system can calculate the
14 subject has an apnea or hypopnea event using
15 sensor data from the subject and the average
16 number of such events over the total period of
17 time spent sleeping, and determine a subject's
18 apnea/hypopnea index severity level, which is an
19 example of a medical measurement of the severity
20 of a subject's sleep disorder and is used to
21 diagnose the severity of sleep apnea. And that
22 exhibit claim is provided there.

23 So a person of ordinary skill in the
24 art would understand that from the claims and
25 specifications what type of symptom data are

1 calculable, so i.e., air flow, apneic events,
2 indexes such as the AHI.

3 Further, a person of ordinary skill in
4 the art would recognize that each value
5 calculated for a specific type of symptom, data,
6 or index is representative of a level of
7 severity of a subject's sleeping disorder.

8 Q. For all but these two terms, the
9 generating and outputting the data and measuring
10 and calculating a data, you applied the plain
11 and ordinary meaning; is that correct?

12 A. That's correct.

13 Q. In assessing the term remote Internet
14 site, what was the plain and ordinary meaning
15 that you applied to that term?

16 A. Can you refer me to the place in
17 either the claim or the declaration where it's
18 discussed?

19 Q. Certainly. Do you have your
20 Exhibit 1001 available to you?

21 A. That's the patent. Yes.

22 Q. So I have that available for you, and
23 also let's have you turn to -- give me one
24 second -- to Paragraph 240 of your declaration.

25 A. Okay, found it.

1 Q. Do you see in Paragraph 240 where you
2 say "a browser-based engine (remote Internet
3 site)"?

4 A. Yes.

5 Q. So is that the plain and ordinary
6 meaning that you applied for a remote Internet
7 site as being a browser-based engine?

8 A. If we're talking about a browser-based
9 engine or a remote Internet site, these things,
10 whilst a computer science or electrical engineer
11 or computer engineer might have a more broad
12 description of how to describe those,
13 remembering I am a -- my expertise is in
14 physiology and the usage of these tools. So as
15 an expert that used these tools, not designed
16 these tools, I would see that a browser-based
17 engine and a remote Internet site have some --
18 have some overlap, and I would refer to the fact
19 that I've discussed that in detail in my
20 declaration, particularly in Kumar, where Kumar
21 also describes, so the data acquisition,
22 physiological data acquisition, and the
23 transmission of that data to a web-based or
24 browser-based Internet site that can be accessed
25 by a physician user clinician. And if you'd

1 like me to go to the specific section where I
2 discussed that in the declaration with Kumar,
3 I'd happily do that.

4 Q. I just want your answer on the plain
5 and ordinary meaning that you applied to remote
6 Internet site, and it seems like what you had
7 answered is it being a browser-based engine; is
8 that correct?

9 MS. ALEXANDER: Objection.
10 Mischaracterizes his testimony.

11 THE WITNESS: So what I had said
12 as far as particularly in relation to the --
13 this statement, what I'd said was that whilst my
14 specific skill set as an expert in physiological
15 data acquisition, and as much as I'd previously
16 described in your -- to your questioning around
17 my experience with networking, networking
18 configurations, that I would consider, whilst I
19 don't have the mechanical -- sorry, electrical
20 engineer, computer science degree or a computer
21 engineering degree, as somebody who has
22 experience over at least eight to ten years
23 prior to 2005 in the use of systems that were
24 used in order to collect physiological data,
25 extensive sensor configurations, extensive

1 devices, very specific analysis, all of those
2 things, and be able to transfer those via
3 networked computer networks, that those
4 things -- those things are the area that I know
5 about.

6 Now, when it comes to the
7 browser-based, some of those data you could
8 access via various browser -- you are
9 considering that as a -- something that's, for
10 example, like Net Scape or, you know, one of the
11 early browsers. I think Net Scape was probably
12 the most predominant one that people would use
13 back then in terms of a browser that would be
14 used to access various websites.

15 So some of that data could be
16 displayed or via those kinds of -- those kinds
17 of applications. Now, some of them required
18 specific applications. So you needed to
19 download specific applications to a computer in
20 order to access the networking. Now, is the
21 fact that you're accessing a specific remote
22 site on a network either via a browser or an
23 application which was used to access a network
24 site, I wouldn't say that those things -- not
25 that they're synonymous from a point of view of

1 the technical construction of the configuration
2 of those programs, but I would say that somebody
3 of ordinary skill in the art would understand
4 that a remote access to an Internet site or a
5 remote access to a site, whether it be a
6 browser-based engine, would have been very
7 obvious to somebody of ordinary skill in the
8 art.

9 BY MS. FULLER:

10 Q. When you say "remote access to an
11 Internet site", does that imply that the device
12 is operating on a different network than the
13 Internet site?

14 A. So as far as the descriptions about
15 the different types of terminology used to
16 described networks like, for example, intranet,
17 Internet, extranet, there are -- you know, like
18 I said, within the limitations of my expertise,
19 it would be very obvious to somebody that if you
20 needed to go outside of a firewall or outside of
21 a given -- this is obviously in hospitals,
22 because hospitals create their own intranets,
23 and you would be able to access websites, for
24 example, on intranets. So websites and a web
25 server could still provide access on an

1 intranet.

2 However, if you wanted to leave an
3 intranet, which usually requires additional
4 security, you're either on the inside accessing
5 a terminal that's able to provide access to
6 that, or if you want to access something outside
7 of that local intranet, you would use -- you
8 could use the Internet, which would perhaps link
9 to, you know, another department, another -- you
10 know. So, for example, it could be the
11 respiratory department or the sleep department,
12 and then you wanted to access some area in the
13 rheumatology department. That would be in a
14 different secure network.

15 Or there are public areas that you
16 could access. So, for example, you wanted to
17 look at -- you know, name escapes me at the
18 moment what specific sites might have been
19 available to search back then, but that would
20 allow, you know, searching on the World Wide
21 Web, for example, also referred to as the
22 Internet. And there's various protocols for IP
23 transfer of data directly, without using like
24 FTP sites. FTP sites would allow you to
25 transfer data without the use of a specific --

1 you know, a specific web or Internet engine.
2 And those FTP sites would, you know, either
3 schedule downloads or they'd be able to -- you
4 could access them sometimes via a website
5 server, sometimes via a specific software.

6 Q. So when a device is on a local area
7 network and wants to have remote access to the
8 Internet site, it would then use the Internet or
9 a public network to access that site?

10 A. Are you saying -- sorry, can you -- I
11 apologize. I missed the question.

12 Q. You explained access via intranet
13 versus access via Internet. So my question is
14 where a device is on a local area network and
15 wants to access the remote Internet site, that
16 would be via the public network?

17 A. And you know, not that -- it seems
18 like a very generic question, and it might be
19 better to discuss it in terms of if there was
20 somewhere -- so, for example, if we're just
21 referring to the Section 240, like
22 Paragraph 240, if we're still on that section, I
23 would basically repeat that section of the
24 declaration as it relates to that specific
25 space. And if we want to look at any of the

1 references, I'd happily look at the references.

2 Q. I just want to have this conversation
3 in this hypothetical form. When you have a
4 device that's on a private network and wants to
5 access a remote Internet site, you're going
6 to -- that remote Internet site is not within
7 the private network because it's using the
8 Internet to access it; is that correct?

9 MS. ALEXANDER: Objection;
10 outside the scope.

11 THE WITNESS: Yeah, sorry, it's
12 unclear which -- you know, it's just unclear to
13 me specifically what you're getting at, or what
14 the question is.

15 BY MS. FULLER:

16 Q. I'm trying to unpack your earlier
17 conversation about intranet versus Internet. Do
18 you recall that conversation?

19 A. Correct.

20 Q. So in part of the conversation you
21 talked about intranet access of sites; correct?

22 A. (Witness nods head.)

23 Q. So an Internet access would be two
24 devices that are operating within the same
25 network?

1 A. Okay.

2 Q. Is that correct?

3 A. I mean, let's let your hypothetical
4 say it is. So...

5 Q. Okay. I just want to get your
6 understanding of the Internet versus the
7 intranet that you were explaining. So I'm
8 wanting to just expound on your explanation of
9 intranet access. So is your understanding of
10 intranet access would be two devices operating
11 within the same network?

12 A. And like I said, the exact
13 configuration and the hypothetical configuration
14 as you've described it with two devices up on
15 the same network, that could be configured, for
16 example -- you know, once again, there's
17 probably many, many configurations, but let's
18 take it as the most simple that we could.

19 We have two computers connected via a
20 cable, you know, an Internet cable, if you will.
21 But the specific specifications of that cable
22 that go from one networking site -- the
23 networking port on one computer to the
24 networking port on the second computer, you've
25 effectively established a local network. So

1 that's at -- that is the simplest definition
2 that you could possibly imagine.

3 Now, let's expand that out to include
4 some other networking components, which might
5 include switches. So a networking switch. Now,
6 this is hypothetically, also, I'm way over my
7 skis talking about networking switches. My only
8 familiarity is that I know that if you've got
9 multiple devices that are accessing a network
10 and want to access, that some, some ability to
11 route -- so that's another term -- route the
12 signals and identify individual components on a
13 network are somehow required.

14 So these devices have to -- so you
15 would need a specific -- again, this is probably
16 outside of my expertise, but we all would know
17 that you need a certain IP address when
18 assigning a computer to a network. And some of
19 those computers require specific -- they require
20 specific identification so that the protocols
21 that are used to send those data are assigned to
22 the right device on those networks.

23 So that even describes -- that's even
24 describing the simplest, simplest configuration.
25 But there are much more sophisticated networking

1 that, you know, I just don't think that I should
2 expand upon.

3 Q. What is your understanding of a
4 browser-based engine? Can you explain?

5 A. So to the extent that I have explained
6 that in the declaration, let me turn to -- so if
7 we refer back to the declaration, particularly
8 in the area that we were discussing. So
9 Kumar -- so it's Paragraph 240, Kumar
10 additionally discloses the data may be
11 transferred directly from one device to the
12 other, from the PAP device to the provider-side
13 device, such as a caregiver's device.

14 Accordingly, the TOGE-Burton-Kumar
15 combination discloses the software on a mobile
16 terminal, 5, which is the software, and the
17 browser-based engine, the remote Internet site,
18 each separately or independently receive the
19 data related to the subject's treatment and the
20 treatment efficacy generated by the PAP device.

21 Q. Can you explain how you understand a
22 browser-based engine, what a browser-based
23 engine is? That's more my question.

24 A. Again, I would -- where there's a
25 specific terminology used in order to understand

1 the art and the findings, I referred to the
2 declaration. If I try to simplify it so you can
3 get a little bit of the way that I've digested
4 things, rather than -- you know, rather than try
5 to expand, just simplify things, a browser is
6 some software. So software on a computer that
7 is able to interact with a person. So they're
8 using that software.

9 Some -- as I've mentioned, some
10 software might be freely available, so generic,
11 and able to interact, and then some of those
12 browsers require a specific, so think about
13 Windows 95. You can open a window and you can
14 list a whole stack of folders that are in there,
15 and you can browse through that window and
16 access different directories. So there's
17 different terminologies that are used to
18 describe those very different things.

19 So if somebody is browsing through a
20 window, this is effectively -- and if that
21 window is to a remote site on the network you're
22 interfacing, so this is, again, where a browser,
23 so you're browsing a remote site.

24 Now, if you use an IP-based protocol
25 to obtain that data on a remote site, I would

1 see that -- particularly if you're using what
2 was commonly referred to as Internet protocols
3 or, you know, accessing different network sites,
4 I would see that that would be synonymous with
5 a, like you said, browser, browsing.

6 Q. Can we turn to Paragraph 213 of your
7 declaration.

8 A. Yes.

9 Q. Just give me one second. My Adobe, of
10 course, quit on me so I have to bring it back
11 up. Are you at Paragraph 213?

12 A. Yes. I'm just going to take a quick
13 drink.

14 Q. In that passage in your declaration
15 you say that it would have been obvious to
16 implement a remote Internet site in Toge. What
17 is the basis of your obviousness allegation?

18 A. So if you don't mind, I'm just going
19 to refamiliarize myself with the section. So I
20 discuss this in extensive data in Paragraphs 213
21 through 223, and so it's basically my opinion
22 that Toge, in view of the knowledge of a POSITA,
23 renders obvious the limitations as described
24 in -- above there, in claim limitation 10, which
25 is a remote Internet site, the remote Internet

1 site adapted to receive the data related to the
2 subject's treatment and the treatment efficacy,
3 in whole or in part, generated by the PAP device
4 and transmitted via the first radiofrequency
5 wireless transceiver.

6 So in expanding upon that, Toge
7 discloses that its remote monitoring method
8 includes a CPAP device, which is connected to a
9 relay device and a physician-side terminal
10 device by a wireless or wired communication
11 network, and that the physician-side terminal
12 device is connected to receive all or part of
13 the treatment data transmitted from the relay
14 device.

15 So Toge describes that the
16 communication network may be any of a public
17 network, of the Internet, a mobile communication
18 network or a dedicated line network. So
19 alternatively, what it describes there is it
20 could actually be a combination of all of these
21 networks.

22 So it would have been obvious for
23 somebody to utilize the -- a remote Internet
24 site to receive the data related to the
25 subject's treatment and the treatment efficacy

1 in Toge's wireless PAP device on a
2 physician-side device, like a -- for example,
3 like a cell phone.

4 A POSITA would have understood that
5 one common way to access the data transmitted
6 over the Internet was through Toge's wireless
7 PAP device, or if that's acting -- is a remote
8 Internet site.

9 So to the extent that Toge and the
10 knowledge that somebody could have brought to
11 that, so I described those earlier in my
12 discussion today, but in where a person of
13 ordinary skill in the art does not disclose this
14 limitation, it's my opinion that Toge, in view
15 of Kumar, discloses that limitation. And
16 somebody would have been motivated and found it
17 obvious to implement the features of the
18 limitation that we're describing here, which
19 includes the remote Internet site of Kumar in
20 the Toge system.

21 Q. So the remote Internet site of Kumar
22 is a browser-based engine that is hosted on a
23 central server. Is that -- we can introduce
24 Kumar into the record if you need that for
25 reference, but I'm just trying to get what you

1 stated in Paragraph 215 to get what the remote
2 side of Kumar is.

3 A. Okay. So Kumar discloses a Tilly
4 medicine system for networked monitoring of
5 physiological data. So -- which includes remote
6 studies monitoring physiological data as we
7 described, which is associated with sleep apnea
8 and hypopnea. So Kumar's system shows a
9 patient-side device, a computing device, a
10 central service that hosts a browser-based
11 engine that can be -- assist through web pages,
12 like we described.

13 Kumar additionally discloses that the
14 web-based engine, also referred to as a remote
15 Internet site, supports realtime streaming of
16 information over the Internet. The system may
17 be implemented using -- and I've described those
18 from Kumar. I know some of those, but I don't
19 know all of the -- I can't program in these
20 languages. I can read some of it, but don't ask
21 me to create a, you know, C++ script or anything
22 like that. Okay. And note that the server may
23 be implemented on Internet, intranet, or
24 extranet, and that's referring back to standard
25 discussion we had on that.

1 So the engine manages transmission of
2 the data from the patient-side device to the
3 provider-side device, and may configure the
4 devices to transfer the data directly from one
5 device to another. May receive the data from
6 the patient-side device and transmit the raw
7 process data all to the provider-side device.
8 May store the data for later transmission or the
9 provider-side device.

10 If you want me to go into the next
11 example, I'm happy to.

12 Q. No, we're good there. We can break it
13 down from there.

14 So going back to Paragraph 17, it says
15 in your declaration: A central server that
16 hosts a browser-based engine that can be
17 accessed through web pages.

18 Is that, in Kumar, a remote Internet
19 site?

20 A. So the way in which -- sorry. The way
21 in which this is described, it says here in 217,
22 Kumar shows that the system includes a
23 patient-side device, computing device, and a
24 central server. So the central server that
25 hosts a browser-based engine that can be

1 accessed through web pages. And I think we
2 described this previously, the various
3 configurations that that could take. So a
4 central server. Now, it's -- you know, it
5 describes how that may be transferred via -- in
6 different configurations, Internet, extranet, or
7 intranet.

8 Q. Sorry. I just want to get -- kind of
9 nail it down to a yes or no answer. The central
10 server that hosts a browser-based engine that
11 can be accessed through web pages is described
12 in Paragraph 217. And in Paragraph 218 you say
13 that the browser-based engine is a remote
14 Internet site. So based off of those two
15 paragraphs, a browser-based engine that's hosted
16 on a central server is what you identify as a
17 remote Internet site in Kumar?

18 A. So, for example, a remote -- this is
19 my opinion. A remote Internet site could be a
20 browser-based engine. So does that mean that
21 all remote Internet sites are browser-based
22 engines? I would think not. So there are many,
23 many remote Internet sites. And Kumar
24 additionally discloses the browser-based engine,
25 which supports realtime of information over the

1 Internet. So again, he describes here this may
2 be implemented using all of these different
3 types of protocols. Apache web servers, SQL
4 servers, Linux servers, Oracle servers on a
5 Linux, Java Applets -- servlets, Applets, HTML,
6 JavaScript, Java, C++.

7 Like I said in my declaration that it
8 discloses so many different types of systems
9 here that -- and it would be beyond my
10 declaration to dig into each or any one of
11 those, as I mentioned prior.

12 Q. And in your declaration, though, what
13 you identify as a remote Internet site in Toge
14 and Kumar is the browser-based engine as
15 discussed in Kumar; is that correct?

16 A. What I've said is that Kumar discloses
17 browser-based engine, which is a remote Internet
18 site. That supports realtime streaming of
19 information over the Internet. And then the
20 system that may be implemented using a whole
21 host of various configurations, programming, you
22 know, descriptions here, and that the server may
23 be implemented on a number of different network
24 configurations, Internet, intranet, extranet.

25 So -- and it says here on the very

1 next thing, the engine manages transmission of
2 the data from the patient to the provider. It's
3 simple. That's the -- I would say the high
4 level. So how you do that is through any
5 configuration as disclosed there.

6 Q. Can we drill down on the engine
7 manages transmission of data from the
8 patient-side device to the provider-side device?
9 Does that mean that data is transferred from the
10 patient-side device to the engine, which is
11 hosted on a web server, and then where there's a
12 request for data from the provider-side device,
13 the engine then transfers the data to the
14 provider-side device? Is that --

15 A. Yes, and I point you back to the
16 declaration for the '921 on Paragraph 218, in
17 the very next statement, and may configure
18 devices to transfer the data directly from one
19 device to the other. May receive the data from
20 the patient side and transmit the raw data or
21 processed data to the provider-side device. May
22 store the data for later transmission to the
23 provider-side device, as well. And then I
24 paused.

25 Q. And can you explain how the engines

1 manages that transfer of data?

2 A. So as I'd mentioned briefly, so the
3 system -- and I'm referring to declaration '921,
4 Paragraph 218 on the -- 3, 4, 5, and 6, so lines
5 3, 4, 5, and 6.

6 Q. Oh, sorry, Dr. Kirkness, I didn't
7 follow where you're pointing to.

8 A. Okay. Paragraph 218, lines 3, 4, 5,
9 and 6 state that the system may be implemented
10 using Apache web server, MySQL on Linux, Oracle
11 Linux, Java servlets, Applets, HTML, JavaScript,
12 Java, C++, Microsoft's .NET, et cetera. I'm
13 sure there are other potential protocols that
14 could be used to transfer that data, and that
15 the server, central server that hosts the data
16 transfer may be implemented on an Internet,
17 intranet, or extranet. So that's -- I don't
18 know what else I could tell you.

19 Q. So your reference to Paragraph 87, the
20 system may be implemented using Apache web
21 server, MySQL on Linux, Oracle on Linux, Java
22 servlets, Applets, HTML, JavaScript, Java,
23 that's the way that the engine then manages the
24 transmission of data from the patient-side
25 device to the provider-side device?

1 A. So this is -- that is disclosed in
2 Kumar in my declaration, and that's the
3 configuration -- so you asked me how Kumar's
4 system could be implemented to transfer -- to
5 manage the transmission of the data from
6 patient-side device to provider-side device.
7 Now, again, we're talking about -- we're talking
8 about this in view of the Toge system.

9 So additionally, when it comes to --
10 so just to skip back to finish that thought, so
11 you asked me how Kumar's system managed the
12 transmission of data from patient to provider,
13 and it's described in detail. And then to the
14 extent that we're talking about the claim
15 Number 10, which is a remote Internet site and
16 the remote Internet site adaptor to receive the
17 data, I previously mentioned that Toge would --
18 Toge and a POSITA at the time would render this
19 obvious, and that the utilization of Kumar would
20 also render that obvious.

21 Q. So going back to Paragraph 214, you
22 state -- is it based off of Toge's disclosure of
23 the communication network, and your statement
24 that it would have been obvious to utilize the
25 remote Internet site to receive data on the

1 physician-side device, is it then your position
2 that a POSITA would have found it obvious to
3 implement Toge's physician-side computer with a
4 browser-based engine?

5 A. It's a complex question. And in such
6 a complex question, I'd have to refer to what
7 I've written down here exactly in the
8 declaration. So Toge discloses that a remote
9 monitoring method includes a CPAP device
10 connected to a relay device and a physician
11 device terminal via a wireless or wired
12 communication network. And that the
13 physician-side terminal device is configured to
14 receive all the parts of the treatment data
15 transmitted from that relay device.

16 Toge discloses that the communication
17 network may be any of a public telephone
18 network, the Internet, a mobile communication
19 network, or a dedicated line network.
20 Alternatively, it may be a combination of these
21 networks. In light of the above, it would be
22 obvious to a POSITA to utilize a remote Internet
23 site to receive the data related to the
24 subject's treatment, and the treatment's
25 efficacy from Toge's wireless PAP on the

1 physician-side devices of Toge.

2 A POSITA would have understood that
3 one common way to access data transmitted over
4 the Internet, like the data from Toge wireless
5 PAP device is via a remote Internet site. So to
6 this extent, Toge and the knowledge of a
7 POSITA -- so to that extent, if the Toge and
8 that knowledge does not disclose its limitation,
9 that's why I introduced Kumar, and Toge, in view
10 of Kumar, discloses this limitation as a POSITA
11 would have been motivated and found it obvious
12 to implement the features of the limitation,
13 including the remote Internet side of Kumar into
14 the Toge device.

15 And we discussed the Kumar device and
16 its engines which manage the transmission of
17 data from the patient-side device to the
18 provider-side device, and its configuration in
19 terms of implementing the system using the
20 various browser-based engines or remote Internet
21 site.

22 Q. Let me take you back to Paragraph 214.
23 You say: "It would have been obvious to POSITA
24 to utilize a remote Internet site." And then
25 you go on to say: "On the physician-side device

1 of Toge." Do you see that?

2 A. So this is in 214?

3 Q. Correct.

4 A. It's on Page 97 of the '921
5 declaration.

6 Q. Correct.

7 A. And it says: In light of the above,
8 it would have been obvious to a POSITA to
9 utilize a remote Internet site to receive data
10 related to subject's treatment and the
11 treatment's efficacy from Toge's wireless PAP on
12 the physician-side device of Toge.

13 Q. So is it your position that you would
14 utilize a remote Internet site on the
15 physician-side devices of Toge?

16 A. So in that my declaration reflects
17 that discussion that we are having around the
18 claim limitation, it's my opinion that Toge, in
19 view of the knowledge of a POSITA, renders
20 obvious this limitation.

21 Q. But I'm not asking that question. I'm
22 asking you the question of to utilize a remote
23 Internet site -- you state: To utilize a remote
24 Internet site on the physician-side devices of
25 Toge. So I'm asking is it your position based

1 off of that statement that a POSITA would have
2 implemented the remote Internet site on a
3 physician-side device of Toge?

4 A. So what I've said here is that Toge
5 discloses that a communication network may be
6 any one of those: Public, telephone network,
7 Internet, a mobile communication network, or a
8 dedicated line network. Any problem?

9 Q. It's not answering the question that I
10 just asked.

11 A. So I'm trying to break it down to see
12 whether that is -- so can you repeat the
13 question? Is your question to do with the
14 various communication networks that Toge
15 discloses?

16 Q. No. My question is you say a POSITA
17 would utilize a remote Internet site on the
18 physician-side devices of Toge. So I'm just
19 trying to understand that it's your position
20 that a remote Internet site would be implemented
21 on the physician-side devices?

22 A. Oh, I think I understand what you're
23 trying to ask. So you're asking is a physician
24 device able to be, for example, a server?

25 Q. Yes. I'm trying to nail down the

1 utilize a remote Internet site on the
2 physician-side device, and what your position is
3 on that.

4 A. So you know, and what I'm trying to --
5 I'm trying to understand your question, because
6 I've described it in detail, and I want to be
7 able to break it down. So, for example, if your
8 question is can a physician device be a server,
9 so can a computer that a physician uses be a
10 server, and it certainly can. A physician's
11 device can -- and almost any computer can be
12 configured to provide or run a certain software
13 that can be used, for example, to share data,
14 transmit data, receive data. The processes and
15 the types of software that are used are
16 different.

17 You know, for example, I have
18 previously -- you know, once again, I'm not
19 trying to pose myself as an expert, but I have,
20 I've done these things where I can download SQL
21 server onto a computer, and whilst I'm able to
22 receive transmissions from -- and other
23 databases, by the way, not just SQL -- other
24 databases that are basically off the shelf
25 databases that can receive data from various

1 sites. Microsoft Access as an example.

2 So then separately, if you're asking
3 if a physician is going to spend their time on
4 designing a web server, that's probably not
5 the -- you know, they're not going to be doing
6 that. But they would certainly have the ability
7 to a database and be able to distribute data
8 from either their computer, or if their computer
9 was a terminal in a network, whereas they were
10 receiving data from a network site, they could
11 very easily be running that software from a
12 central side.

13 So like I said, the configurations of
14 networks, the software, how those software run
15 and how they're distributed will depend on the
16 specific configuration of the network they're
17 on, what their levels of access for the end --
18 and also, some of this stuff in hospitals or in
19 networks or in practices that are out there,
20 independent practices, what happens is that some
21 physicians have experience in this area and
22 might set it up themselves. Whereas in other
23 areas, they have specialists, you know, IT
24 departments, they have whole departments that
25 take care of these sorts of things.

1 So I think the very broad question --
2 and I think that that provides you some insight
3 into my knowledge and what I think of Toge's
4 communication network and how Kumar's device
5 discloses that it's basically accessing data and
6 transmitting data through various configurations
7 of networks.

8 Q. I think we've been going for over an
9 hour now, but I do have just one more -- two
10 more lines of questioning before we break again.
11 Is that okay to finish this line of questioning
12 up?

13 A. Do you mind if I just take a drink?

14 Q. I don't mind that you take a drink of
15 water.

16 A. Thank you.

17 Q. So going to Paragraph 135 of your
18 declaration. Let me know when you get there.

19 A. I'm on Page 57 at Paragraph 135 of the
20 '921 declaration.

21 Q. Okay. So in Paragraph 135, starting
22 at the third line, you say: "A POSITA looking
23 to improve the physician-side computer of Toge
24 would have looked to known ways to improve a
25 telemedicine system by providing better data

1 access by implementing browser-based engine
2 accessible through web pages as taught by
3 Kumar."

4 Do you see that?

5 A. Yes.

6 Q. So is it your position then that a
7 POSITA would improve Toge's physician-side
8 computer by implementing it with a browser-based
9 engine?

10 A. So to the extent that I've stated that
11 somebody would look to improve the
12 physician-side computer of Toge, they would have
13 looked for known ways to improve the
14 telemedicine system that they -- the system that
15 they provide by better access, by implementing
16 known technologies which are implementing
17 browser-based engines accessible through web
18 pages as taught by Kumar.

19 And then beyond that, I've listed out
20 the various reasons. For your benefit, I won't
21 recite them, but I will, in the record, put that
22 I'm referring to my declaration in Paragraphs
23 136 through 140.

24 MS. FULLER: Let's go off the
25 record.

1	(11:46 a.m. PST - Recess taken.)
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1 (At 12:20 p.m. PST, with parties
2 present as before, the following proceedings
3 were had, to-wit:)

4 BY MS. FULLER:

5 Q. Dr. Kirkness, welcome back.

6 A. Thank you.

7 Q. Do you recall earlier this
8 afternoon -- or morning, I should say, your
9 time, where you testified that the browser-based
10 engine could be implemented on a physician-side
11 computer?

12 A. Could you refer back to the section of
13 the declaration in which we were discussing
14 that?

15 Q. Certainly. It would be Paragraph 214
16 of your '921 declaration, and specifically on
17 the second line where we have: In light of the
18 above, it would have been obvious to a POSITA to
19 utilize a remote Internet site to receive the
20 data related to the subject's treatment and the
21 treatment's efficacy from Toge's wireless PAP on
22 the physician-side devices of Toge.

23 Do you see that?

24 A. Again, so 214. I see the
25 Paragraph 214 that we were discussing and we

1 discussed in detail, yes.

2 Q. And you recall your testimony earlier
3 where you had said that a remote Internet site
4 could be on the physician-side device?

5 MS. ALEXANDER: Mischaracterizes
6 his testimony.

7 THE WITNESS: If there was any
8 confusion about anything that was said, I would
9 refer back to the declaration here, in that
10 section. So if we're referring to anything that
11 is -- that may be characterized in any other
12 way, I would refer to the declaration as what I
13 testified to.

14 BY MS. FULLER:

15 Q. So you don't recall where you had
16 testified about a physician-side computer being
17 a server?

18 A. So in that, I do recall that. What I
19 did testify to is that Toge discloses that its
20 remote monitoring method includes a CPAP device
21 connected to a relay device in a physician-side
22 terminal device via wireless or wired
23 communication network, and that the
24 physician-side terminal device is configured to
25 receive all or part of the treatment data

1 transmitted for the relay device. Toge
2 discloses that the communication network may be
3 any of a public network, Internet mobile
4 communication network, dedicated line network,
5 alternatively or combination of these networks.

6 So what I did say also is that in
7 light of that, would have been obvious for a
8 person of ordinary skill in the art to utilize a
9 remote Internet site to receive the data related
10 to the subject's treatment and the treatment
11 efficacy of Toge's wireless PAP on the
12 physician-side device of Toge. And a POSITA
13 would have understood that one common way to
14 access the transmitted -- the data transmitted
15 via the Internet, like the data from Toge's
16 wireless, is via a remote Internet site. That's
17 what I had testified to.

18 Q. And you recall testimony that the
19 physician-side computer could be a server? Do
20 you recall that testimony?

21 A. So I think in the discussion we were
22 referring to the combination of Toge with Kumar,
23 and in that discussion when you're asking me
24 about the combination of the Toge/Kumar system,
25 which discloses a browser-based engine or a

1 remote Internet site, and then in that
2 discussion of the Toge/Kumar device we talked
3 about the various configurations of the -- of
4 how that supports realtime streaming over the
5 Internet -- Internet, intranet, extranet, and
6 how the engine manages the transmission of the
7 data from the patient-side device to the
8 provider-side device. And that's in
9 Paragraph 218, and that's the conversation that
10 I recall.

11 Q. And in one configuration, the
12 physician-side computer could be a server;
13 correct?

14 A. So in that, you had asked me a
15 specific question around the -- I actually don't
16 recall where we were looking at the time. It
17 may be somewhere else in the declaration. And
18 I'm just going to skip back to see whether it
19 was in the earlier --

20 Q. It was in reference to Paragraph 214
21 in light of the statement above. Let me be more
22 specific.

23 Can a physician-side computer be
24 implemented as a server? Is it your opinion
25 that it could?

1 A. A physician's -- so any computer could
2 be configured to -- okay. You've got to
3 understand, I'm not going to describe every kind
4 of computer. So that would be -- but in
5 general, the computing power of computers, if
6 they have the -- a network -- the correct
7 program running with sufficient access and, you
8 know, configured in the right manner, a computer
9 can be configured to run as a server. And I
10 described that previously. And like I said, I
11 don't represent myself as somebody that has
12 studied in that area. I've used the components
13 in that area in order to achieve physiological
14 and clinical end points and device development.

15 So from that perspective, what I would
16 say is that it would be very possible if a
17 computer -- and let's say a physician owns a
18 computer. A computer can be used as a server.

19 Q. Can that physician-owned computer also
20 simultaneously be used as the client device?

21 A. So the term client device, are you
22 referring to a specific point or specific -- is
23 this in Toge, is this in Kumar, or is this in
24 the '921?

25 Q. This is the based off of the general

1 knowledge of a POSITA and how a client server
2 architecture works. There is a client device
3 and a server; is that correct?

4 A. So as I said, I would not like to
5 represent myself as having studied in this area,
6 but if you're talking about -- for example,
7 let's look at page -- the figure of -- figure 1
8 of Toge, which is Exhibit 1044 in my opinion
9 here. There is a figure, figure 1, and it
10 describes, generically, parts of a communication
11 network, which include a device that's
12 connected, a relay device that's connected, a
13 mobile terminal that's connected, and a
14 physician-side computer that's connected.

15 Q. But I'm asking specifically on the
16 client server architecture. You understand the
17 client server architecture?

18 A. So in terms of the generic term of
19 client server, if you're referring to, for
20 example, software that is positioned or
21 installed on a server that a mobile terminal or
22 a client-side terminal has access to, if that's
23 what you're referring to -- so for example, if
24 Microsoft Office is installed on a server and me
25 as a client have access but not -- it's not

1 installed on my computer as a -- let's call it
2 an executable software on my computer, but I
3 access it via a terminal to the main server, as
4 a client is that the architecture you're
5 referring to?

6 Q. Correct. In a client server
7 architecture where the client device is
8 accessing -- or making an HTTP request to access
9 data on a server. That is what I am referring
10 to. So in my question where you say the web
11 server could be implemented on the
12 physician-side computer, can that physician-side
13 computer also operate as a client device?

14 A. So you know, like I said, this is my
15 generic understanding. I'm not a specific
16 expert in the field that you just said. So I
17 don't program in HTML. You know, I don't
18 install network architecture software. I don't
19 know all of the limitations. I have installed
20 MySQL server and I have seen those -- used those
21 software in order to access devices.

22 So with all of the limitations that I
23 know, in my previous experience I was able to
24 partition a computer to run as a server and use
25 the same screen access point to utilize the

1 services of that database. So if you are
2 talking about petitioning of software or
3 petitioning of storage and being able to run
4 software from a different partition or a
5 different disk, so some computers may be
6 installed to have multiple disks, so the -- this
7 goes, I think, a long way back to the discussion
8 we had where what is a computer. So how is that
9 computer actually structured; what is it trying
10 to do. But in my opinion, it would be -- those
11 things would be possible.

12 Q. So when you ran a server and were able
13 to access the data, you were accessing the data
14 on the computer that was running the server, so
15 you were able to see that data on your desktop
16 computer screen; is that a correct
17 understanding?

18 A. So in the -- like I said, so the
19 computer screen, okay, is a -- once again,
20 that's a -- something that's interacting with
21 the various components of that computer. So the
22 computer can have multiple different hard
23 drives, multiple different softwares. Some of
24 those, software is running simultaneous. So in
25 the case where a server software is running

1 simultaneous to client software, I just don't
2 see why it's not possible, but there you go.

3 Q. Thank you for that explanation.

4 Can we open -- since you brought up
5 Toge Exhibit 1044 and you have it close to you,
6 let's kind of go into that exhibit.

7 A. Which exhibit again?

8 Q. Toge Exhibit 1044 in both IPR
9 proceedings. Are you there?

10 A. Yep, I am.

11 Q. So did you -- in prepping for the
12 deposition and in writing your declaration, did
13 you read Toge from start to finish?

14 A. So I have read Toge from start to
15 finish, yes, I have.

16 Q. And what is your understanding what
17 Toge is directed to solving?

18 A. And I describe this in my declaration.
19 I would briefly refer back to page -- I'm just
20 finding it. Okay, so -- oh, hold on a second.
21 I refer to Page 40 to 47, which is Paragraphs
22 109 through 119. And in general it discloses a
23 remote monitoring method for a patient using a
24 PAP device. There is the reference there in the
25 illustration of figure 1 from Exhibit 1044.

1 So figure 1 of Toge shows a relay
2 device, and if I refer to the figure, figure
3 Number 3, separate from a PAP device. PAP
4 device is illustrated as Number 2. Toge
5 expressly discloses that a relay device,
6 Number 3, can be incorporated into a positive
7 pressure artificial respiration assisting
8 device. Number 2. And there are references to
9 other figures here, control device, 250, of the
10 control device, 25, which is in figures --
11 figure 2 -- sorry, figure 3, allowing it to be
12 configured as an integrated unit with the
13 positive artificial respiration assisting
14 device, which in the figure 1 is Number 2.

15 So that's also described in the Toge
16 patent on figure -- sorry, in Paragraphs 60 and
17 16, which discloses that the relay device 3 can
18 be located within the company providing the
19 positive pressure artificial respiration
20 assisting device.

21 So figure 1 also shows that Toge
22 discloses that its telemedicine system includes
23 a PAP device connected to a communication
24 network by a relay device and a physician-side
25 terminal device, or devices, 4 and 5, all

1 connected to a communication network. And
2 referencing back to the original publication,
3 Exhibit 1044 in Paragraph 8.

4 So Toge further discloses that its
5 communication network may be any of the
6 following: Public telephone network, the
7 Internet, mobile communication network, a
8 dedicated line network or a combination, as
9 we've also previously discussed.

10 So in Paragraph 112 as mentioned,
11 Toge's PAP device includes a relay device that
12 is installed within the PAP device and that
13 receives PAP data -- excuse me -- from the PAP
14 device, and then transmits all or part of the
15 data to the physician-side to the terminal
16 device. I don't want to just read from the
17 declaration. But it's all -- my opinion is
18 stated there clearly.

19 Q. So is Toge then directed to the remote
20 monitoring of a patient's CPAP device by
21 physicians?

22 A. Okay, so if -- what we say about the
23 physicians in Toge are here. So in the 112
24 describes the configuration of those -- the
25 circuitry. The physician-side terminal devices

1 are devices that receive all or part of the data
2 transmitted from the PAP device to the relay
3 device and from the relay device.

4 So in other words, these devices can
5 be computers, mobile devices, personal handy
6 devices, the PDAs, which are personal digital
7 assistance, and they use the term pocket bell,
8 I've never used the term pocket bell, but they
9 use that. So about the physician-side device,
10 what more would you like to know?

11 Q. So just that Toge's system is directed
12 to allowing physicians or medical professionals
13 to monitor a patient's vitals, is that what Toge
14 is directed to?

15 A. So Toge -- that's part of one of the
16 things that Toge does describe, that the data
17 that's received by the physicians can be used
18 in -- for example, for -- as you mentioned --
19 for monitoring. So that would be one
20 configuration of the Toge device.

21 Q. What other configurations are there in
22 Toge?

23 A. So Toge -- so Toge describes, and I'll
24 find the relevant -- it describes in my
25 declaration positive pressure, artificial

1 respirator assisting devices, 1, of a home
2 medical device that is designed to deliver
3 positive air pressure. So -- and a patient
4 receiving home medical care to assist their
5 breathing. So the home medical -- those sort of
6 devices could include both bilevel or continuous
7 positive airway devices.

8 And so there is more -- I briefly
9 described in our previous sessions about PAP
10 devices that -- a simple PAP device might just
11 have one therapeutic pressure. Here Toge jumps
12 in and the very next thing describes a second
13 level of pressure that's applied for therapeutic
14 purpose. So now the complexity of the treatment
15 device includes pressure aimed at targeting the
16 inspiratory as well as the expiratory portion of
17 the -- so inspiratory, when you're breathing in,
18 expiratory when you're breathing out, changing
19 the target pressure or therapy that's delivered
20 during those phases of the breath. And the
21 reason is because there are different types of
22 patients.

23 So again, I only briefly touched on
24 this, but there are multiple different types of
25 patients that would be -- that this anticipates.

1 So in other words, sleep-disordered breathing
2 can include a spectrum of people of severity and
3 type of disordered breathing types. So an
4 obstructive event is largely overcome by a -- by
5 the pressure, and a central type sleep and
6 breathing event is overcome by the differential
7 pressure between inspiration and expiration.

8 So from that point of view Toge
9 anticipates in this one following sentence a
10 configuration that requires different types of
11 physician engagement, in being able to look at
12 different types of -- and different types of
13 patients require different types of therapeutic
14 monitoring, responses. So let me know if I
15 could dig into that further for you.

16 Q. So different types of -- was it
17 correct you said physician monitoring or correct
18 me if I'm --

19 A. So, for example, physicians are
20 treating someone with obstructive sleep apnea
21 may be differentially trained compared to
22 somebody who is treating somebody with
23 congestive heart failure. So as you can
24 imagine, that an obstructive sleep apnea patient
25 and a congestive heart failure patient may

1 present in a different manner. And one
2 physician versus another physician may have
3 different skill levels or understandings of the
4 needs of those different patients.

5 There are other sleep disorders. For
6 example, neurological based, or psychologically
7 based. There are many other different types of
8 sleep conditions that would require different
9 expertise and skill sets, and therefore
10 different monitoring needs.

11 Q. And these -- let's -- for example,
12 physician-side computer 4, where would this be
13 located? Is this located at a hospital such as
14 a nursing station?

15 A. So the anticipation of Toge is that
16 the location of the physician-side computer, or
17 the mobile terminal, is where the physician is.
18 So the physician's location would determine
19 the -- one, the configuration of the technology.
20 Two, the type of technology that the physician
21 would be using. And also, like you said, there
22 may be other people or personnel involved in the
23 care delivery that may actually include
24 additional health providing staff, like you
25 mentioned a nursing station, for example.

1 So if, for example, a physician orders
2 a health care provider such as a nurse or a
3 respiratory therapist or an occupational
4 therapist to perform some related therapy --
5 sorry, some unrelated task, I should say, that
6 they may have the authority, based on the
7 physician's prescription and order, in order to
8 conduct that procedure. And if that involves --
9 if that involves usage or interpretation of the
10 data, insomuch as they have the authority to do
11 so, they may also require access.

12 Q. Does the physician-side computer and
13 the physician-side mobile terminal, do they have
14 specialized software on the devices to be able
15 to receive the data from a CPAP?

16 A. So this is a good question because
17 predominantly in my experience is that
18 software -- software from different providers
19 can either be generic and accessible, so some
20 providers provide generic software, and some
21 providers have their own software that they may
22 provide, they may actually -- there's a very
23 good business reason why people sometimes
24 provide owner software. They might provide it
25 free, or they might provide it in terms of paid

1 or, you know, subscription. I wouldn't say too
2 much, but people do provide subscription
3 software.

4 Anyway, I think that there is
5 combinations of generic data that's accessible
6 and, for example, in my experience and in the --
7 a lot of the things, the studies that I would be
8 involved in, what we would do is we would have
9 outputs where we could both obtain the
10 proprietary, which is what you're getting at,
11 proprietary software, which may have a very
12 narrow band of a very specific focus, again,
13 back to your FDA and 510(K) comment, the data
14 may be very, very focused, and then in clinical
15 research where we want to configure those
16 physiological variables and explore more, we
17 would have generic data that we could use beyond
18 that.

19 So the use cases, I would say, include
20 and incorporate both focused data, particularly
21 if it's used in the clinical setting, and
22 generic data when you're trying to look beyond
23 the current state of the art and be able to
24 explore greater, you know, insights into product
25 development and be able to provide new features

1 to help people in ways that they need.

2 Q. So in Toge's case, is this a
3 proprietary that offers specialized data that
4 the physician-side computer would have to
5 download to be able to receive the data, as it
6 is in the market?

7 A. So I -- unless I described that
8 elsewhere in my declaration, I don't think I'd
9 be able to make an opinion on whether it is a
10 proprietary or not.

11 Q. So let's go to Paragraph 36. Seven
12 lines down, it states: In particular, if a
13 patient needs multiple specialists, the
14 physicians and providers need not download
15 particular software to access the data.
16 Instead, the physicians and providers can access
17 the data through an Internet browser.

18 So what did you mean by a particular
19 software?

20 A. I'm sorry. My apologies. I'm lost.
21 I'm on Paragraph 36.

22 Q. Oh, 136. I guess I'll let you read
23 that statement I just put into the record. It
24 starts seven lines down.

25 A. And just so I'm clear, you were

1 talking about the Paragraph 136 where I've
2 stated -- this is under the motivation to
3 combine Toge and Kumar and Burton. So -- and
4 I've listed out three and then some subpoints to
5 do with Burton over from Paragraphs 135 over to
6 144.

7 In this, the first of the opinions
8 that I provide where a POSITA would have been
9 motivated to combine under the area where I'm
10 talking about, convenience and efficacy, you've
11 pointed me to the sentence that physicians and
12 providers need not download a particular
13 software to access the data.

14 Q. That's correct. And I'm just trying
15 to get your understanding of what a particular
16 software is as it relates to our earlier line of
17 questioning about specialized software.

18 A. Yeah, so -- and in this case it says
19 the physicians and providers need not download a
20 particular software. But it doesn't mean that
21 they might not have to download a particular
22 software. And now your question is what kind of
23 particular software are there to download
24 anyway.

25 Q. I'm just trying to get an

1 understanding under your motivation to combine,
2 the physicians and providers need not download
3 particular software because they can now access
4 data through the Internet browser. That's
5 correct?

6 A. I wouldn't characterize -- so I
7 wouldn't characterize my statement in that
8 manner. The way I would say it here -- and I --

9 Q. And that's a direct statement from
10 your -- I'm directly quoting that paragraph.

11 A. Would you mind repeating the direct
12 quote?

13 Q. "If a patient" -- "The physicians or
14 providers need not download particular software
15 to access the data. Instead, the physicians and
16 providers can access the data through an
17 Internet browser."

18 A. Okay. So just to clarify, the
19 statement says when referring to, so in the
20 previous part, "By collecting data accessible
21 anywhere by the provider and physicians through
22 web pages, the need to invest time in
23 coordinating time and resources for multiple
24 doctors and patients is avoided." Right? So
25 that talks about the motivation.

1 In particular, and the bit that you
2 said -- you skipped over, it says: "If a
3 patient needs multiple specialists, the
4 physicians and providers need not download
5 particular software to access the data. So
6 instead, the physicians and providers can access
7 the data through an Internet browser."

8 Q. So I guess I'm trying to come to this
9 understanding of in your motivation to combine,
10 an improvement would be allowing access via an
11 Internet browser; is that correct?

12 A. So an improvement -- so as I've stated
13 in this configuration, so by collecting data
14 accessible in that group -- in that
15 Paragraph 136, yes, I describe the addition of
16 an Internet browser.

17 Second, I describe how the motivation
18 to provide adds a health access and benefit. So
19 I describe that in greater detail.

20 Third, I describe how somebody would
21 have been motivated to leverage advances in the
22 mobile computing and wireless networks. And,
23 you know, I discuss some of my own experiences
24 there with wireless acquisition of data.

25 And then one of the things about the

1 motivation to combine, particularly as it
2 relates to the Toge/Kumar, and this is before
3 adding the Burton's data as well, it would -- a
4 person would have naturally looked for known
5 designs and options for telemedicine like
6 Kumar's plug and play telemedicine system.

7 So by the date of the '921 patents,
8 advances in connectivity, networking capability
9 such as direct transfer through memory cards or
10 local networks, allowed therapy data to be
11 shared within hospital systems where health care
12 providers could review and adjust treatment.

13 So this supports the methods
14 described -- this is supported by that other
15 publication that you had brought up before,
16 Exhibit 1043, where the wireless transmission
17 of -- the wireless data transmission attached to
18 a flow generator.

19 Q. So it's your opinion that by
20 implementing a browser-based engine that's
21 accessible through web pages as taught by
22 Kumar -- this comes from Paragraph 135 of your
23 declaration -- physicians and providers would
24 not need to download particular software to
25 access that data. That's Paragraph 136. Is

1 that your position?

2 A. My opinion is exactly as it's read
3 out, and if you read it word for word, that's my
4 opinion.

5 Q. Can we go to Paragraph 137 of your
6 declaration where it states: Telemedicine's
7 ability to provide assessment and treatment to
8 remote areas explains why many early
9 advancements in telemedicine came from NASA.

10 A. Mm-hmm, yes.

11 Q. What do you mean by telemedicine's
12 ability to provide assessment and treatment to
13 remote areas? Like specifically how was this
14 done?

15 A. So there were many, many examples of
16 telemedicine being used in order -- and the
17 reason that telemedicine is being used is
18 because physicians are a resource limitation.
19 So there's cost and there's time required in
20 developing that specific skill. And you know,
21 once again, it's branched into many, many
22 different fields as well.

23 So telemedicine, and the ability to
24 look for solutions to be able to improve the
25 access for individuals outside of traveling from

1 remote distances to sites where a specialist
2 physician center is available, is well-known,
3 well-described. And those features were
4 well-described. I think, you know, without
5 going into the details of it, I described that
6 in my background section in detail. So from
7 Paragraph 94 through -- extensively through
8 Paragraph 103.

9 And these concepts were discussed --
10 Kumar discussed these concepts of telemedicine
11 and the benefits of access to health. And this
12 is one of the reasons that -- so sleep studies
13 were expensive. So they took -- it's not only
14 just the physician's time in asking them to go
15 to the hospital. Hospitals, or standalone
16 centers, cost a lot of money.

17 So reducing the cost by anything that
18 you can do, either -- you've heard the term over
19 the counter. So if it's suitable for over the
20 counter, or remote, in the case where a care
21 provider does need to be involved. So there are
22 cases where you can't remove the specialist
23 training, but what you can do is make it easier
24 for individuals to be able to access that
25 resource. So physicians now would be looking

1 for solutions to be able to distribute their
2 efforts and be able to provide access for a
3 large number of people.

4 I think I mentioned this before. If I
5 didn't, I'll repeat it. There were long waiting
6 times to access sleep services. There were --
7 you know, sometimes people could wait months and
8 longer. How you stratify that and who was the
9 person that had access to that health, or who
10 was the person most deserving or how do we
11 stratify, the person who is the sickest gets the
12 access but somebody who is more conscious of
13 their health and comes earlier gets access. So
14 stratifying these things was very important,
15 important for physicians to decide how we could
16 improve this system.

17 This is why telehealth became such an
18 important aspect of medicine and why people were
19 looking to improve the facilities that were
20 available for patients.

21 Q. We were talking about remote areas and
22 the lack of network availability in these remote
23 areas, cell phone tower coverage. Would that
24 have been a factor that medical device design
25 developers would be considering in their

1 implementation of how to transfer data in the
2 early 2000s?

3 A. I would -- I would find that question
4 difficult to put a definitive answer upon
5 because I think that there are many, many
6 different individuals in device development.
7 Some wouldn't be as focused on, for example, the
8 telecommunication and network design as others.
9 So it's difficult to say that any one individual
10 would be more or less focused on an area.

11 Now, insomuch as, for example,
12 somebody with experience in sensor design to
13 acquire a physiological variable was out
14 counting the number of cell phone towers in
15 rural areas would be a stretch. But what I
16 could say is that there are other ways to make
17 an assessment about how technology was available
18 in various parts of the country. And one could
19 very easily look to, for example, you know,
20 folks that had cell phones. So even in my early
21 research where I was the CTO of a company that
22 was involved in smartphone application
23 development, even there we would be looking to
24 make an assessment of what was the market size.
25 Is that predicted -- so as we develop, is that

1 predicted to increase or decrease. And it was
2 pretty clear around the time of 2000 that mobile
3 and wireless technology was definitely
4 increasing.

5 Q. Did you have -- do you know the
6 percentage of people in the general population
7 that had smartphones over flip phones at that
8 time?

9 A. No. I have not specifically studied
10 that. That's probably data that's available,
11 and we could look it up. But I didn't form an
12 opinion on the number or the type of a -- you
13 know, the cell phone makeup, brands or anything
14 like that.

15 Q. And then are CPAP devices targeted for
16 more of the older population in general?

17 A. So CPAP machines are used and have
18 been used from neonates until end of life. So
19 there are individuals who are born with
20 neuromuscular weakness and require ventilatory
21 assistance and ventilatory support from early
22 life. And there are various people at various
23 stages of their life who have various changes in
24 their physiology, and whilst I believe you're
25 referring to the increasing prevalence of sleep

1 apnea with age and obesity, but if you -- that
2 does not describe the full extent of the need
3 for respiratory support in individuals in
4 society.

5 Q. So respiratory support can go from a
6 baby to your end of life; is that correct?

7 A. From the day you're born until the day
8 you die.

9 MS. FULLER: Let's go off the
10 record right now.

11 (1:16 p.m. PST - Recess taken.)

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1 (At 1:27 p.m. PST, with parties
2 present as before, the following proceedings
3 were had, to-wit:)

4 MS. FULLER: Dr. Kirkness, thank
5 you for being here today. I have no further
6 questions.

7 MS. ALEXANDER: Thank you.

8 COURT REPORTER: (Requests orders
9 for the record.)

10 MS. FULLER: I believe I have
11 rough. Final needs to be by September 11th.

12 MS. ALEXANDER: Rough.

13 (1:28 p.m. PST - Adjournment.)

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1 C E R T I F I C A T E

2 STATE OF NEBRASKA)
3 COUNTY OF DOUGLAS) Ss.

4 I, Cheryl A. Rooney, Registered
5 Professional Reporter, General Notary Public
6 within and for the State of Nebraska, do hereby
7 certify that the foregoing testimony of JASON P.
8 KIRKNESS, Ph.D. was taken by me in shorthand and
9 thereafter reduced to typewriting by use of
10 Computer-Aided Transcription, and the one
11 hundred six (106) pages contain a full, true and
12 correct transcription of all the testimony of
13 said witness, to the best of my ability;

14 That I am not a kin or in any way
15 associated with any of the parties to said cause
16 of action, or their counsel, and that I am not
17 interested in the event thereof.

18 IN WITNESS WHEREOF, I hereunto affix
19 my signature and seal this 11th of September,
20 2025.

21 _____
22 CHERYL A. ROONEY, RPR
23 GENERAL NOTARY PUBLIC
Registered Professional Reporter

24 My Commission Expires: November 24, 2026

25

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