

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SMAXTEC INC. AND SMAXTEC ANIMAL CARE GMBH,
Petitioner,

v.

ST REPRODUCTIVE TECHNOLOGIES, LLC.,
Patent Owner.

IPR2024-01067
Patent 10,231,644 B2

Record of Oral Hearing
Held: October 21, 2025

Before SHARON FENICK, JAMIE T. WISZ, and
ANDREAS BALTATZIS, *Administrative Patent Judges*.

IPR2024-01067
Patent 10,231,644 B2

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P R O C E E D I N G S

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JUDGE BALTATZIS: Good morning. Today we will hear arguments in IPR2024-01067 concerning U.S. Patent number 10,231,644. I'm Judge Baltatzis. I am joined today by Judge Wisz and Judge Fenick. Judge Fenick will be joining remotely, so there may be delay in the audio coming in from the remote judges. So please be mindful of questions coming remotely. And let's start with appearances. Petitioner?

MR. BUROKER: Brian Buroker from Gibson Dunn on behalf of Petitioner smaXtec. Excuse me.

JUDGE BALTATZIS: Welcome. Patent Owner?

MR. MOFFETT: Daniel Moffett with Akin LLP, here on behalf of the Patent Owner, ST Reproductive Technologies. And with me is Megan Mahoney, also with Akin.

JUDGE BALTATZIS: Welcome. Before we begin, I would like to remind the parties that we each have a copy of the demonstratives you provided during your argument. Please identify clearly and specifically the demonstrative reference by the slide or screen number so that everyone can follow along and to ensure clarity and accuracy of the court reporter's transcript.

As set forth in our hearing order, each party has 45 minutes to present their arguments. Petitioner will proceed first and may reserve time for rebuttal. Petitioner, how much time would you like to reserve?

MR. BUROKER: Fifteen minutes will be plenty, thank you.

JUDGE BALTATZIS: Okay. And Patent Owner will also have

1 45 minutes to present their case and may reserve time for surrebuttal. How
2 much time would you like to reserve?

3 MR. MOFFETT: Five minutes please, Your Honor.

4 JUDGE BALTATZIS: Five minutes, okay. So I'll have that
5 down. Okay. Let's set the time. Okay. Petitioner, you may proceed when
6 ready.

7 MR. BUROKER: Okay. Good morning, Your Honor. It's Brian
8 Buroker, Gibson Dunn, on behalf of the Petitioner. I'm starting here with
9 Slide 2 because it gives an overview of the grounds that are at issue at
10 today's hearing. Most of the grounds involve the Harvey reference, as you
11 can see, Grounds 1, 3, 4, and 5. And then the Risky reference is at issue in
12 Grounds 2 and 3.

13 So I'm going to start with the Harvey-based grounds in my
14 presentation. But obviously if you have questions about any of the issues,
15 please let me know, and I can skip around as needed. So to take a step back,
16 I want to look at Slide 17 because that's the slide I have all the entirety of
17 Claim 5.

18 So Claim 5 is the first independent claim we'll be speaking about.
19 And this claim has a number of different combinations of features here. The
20 idea is you have a physiological parameter monitoring device for a ruminant
21 animal. And that device generates sensors in a bolus, which is interior to the
22 animal. It encodes the sensor signals, stores the encoded physiological data
23 in a memory. It enables a radio signal generator within the bolus that
24 activates the generator at predetermined intervals to generate a radio signal.
25 And that radio signal has a certain frequency, it's 700 MHz to 1 GHz.

1 It's the latter two claim limitations that were really the key to this
2 claim being set forth to allowance by the Patent and Trademark Office
3 because the Patent Office was rejecting the claims over and over again.
4 Because the idea of having sensors in animals, boluses, encoding the data, et
5 cetera, was all well known. It was this idea of activating it at predetermined
6 intervals.

7 And what was the benefit that the patent talks about, the '644 talks
8 about the idea -- in ideal world, you'd have this bolus be such that it would
9 last the lifetime of the animal because it's not -- it's a battery that's not
10 rechargeable. You ideally want to plant it in the animal when it's young and
11 have it last the entirety of the life cycle. So you want to use the signal, the
12 radio signal generator, less frequently so it doesn't burn out the battery. But
13 that idea, we submit, is in the Harvey reference. And when we get to it, is in
14 the Risky reference. And I want to go then -- now I'll walk through that
15 and explain where that's present.

16 So here on Slide 4, Harvey discloses a livestock management
17 system that senses the physical quantities of monitored subjects. This is
18 Slide 5, it has these incorporated telemetry devices, what it calls intelligent
19 active tags or IATs 1110, that can be either external to the animal or it
20 explicitly says they can be implanted in the animal. And here, this is a
21 passage from paragraph 38 of Harvey, it specifically says that it can be in
22 one embodiment, a digestive tract bolus device.

23 So that's a teaching that this device that Harvey's disclosing, it can
24 be external as an ear tag or it can be internal as a digestive tract bolus.
25 That's around lines 10 through 12, the highlighted portion here on Slide 5.

1 And then it goes on to say that, you know, it can be therefore retained
2 indefinitely within the animal; that's lines about 13 to 14. And then Harvey
3 provides additional disclosure, and I'll get to this in a minute. But the key
4 here is there are three issues -- this is Slide 13. There are three issues that
5 were presented. We say four arguments; there's really three issues because
6 there are two arguments boiled down into one.

7 The first issue they argue about Harvey is they said that Harvey
8 doesn't clearly disclose a bolus with a transponder that includes sensors and
9 a radio signal generator. And that was an issue that was identified in the
10 institution decision. Your Honors highlighted the petition, in your view, at
11 that point in time didn't clearly connect the different disclosures in Harvey to
12 teach that feature. And I'm going to show you, I think, that the petition
13 actually does and Harvey does. So I'm going to address that issue first.

14 The second issue they argue is that Harvey doesn't disclose storing
15 and transmitting of encoded data. They argue that the EEPROM that's
16 disclosed in Harvey could be analog, and therefore it doesn't necessarily
17 disclose encoded data. But I can walk you through that issue too and show
18 you that EEPROMs are digital by their very nature in the vast majority of
19 instances, and that therefore is a disclosure for purposes of anticipation of
20 encoding data.

21 And the third issue on Harvey, they argue that the tag transmission
22 interval that's disclosed, this idea of only transmitting data at certain
23 intervals, is limited to the subject's ID number. In other words, each cow
24 would have a different number. And they argue that what Harvey is talking
25 about is you transmit that number on a predetermined interval. And I'm

1 going to show you -- I think that it's clearly disclosed in Harvey -- that it
2 would disclose not just the transmission of the subject ID but also the
3 physiological information at predetermined intervals.

4 So let's look at this first issue. And the first issue, again, is
5 whether or not there's a disclosure that connects that passage, that this IAT
6 can be a bolus, to the disclosure of the transponder that has the other
7 components of it, the sensor and the radio signal generator.

8 So on Slide 14, we've got Figure 5 of Harvey. And Figure 5 of
9 Harvey discloses the -- basically the major physical components. And it
10 shows that there's a transponder, which it abbreviates XPDR 5000. And you
11 can see inside XPDR 5000 on the bottom left, there's a number of sensors.
12 It's labeled Sensors 1, 2, et cetera. And it also has transceivers, kind of in
13 the far right there -- we probably should have highlighted this -- XCVR 1
14 through XCVR 2. Those are the radio signal generators. So it's pretty clear
15 that Harvey discloses a transponder that has sensors in it and radio signal
16 generators.

17 It's also pretty clear, as I mentioned before -- this is Slide 15 -- that
18 IAT 1110 is disclosed as being something that can be embodied as a
19 digestive tract bolus device, as we saw earlier. So here's the connecting
20 passages; Slide 16, we've put a number of them on the screen. So at the top,
21 you've got the passage we just looked at, which says that the IAT 1110 can
22 be a digestive tract bolus.

23 The second passage here on Slide 16 is from Paragraph 131, and
24 that explicitly says that that transponder 5000 that we just looked at that's in
25 Figure 5, that it may be a constituent of the intelligent active tag, such as

1 IAT 1110. In other words, IAT 1110 can be a bolus. There's a passage here
2 that says that bolus can have transponder 5000 built into it. That's the
3 connecting tissue that links the text here in Harvey from the bolus device to
4 having a sensor and transmitter inside the bolus. And then there's one more
5 passage later on, this is from page 48 of the Harvey reference. It's another
6 example where it says that transponder 7020, which is just another
7 embodiment, may also be included in the intelligent active tag.

8 That's the missing piece that perhaps wasn't clear in our
9 explanation in the petition, but it is -- this information is all cited in the
10 petition and it's then re-explained in the replies. This is not a new argument.
11 This is material that was in the petition, and all these passages that are cited
12 were in the petition.

13 JUDGE BALTATZIS: So Counsel, just to confirm -- I can see the
14 citation too -- so these were all just, you know, maybe in the overview
15 instead of the grounds, but they were all cited to in the petition itself.

16 MR. BUROKER: Correct. I have to look to see whether pages 10
17 to 11 were the overview or whether they were actually the argument. Oh,
18 no, you're right, it's -- 10 and 11 are from the overview of what Harvey
19 discloses as opposed to the element-by-element analysis where all of these
20 elements were then explained. And then we more clearly, you know, put
21 that together in our reply brief for Your Honors to show where we had put it
22 in the petition.

23 Now they make a couple of arguments in response. They say,
24 well, even if that were the case, they need to figure out how to make a sensor
25 that would work internally. And the response to that is, well, first of all

1 -- this is Slide 17, sorry -- there's no particular type of sensor that's
2 mentioned in the claim, just a sensor that's in a bolus.

3 And I'm going to go to Slide 19. There's text in Harvey that we
4 cited in the petition -- pages 18 to 19 in the reply -- page 4, where Harvey
5 says that a person of skill in the art could choose the sensor based on a
6 variety of different factors, and one of them is the location of the sensor.
7 And it's the very end here, it's not highlighted, the very end, around line 14,
8 it talks about choosing sensors that can be implanted, minimally invasive, et
9 cetera. So it contemplates that Harvey would have -- or Harvey
10 contemplates that the sensor could be implanted. That would be the sensor
11 that you would use inside of a bolus, obviously, as disclosed in Harvey. So
12 that's the first issue.

13 The second issue is whether or not there's storing and transmitting
14 of encoded data. And I think this is a reasonably simple explanation. If
15 there's no dispute between the parties that Harvey discloses a memory and it
16 discloses a microcontroller, and it also says that the microcontroller's
17 memory can be an EEPROM, as just one example, their argument is, well,
18 an EEPROM could be analog. And they've got declaration testimony from
19 their expert that says there's a type of EEPROM that's analog and therefore
20 it's not necessarily true that just because you have an EEPROM that it has to
21 be digital.

22 But the vast majority of EEPROMs are digital. And therefore,
23 when Harvey discloses an EEPROM, it discloses at least a digital storage
24 device, which is all the claims require. And if you have a digital storage
25 device and you have sensors that are analog, then you necessarily have some

1 form of -- you can't get from an analog sensor to a digital memory without
2 some form of encoding. And I think that's the analysis that the Board went
3 through in its institution decision. And we believe that's correct.

4 So the fact that maybe there are edge cases where an EEPROM can
5 be analog, that's one thing. But that doesn't prove that Harvey is not
6 disclosing digital. In fact, they would need to show that a person of skill in
7 the art would always understand an EEPROM to be an analog. And that's
8 not in this record because it's not true. Our evidence demonstrates that an
9 EEPROM can be digital, and therefore that disclosure is sufficient.

10 Now, I think you're going to hear from Patent Owner that we've
11 changed our position. And that's improper. And I want to be clear, that's not
12 true. What our petition says is when you have EEPROM, that necessarily is
13 a digital device at least. And then if you have digital, you necessarily need
14 some conversion from analog to digital. That's not an inherency argument.
15 That's an argument that EEPROM discloses digital affirmatively. And then
16 as a result, you're going to necessarily have some sort of conversion. We
17 didn't switch from an inherency argument to an explicit disclosure argument
18 in our reply.

19 So I'll move to the third issue on Harvey anticipation. And this is
20 the issue about whether Harvey's disclosure is limited to transmission of just
21 the subject's ID or whether it also talks about transmission of the animal
22 information at predetermined intervals. This is Slide 23; if you look, this is
23 a passage from Harvey that says in one example implementation, the
24 transmitter -- actually, the element 5000 may initiate communication by
25 transmitting an outbound IAT message to INT 5900 on a preselected tag

1 transmission interval.

2 And then the next slide, 24, this is another passage that says those
3 IAT messages -- this is the second sentence, paragraph 44, an IAT message
4 may selectively include an SID, true; but it also would have subject data,
5 subject dynamic information, a predetermined monitored subject state, or a
6 predetermined subject state alert; information, the physiological information
7 about the animal would be -- is taught to be in that message. So there's a
8 disclosure when you have those messages that are being sent, you would
9 include subject data, the data about the subject, the animal. So now I want
10 to go down to --

11 JUDGE BALTATZIS: Counsel, before we move on to the next
12 issue, just to clarify, I believe Patent Owner has made an argument, if we go
13 back to Slide 23, that, you know, the transmission interval relates directly to
14 collision avoidance as opposed to sending physiological information. Is that
15 an accurate reading? Why should we not limit it to just a collision
16 avoidance example?

17 MR. BUROKER: Two answers. First of all, even if it's limited to
18 collision avoidance, which we don't think it should be, it's still an instance
19 where there's a predetermined transmission of the message. So it says the
20 transponder 5000 will initiate communication by transmitting an outbound
21 IAT message. And as I've showed on Slide 24, the IAT message can always
22 include the subject data. So there's no disclosure, in our view, that you
23 would limit that collision avoidance message to include only the subject ID
24 information. We don't think that's clearly shown in Harvey. So that's the
25 first answer.

1 And the second answer is that -- this is Slide 25, I skipped it. Let
2 me come back to it. There is another example in Harvey, that we pointed
3 out in the petition on page 26, that just says that transponder 5000 may self-
4 assign a selected tag transmission interval upon initiation. And you can have
5 that during manufacture, for example. So there's another example in the
6 patent, in the Harvey patent, where it's not just in the collision avoidance
7 situation. It's hardwired in at the manufacturer or it can be programmed in
8 here, as disclosed here in paragraph 73 of Harvey. So that's the answer to
9 that issue. Thanks.

10 So rather than skipping to Risky, I'm going to keep going on
11 Harvey. So Claim 7 -- this is Slide 47, and now 48 -- Claims 7 adds to
12 Claims 5 and 6 the idea that you have this matching element. And we
13 present the argument that that Claim 7 would be obvious over Harvey in
14 view of Rettedal. This passage here on the right side of the slide is from
15 Rettedal, and it clearly discloses a matching element. And it clearly
16 discloses that this matching element would adjust the radio signal frequency
17 because of the interaction with the mass of the animal.

18 So what Claim 7 is talking about is you have this transponder that's
19 deep inside of a very large animal, the frequency is going to change from
20 where it starts to when it gets outside the animal. So what you want is a
21 matching element that's going to help shift the frequency back to what is
22 expected so that the receiver can properly receive it. And that's exactly what
23 the Rettedal reference teaches. It teaches the benefit of doing that in a bolus
24 that's embedded in an animal, because Rettedal has a bolus. We think there's
25 a clear connection there, that a person of skill in the art would have been

1 motivated to improve the Harvey system with the Rettedal match element
2 that's disclosed here.

3 So what is their argument for this Slide 50? They argue that a
4 person of skill in the art would understand this matching elements to require
5 that the antenna - let me read the highlighted part, the claimed matching
6 elements therefore adjust the antenna's center frequency to match the radio
7 signal generator's output frequency. So they're saying what Claim 7 actually
8 requires, even though it never mentions an antenna, is that you have to adjust
9 the antenna's center frequency. Let me go back to Slide 48. That's just not
10 what this claim says. There's no mention of the antenna in Claims 5, 6 or 7;
11 7 is dependent from 6, which depends from 5, nowhere in there is there a
12 mention of the antenna.

13 In fact, we think the proper reading of the claim is if you walk it
14 through, you have a signal generator that's enabled, you activate that
15 generator, the generator signal. The generated signal has a certain
16 frequency, 700 MHz to 1 GHz. And then in Claim 6, there's more
17 specificity there. But then in Claim 7, it says you adjust said frequency of
18 said radio signal. So the thing that's been output of the signal generator is
19 adjusted by the matching element.

20 What they're arguing is, no, no, no, what you do is you actually
21 adjust the center frequency of the antenna before any signal is actually
22 generated. And that's just not supported by this expressed language of the
23 claim. They should not be permitted to rewrite the claim. They could have
24 filed a motion to amend if they wanted clarification on what Claim 7 covers.
25 And therefore, we think that this, Claim 7, is obvious.

1 The next issue has to do with Claims 9 and 10. This is Slide 52,
2 but I'll make it to Slide 53. So in Slide 53, we have -- in blue here, these are
3 largely the elements of Ground 1, Claim 5. And we've already talked about
4 how Harvey discloses all of those elements. It doesn't disclose anything
5 about having an antenna that has a pair of electrically conductive loops.
6 And then Claim 10 adds some more details about those loops.

7 But there's a reference called Kunda that discloses -- there's really
8 no dispute that Kunda discloses the elements in here, the bottom element of
9 Claim 9 and then the element of Claim 10. Slide 54, Kunda is prior art. It's
10 a device that talks about the benefits of having two or more loops, as for
11 your antenna, rather than just one.

12 In fact -- let me skip down to Slide 57 -- if you see in Kunda, what
13 we have on the left is an argument that Patent Owner raised. And on the
14 right, here's the actual text of Kunda from paragraphs 5 and 6. Kunda's
15 talking about in the objective that one of the disadvantages of a monopole-
16 type antenna is that when it's placed near a printed circuit board there can be
17 communication problems; it will diminish the characteristics of the antenna.

18 So the present invention improvement is to provide a dual type -- a
19 dual loop antenna. So Kunda is specifically teaching when you have a small
20 environment where you're going to be close to the printed circuit board,
21 you'd want to have the benefit of two loops and not one. And that is exactly
22 why we argue that a person of skill in the art would have been motivated in a
23 bolus, which is going to be a small device inside of an animal, to improve
24 that device by having this dual loop type of antenna. So that is the argument
25 with regard to Harvey going through - for Claims 5, 6, 7, and 9, and 10.

1 JUDGE FENICK: Mr. Buroker?

2 MR. BUROKER: Yes?

3 JUDGE FENICK: Can you address what you've said in the
4 petition and elsewhere about the type of -- I guess, Kunda is a mobile phone
5 patent, and why one of ordinary skill in the art would have looked to that in
6 order to solve the issue they were having with the prior art.

7 MR. BUROKER: Yeah. So I think what we presented in the
8 petition was the idea that, you know, persons of skill in this art would have
9 had -- I think both parties have a background definition of the person of skill
10 in the art would have some familiarity with communications technology.
11 Because we're talking about not only a device that's in an animal, but the
12 point of the device is to be able to transmit it back to some receiving entity
13 so that it can be properly received. So this is -- the field of the invention
14 here is really focused on wireless communication as well. And this
15 particular antenna is described as being particularly beneficial in
16 telecommunications exactly, which is a wireless communication protocol.

17 So a person, we believe, would look to other areas where there's a
18 smaller device trying to transmit wirelessly. And that's why a person would
19 look to something like a cellphone or another smaller mobile communication
20 device, which is effectively what you've got here. You've got a mobile
21 device inside of an animal and it's basically the same kind of an EDF when
22 you're trying to transmit to a central system. I think that's our argument as to
23 why you would look to something that's not necessarily in the animal
24 monitoring field, but you're looking at something that's a wireless
25 transmission improvement in that field.

1 Let me go to the Risky ground. So we also presented an
2 argument based on a prior reference called Risky, and we've got two
3 different grounds that involve Risky. Ground 2 is an anticipation argument
4 based on Risky. And Ground 3 is an obviousness ground that combines
5 Harvey and Risky.

6 So on Slide 27, I can walk through -- but quickly, Risky is a
7 bolus. There's no question, Risky is a bolus device that's for monitoring
8 animal characteristics such as heart rate, blood pressure, respiration, et
9 cetera. And it has a signal generator; Slide 28. It makes readings over time
10 of the animal's characteristics; this is Slide 29.

11 On Slide 30, we talk about how it stores those measurements in
12 machine-readable instructions -- or sorry, in a memory unit 250. Slide 31
13 talks about that the storage device can be a PROM, an EPROM, an
14 EEPROM. It gives a variety of types of storage where that encoded data can
15 be -- can reside. Slide 32, it's got a radio signal generator in the bolus.

16 Slide 33, it has modes of operation in which the information is
17 periodically transmitted. It talks about a transmission interval. In fact, there
18 are two modes in which there can be transmission. There's something called
19 a burst mode. And then Slide 34, an online mode. In both burst mode and
20 online mode, there are predetermined periodic transmission intervals. And
21 then Slide 35, it has the frequency within the required frequency range
22 specified in Claim 5 and 6.

23 So let me go to the argument. So they argue -- this is Slide 37,
24 they make three arguments here. They argue that Risky doesn't teach the
25 storing and encoding of -- sorting and transmitting of encoded data. This is

1 basically the same argument we talked about with Harvey, there's an
2 EEPROM. Because there's an EEPROM, there's going to be encoded data.
3 But moreover, in Risky, there's additional information that suggests that the
4 data is compressed. With respect, I don't know how you compress analog
5 data. So the disclosure of compressing data is further disclosure that in
6 Risky you are dealing with encoded data.

7 They also argue that neither of the modes presented in Risky
8 actually transmit on a predetermined transmission interval. But as I will
9 explain, both modes explicitly say in Risky that they're done on a
10 predetermined transmission interval. And then they make an argument that
11 the sensor signals don't vary with physiological parameters. And we think
12 that, clearly, they do because they talk about the kinds of behavior in the
13 animal that are going to change, and therefore the signals would need to
14 change.

15 So the argument with regard to the storage and encoding of
16 information is very similar to what we just talked about with Harvey. So I
17 kind of want to skip that. We think it's pretty clear that EEPROMs would be
18 digital, and therefore they're necessarily would be encoding to get to that
19 digital storage. In addition -- this is Slide 40 -- within Risky there's
20 additional disclosure that it talks about here, that the data can be compressed
21 and it can be reduced. That's the kind of thing that you talk about to a
22 person of skill in the art would understand is digital data. You compress
23 digital data, you reduce the amount of digital data, it must be digital data at
24 issue here in the Risky device.

25 Now, this next argument --

1 JUDGE BALTATZIS: Counsel, sorry, just before we move on to
2 the next argument, just to confirm -- and this might go back to the Harvey
3 too -- when you use the term "necessarily", you're not implicating inherency,
4 you're just saying that these are digital devices. And that's a disclosure
5 rather than inherent.

6 MR. BUROKER: Just to be clear, I know it necessarily usually
7 triggers the idea of something of inherency. We think when you -- I think
8 the petition says and disclose, when you see EEPROM, that discloses digital.
9 Now, there can be edge cases where you can have an analog EEPROM. But
10 when I say EEPROM, I at least am disclosing digital. There's no evidence
11 here that when I say EEPROM that would exclude digital when I only refer
12 to analog.

13 And if that were the case, then maybe they would have a point.
14 But because it says EEPROM, it at least discloses digital. It's kind of like
15 -- analogies are always dangerous, but if I say fruit I'm at least telling you
16 apples, oranges, bananas. I don't have to go through and list all the different
17 fruit. When I say fruit, you know what things are fruit. When I say
18 EEPROM to a person of skill in this art, they know it's at least including
19 digital.

20 And if there's digital storage and you have analog sensors, the only
21 way you can get from analog to digital is some form of encoding. And I
22 think that's what the institution decision picked up on. That's where the
23 "necessarily" comes in. You can't get from analog to digital without some
24 sort of encoding. That's where the "necessarily" comes in.

25 So there's two modes, burst mode and online mode. This is Slide

1 41. In burst mode, there is a transmission, I should say, interval. It's a typo
2 in the Risky patent. But I think it's pretty clear it's talking about a
3 transmission interval and not a transmission internal.

4 And then Slide 42, in the online mode, it says bolus 210 may
5 transmit animal characteristic messages at the online transmission frequency
6 specified by the instructions. And therefore, it gives a disclosure that it's
7 going to do that at a certain interval. So in both modes of operation, burst
8 mode or online mode, it's a predetermined interval at which the animal
9 information is transmitted.

10 So the last ground, I just have a few -- I see I don't have much time
11 left on my -- at least my opening remarks. The point of Ground 3 was to say
12 to the extent that the Board didn't believe that Harvey's connection between
13 the bolus disclosure and the details of the sensor being in the bolus was not
14 clear enough, Risky clearly discloses a bolus that has a transmitter, that has
15 a signal generator, that has sensors. And therefore, in the way the heading
16 was presented, the petition is Harvey in view of Risky.

17 And the point of that was just to say to the extent Harvey doesn't
18 make it clear enough that, in view of Risky, a person of skill in the art
19 would have known how to present a bolus with the sensor and with the
20 signal generator inside of the bolus. So that was the point of Ground 3 and
21 why we believe that at least Claims 5 and 6 would be obvious based on
22 Harvey over Risky.

23 Unless you have any other questions, I'd like to -- I'll save my
24 remaining time for rebuttal. Thank you.

25 MR. MOFFETT: Good morning, Your Honors.

1 JUDGE BALTATZIS: Good morning.

2 MR. MOFFETT: Daniel Moffett, happy to be here front of you
3 again on behalf of the Patent Owner, ST Reproductive Technologies, on the
4 '644 Patent. Obviously, we're open to any questions from the panel, but I am
5 -- the intent is to split up the discussion today between myself and Ms.
6 Mahoney, who I'm pleased to tell you this is her first appearance before the
7 PTAB, and she's looking forward to it.

8 The plan is for me to address the Harvey anticipation ground,
9 which of course, as the panel is aware, has implications with respect to
10 Grounds 3, 4, and 5, as well because Harvey is used in all obviousness
11 combinations. And then Ms. Mahoney will address Risky and then
12 additional obviousness considerations with respect to this.

13 Starting with Slide 3, I do want to quickly back up and address
14 kind of where Mr. Buroker started, where he focused the panel on some
15 discussion of the prosecution and the last two elements of Claim 5. I think
16 it's important to re-emphasize that the Petitioners in this case selected to go
17 with anticipation. These are anticipation arguments with respect to Harvey
18 and Risky. And some of the discussion, as the reply was brief in some of
19 Mr. Buroker's discussion today, I believe we're kind of edging into maybe
20 some obviousness-type arguments. So I want to focus the panel on the fact
21 that these are anticipation grounds. And that was Petitioner's choice.

22 The invention, as Mr. Buroker summarized, is a novel bolus that's
23 orally administered to an animal and that -- and this is important, it contains
24 within it sensors for measuring physiological characteristics of the animal
25 and a radio signal generator that operates in a specific way. And yes, the

1 inventors concluded that this particular configuration extended the lifespan
2 of the device, allowing them to put it in a calf for its whole lifespan. An
3 important takeaway is that neither Harvey nor Risky disclose a bolus as
4 arranged in the claims, which is required for anticipation.

5 So I would like to start with Harvey. And on Slide 5, we have
6 Claim 5 presented. And again, the sensors in this case are contained within
7 a bolus. The bolus also contains a radio signal generator. Harvey's entire
8 disclosure, as we see on Slide 6, of a bolus -- all of the 90 pages of Harvey is
9 shown on Slide 6. There's three references to a bolus in total, one
10 discussion. There's no description of a transponder configuration that's used
11 specifically with the bolus. There's no discussion of an internal radio signal
12 generator within that bolus. And critically, there is no description or
13 discussion here of sensors in this bolus.

14 And I think this is an important point because of something Mr.
15 Buroker said, which the transponder that they're relying on is flexible, as he
16 said. And again, this is giving them the -- this is based on his argument that
17 that would be even combined. That transponder, per Figure 5 as he showed
18 you, contemplates sensors outside of the transponder, outside of the tag.
19 And we'll get to Figure 5, I'll illustrate it.

20 But what we don't know is that how Harvey's bolus is arranged.
21 Are the sensors outside the bolus and communicating with the bolus, and the
22 bolus is sending the signal? The key is, we don't know. We don't know how
23 the bolus configuration embodiment is arranged. Harvey does not tell us at
24 all. And again, this is anticipation, so that matters. Because the bolus of
25 Harvey is never -- there's no sensors or radio signal generators described.

1 As in Slide 7, we see Petitioners rely on this transponder 5000. It's
2 in fact the focus of Ground 1. It never described as being specifically a
3 bolus. And here's what I was talking about in Figure 5. What we see, there's
4 a box around the transponder that's highlighted in red. Outside of that box is
5 our sensor in -- to the extent -- and we don't believe there's any reason that a
6 person would combine these two. And that's not even the test for
7 anticipation. With a bolus, the takeaway is Harvey's bolus, one of the
8 configurations with an external sensor; in which case, it's not arranged in the
9 claim. We don't know, it doesn't spell it out. It's anticipation. It must be
10 spelled out.

11 Furthermore, the transponder 5000 is never described. It's a
12 particular embodiment of a transponder. It's never disclosed as being
13 suitable for use in a bolus. In fact, when the transponder 5000 is introduced,
14 Harvey states that a suitable active tag may be a tag such as the IAT 1110
15 version in Figure 1. Figure 1 is the bottom right. Those are ear tags. Tag
16 2000 in Figures 2 and 3, all ear tags, all external, never used in a bolus
17 environment.

18 So, in our view, as we put forth in our papers, this is a situation
19 akin to *Net MoneyIN v. VeriSign*. Anticipation is not met by relying on
20 multiple distinctive teachings that an artisan might combine. The panel in
21 the institution decision referenced *Blue Calypso*. This is not a *Blue*
22 *Calypso*-type case. In *Blue Calypso*, you had a limited number of email
23 marketing tools that could just be simply tacked onto each other. There's no
24 mechanical, technical -- no reason why you couldn't tack it. But critically,
25 the reference there explicitly contemplated combining those two. That's not

1 what we have here.

2 Moreover, importantly, technologically, you can't just swap out
3 any tag for another tag. You can't simply take an external tag and say, well,
4 what if this is an internal bolus? And we know that from Dr. Kan's
5 testimony, for example, where he said an internal bolus and external ear tag,
6 those require different technological features: different antenna, different
7 batteries, different communication protocols.

8 Further, the examples of sensors in the transponder 5000 include
9 sensors that require intimate affixment to the exterior surface of the animal.
10 They're not feasible or practical in a bolus. This informs us that the bolus
11 configuration, the bolus embodiment of the tag, is not combinable or not
12 disclosed to be used with the transponder 5000.

13 In fact, as I said, there are no sensors discussed with respect to the
14 bolus. And for -- because Harvey doesn't disclose it, any sensor on the
15 bolus, to the extent it works with one, could all be outside the bolus
16 accordingly, not anticipated, not arranged as in the claims. And what we
17 heard from Mr. Buroker was, well, obviously you'd use the implanted sensor
18 in a bolus. Not so. The implanted sensor could be under the skin, separate
19 from the bolus.

20 We're just speculating here. We've gotten to obviousness of, well,
21 you do -- of course you take this bolus and combine those things. That is not
22 the test. It's not what Petitioner has elected to do. So we don't believe that
23 they met the threshold in that -- of showing that there's any disclosure of a
24 bolus as a range.

25 Furthermore -- Slide 11, I put up Claim 5 again -- Harvey fails to

1 disclose the activating steps, whereas the radio signal generator is activated
2 at predetermined intervals to generate a signal that carry encoded
3 physiological data. As used in the specification, as Dr. Kan testified -- and
4 we've heard no dispute from Petitioners or their expert -- predetermined
5 intervals used in the claim is a set known period of time. It's not some
6 triggering event or the like. It's a set known period of time. There's no
7 dispute as to that.

8 In the reply, there was some suggestion from Petitioners that the
9 signal need not carry encoded physiological data at predetermined intervals.
10 I didn't hear that from Mr. Buroker. I think that reading would be
11 inconsistent with the plain and ordinary meaning of the claims and how a
12 person of skill would read it.

13 So with that, I'll jump to Slide 13. Slide 13 depicts the entirety of
14 Petitioner's argument in the petition with respect to the predetermined
15 interval limitation. Above and below this -- we're not trying to hide
16 anything -- there's discussion of activating the radio signal generator and
17 whether it carries physiological data. But with respect to interval, Slide 13
18 shows the entire argument, these two sentences, both of which refer to the
19 preselected tag transmission interval.

20 Mr. Buroker mentioned the preselected manufacturer. That, again,
21 is a selected tag transmission interval. Both of those are referring to the
22 collision avoidance protocol. I think it might have sounded like he was
23 suggesting that the second statement, the manufacturer selection, was
24 something different. But I'd ask you to go to page 27 of Harvey, just look
25 right above that discussion, it's still in the collision avoidance protocol.

1 And so if we look at this, the discussion they rely on, on Slide 14,
2 we kind of see it in context in Harvey. Harvey tells us that in a crowded
3 kind of interrogation field, as we see in Figure 1, with a lot of animals,
4 communication collision may occur where two or more transponders
5 transmitted approximately at the same time and then you lose information.
6 Accordingly, he teaches a collision avoidance protocol to avoid that. And
7 that's where he talks about initiating communication using a preselected tag
8 transmission interval.

9 This language -- and this is what Petitioners rely on -- this is an
10 alternative to transmitting the physiological data, all the data, at
11 approximately the same time to avoid a collision. This is an alternative to
12 that. So, yes, while a transmission in kind of overview, an IAT may include
13 certain things beyond just a ping, as Dr. Kan says. In the context of what
14 they're relying on and in the context of collision avoidance, it does not.
15 They're trying to avoid sending all that information and having it collide.

16 And Dr. Kan, Patent Owner's expert, explains that in this context
17 when it's talking about initiate communication, a person of skill would
18 understand that they're not sending the physiological data. This outbound
19 message is a ping that if acknowledged will then send the physiological data.
20 So the interval that they're talking about is an interval between pings, not
21 sending physiological data which is required in the claim. Petitioners
22 acknowledge that the purpose of sending this IAT message and this protocol
23 is to determine whether a channel is clear so physiological data can be sent.

24 I think another thing to keep in mind, and I think it supports Dr.
25 Kan's interpretation that this is not sending physiological data, is the only

1 example here -- I'm back on Slide 14 -- that they rely on that interval, a
2 selected period tag transmission interval of about two seconds.

3 JUDGE FENICK: Sorry, Mr. Moffett, don't they rely on
4 paragraph 73 of Harvey, page 27, lines 14 to 17? I think it was on
5 Petitioner's Slide 25 also.

6 MR. MOFFETT: Yeah. Did you say page 27? Sorry.

7 JUDGE FENICK: Page 27, lines 14 to 17.

8 MR. MOFFETT: Right. Your Honor, if you look at that, that's the
9 preselected during manufacture discussion. If you look right above that, it'll
10 show you in context. This is still talking about the collision avoidance
11 protocol and the only time the interval that's discussed. And so it's still in
12 the exact same context. The interval is still sending -- that's still the interval
13 for sending a ping, as opposed to transmitting physiological data. Same
14 discussion essentially just an alternative way to set that interval. And that
15 interval --

16 JUDGE FENICK: Thank you.

17 MR. MOFFETT: -- for example, is about two seconds. And this is
18 telling. So if Petitioners are correct and they're sending physiological data
19 every two seconds, we're looking at about 43,000 messages containing the
20 full physiological data every two seconds. Not only is that inefficient, but
21 that directly contradicts what Harvey's trying to do, which is avoid sending
22 the data at approximately the same time because information can be lost. So
23 yes, as the panel noted in institution decision, this is an example, two
24 seconds is an example. But it informs how we interpret what the interval is
25 here. And the interval is an interval between pings, not an interval between

1 sending physiological data.

2 The last point we want to address with respect to Harvey is the
3 encoding requirement. Go to Slide 17, we've highlighted the aspects of
4 Claim 5 that require encoding data. We did focus on all three aspects in our
5 briefing about you're encoding the physiological data, you're storing it, and
6 then you're carrying that on a signal. For purposes of today in the panel
7 today, I want us to focus on storing -- I think Mr. Buroker did as well -- that
8 not only do you have to code that data, you have to store it as encoded
9 physiological data.

10 And jumping to Slide 18, we see Petitioner's argument in the
11 petition. Their argument is that Harvey necessarily requires analog signals
12 to be encoded into digital form. We did interpret this as an inherency
13 argument. We still read it that way, given the whole context. However, to
14 the extent they meant to say to make a disclosure -- to the extent they're not
15 making an inherency argument with respect to storage of digital -- of
16 encoded physiological data, we don't believe they have an argument. We
17 don't believe there's evidence of disclosure. And if they are making an
18 inherency argument, it does not meet the high standards for inherency.

19 Slide 19, In re: Robertson, the panel's familiar with the law,
20 inherency may not be established by probabilities or possibilities, it's
21 necessarily present. And so when I hear Mr. Buroker say EEPROMs are
22 digital in a vast majority of instances, that's not sufficient to meet inherency
23 argument. It's not sufficient to show inherency. An edge case where a
24 reference does not anticipate means the reference doesn't anticipate. In this
25 case, EEPROM -- Harvey's silent on whether the EEPROM is analog or

1 digital. And it could, in fact, be analog. There's no disclosure of storing
2 encoded physiological data.

3 Jumping to Slide 20, to kind of elaborate on this further, we know
4 that the sensors produce analog signals. Dr. Young testified to that, that's
5 Petitioner's expert. There's also an acknowledgement that digital
6 transmission is not necessarily required by Harvey at the final end. But the
7 key -- and again, what I want to focus on -- is digital storage. And it's
8 important to focus -- the panel, when you go back and review the materials
9 -- to make sure that I emphasize this, Petitioners only rely on EEPROM
10 storage.

11 So if you see other references to other storage in Harvey,
12 Petitioners have elected not to rely on that, and it goes beyond the scope of
13 this hearing. But Petitioners are essentially trying to preserve a non-
14 infringement argument with respect to the non-transitory (INDISCERNIBLE
15 - TECHNICAL DIFFICULTY). So Petitioners only rely on EEPROM,
16 that's our focus. Harvey does not say whether it's analog or digital
17 EEPROM. And as Dr. Kan testified, and I believe Mr. Buroker
18 acknowledged, there are instances of the EEPROM where it's analog.
19 Harvey is silent; it could be analog, not anticipated.

20 Now, to back up his argument, Mr. Buroker said, well, you've got
21 to -- the analog sensors go through the microprocessor. Dr. Kan said
22 microprocessors have analog input, outputs. In fact, for a sensor-type signal
23 that's analog, it's commonly used. So that doesn't mean that it's encoded
24 prior to storage. And then the fact that it's transmitted digitally, that is
25 indeed the case. That does not tell us it's encoded. It's stored as encoded

1 data in the storage phase. Because, again, as Dr. Kan testified -- and I don't
2 believe there's any real dispute -- analog data can be encoded as part of the
3 transmission stop.

4 So we've got kind of suggestions or theories or reasons why it may
5 be -- an edge case, could be. This is anticipation. They have not established
6 that Harvey discloses either a bolus, configured as claim, transmitting at
7 predetermined intervals in the way the patent claims it, or storing encoded
8 physiological data. All is required in dependent claims.

9 On that last point, I think Slide 21, this kind of comes full circle
10 around the beginning of the discussion where we've seen sort of an
11 acknowledgement that maybe they didn't do a great job at the petition stage
12 of establishing anticipation. You know, as Judge Baltatzis asked, we've got
13 some background information that's now been kind of pulled into the
14 arguments.

15 Similarly, here I think there's an acknowledgment that maybe they
16 didn't establish the encoding, particularly with storage. We see a shift from
17 the petition. Harvey necessarily requires analog signals to be encoded in
18 digital form. The reply, okay, Harvey discloses it, the use of digital and
19 otherwise encoded data. But then look at where that -- what they cite to for
20 support. They cite to Dr. Young's reply declaration, Exhibit 1025, where Dr.
21 Young, their expert, says a person of skill reading Harvey in 2015 would
22 have been motivated to store and transmit digital physiological data. It
23 would have been obvious to a person of skill in the art. That's where we've
24 ended up. And it's improper for a Petitioner to kind of shift their arguments
25 in this fashion.

1 Slide 22, we have a couple cases which I'm sure that the panel is
2 familiar with. But shifting arguments substantively, particularly from what's
3 really an anticipation based on a Harvey argument to what's becoming more
4 of an obviousness argument, is foreclosed by both statute, the Federal
5 Circuit precedent and the Board's guidelines. So in our view, they failed to
6 show that Harvey discloses the invention, particularly as a
7 (INDISCERNIBLE) claim, which is required. And as I mentioned at the
8 outset, that also has implications with respect to Grounds 3, 4, and 5.

9 But Ms. Mahoney, unless there are questions, will address those
10 additional obviousness considerations, as well as Risky.

11 JUDGE BALTATZIS: Counsel, before you go on, I actually gave
12 you all 45 minutes rather than reserving five minutes.

13 MR. MOFFETT: Okay.

14 JUDGE BALTATZIS: So I'm going to adjust the time right now.
15 I just want you to -- just so we know exactly where we are.

16 MR. MOFFETT: We appreciate it. We can do --

17 JUDGE BALTATZIS: I apologize for the mistake.

18 MR. MOFFETT: That's all right, Your Honor.

19 MS. MAHONEY: Thank you, Mr. Moffett. And thank you, Your
20 Honors. As Mr. Moffett explained, I will be addressing the anticipation
21 ground for Risky, as well as the Harvey-based obvious combinations.

22 Starting with Risky, now Risky was actually a reference that was
23 considered by the Patent Office previously. But Risky fails to anticipate
24 both Claims 5 and 6 because Risky fails to disclose several of the same
25 elements that Harvey fails to disclose. Now on Slide 25, starting with

1 Risky's failure to disclose predetermined intervals, as Mr. Moffett
2 previously addressed, Claim 5 requires activation of the radio signal
3 generator at predetermined intervals and also requires that the activation of
4 the radio signal carries animal data.

5 Moving to Slide 26, what does it mean to have activation and
6 transmission at predetermined intervals? Mr. Moffett previously addressed
7 this just a little bit. But based on Dr. Kan's review of the '644 Patent,
8 predetermined intervals are a set and known period of time, such as every 24
9 hours. And that period of time is determined in advance. So this is an
10 important distinction. Because contrary to some of Risky's disclosures and
11 some of the discussion of transmission intervals in Risky, predetermined
12 intervals are not capable of and do not vary in response to a triggering event.

13 Now on Slide 27, Petitioners rely on two different operational
14 modes that they claim establish predetermined intervals. As Mr. Buroker
15 mentioned, first is burst mode, and the second is this online/offline mode.
16 Now, Risky describes both of these as processor operational modes for a
17 bolus with machine readable instructions 252. But as Patent Owner expert
18 Dr. Kan explains, neither of these modes disclose activation and
19 transmission at predetermined intervals.

20 So now on Slide 28 and starting with burst mode, Risky explains
21 that in burst mode these transmissions occur in bursts. They don't occur
22 when the sensor actually does the polling, and that these burst modes are
23 actually specified by the machine readable instructions 252. Now
24 Petitioners assume that transmission interval is some sort of fixed period of
25 time, but Risky does not provide any support that transmission interval is a

1 fixed period of time or set and known period of time.

2 So on Slide 29, in fact all of Risky's explanation of burst mode
3 occurs in paragraph 49. But the problem is, paragraph 49 does not provide
4 any sort of additional detail as to what these transmission intervals are or
5 how they are specified, other than with reference to machine readable
6 instructions 252. And so the explanation as to how these transmission
7 intervals are specified actually occurs in paragraph 48, the preceding
8 paragraph. And according to Dr. Kan, this is exactly where a person of skill
9 would look to understand how burst mode works and how Risky is
10 describing this burst mode operational mode.

11 JUDGE BALTAZIS: Counsel, before we move on then, just if
12 we do kind of distinguish, does Risky at all distinguish burst mode from
13 polling mode? I'm looking again at paragraph 49. At the bottom, it says
14 operation burst mode may reduce the power consumed by the bolus by
15 reducing the number of transmissions sent from the transmitter. So if it's an
16 alternative to polling mode, isn't that an indication that it's at predetermined
17 time periods?

18 MS. MAHONEY: No, Your Honor. And I think the confusion
19 there might be the difference between polling and transmission. So here, in
20 paragraph 48, Risky explains polling as essentially the communication
21 between the sensor and the transmitter. What we're looking at for
22 predetermined intervals is the intervals in which the transmitter is
23 communicating out into the exterior, out to the receiver that's outside the
24 body of the animal. So the intervals that are -- that the transmitter is looking
25 to the sensor are kind of in effect not -- they're not the same as the

1 transmission intervals. It's a different type of interval.

2 So again, with paragraph 48, what paragraph 48 is telling us about
3 these transmission intervals or transmission frequency is that it's specified
4 based on the presence of certain external conditions, such as the health status
5 or location of the animal. And so, for example, one of the examples Risky
6 walks through in paragraph 48 is about how the transmission frequency may
7 increase when the animal enters the hospital pen and then decrease after the
8 animal leaves the hospital pen.

9 And so because this change in conditions can change -- can trigger
10 a change in the transmission frequency, it's not possible to know at any
11 given time when these transmission bursts might be occurring. These
12 external inputs are going to be varying from day to day. They're going to be
13 varying from animal to animal. They're going to be unpredictable. It's not
14 going to be set and known in advance.

15 So moving to Slide 31 and Risky's online/offline mode, I just
16 want to take a moment and clarify exactly what this operational mode is.
17 Now, Petitioners refer to this as just online mode, but it's important to
18 understand that Risky describes online/offline mode as a singular
19 operational mode. And in that effect, it's more of a change in on-line and
20 offline status based on the proximity of the animal to the receiver or to the
21 base station. And once again, Risky specifies that it's the machine readable
22 instructions 252 that specify the transmission frequency when the bolus is
23 either in online mode or offline mode. So again, that brings us right back to
24 paragraph 48 to understand the full disclosure of how online/offline mode
25 works in Risky.

1 So now on Slide 32, Risky's use of the word transmission
2 frequency also brings us back to paragraph 48 and why there can be no
3 predetermined intervals in either online or offline mode. So Risky tells us
4 that an online bolus transmits at an online transmission frequency, and then
5 an offline bolus transmits at a decreased transmission frequency. But again,
6 transmission frequency is not some sort of known or predefined amount of
7 time. The only time when Risky discusses transmission frequency is in
8 paragraph 48 and in the context of a frequency that can change in response
9 to certain triggering events.

10 Now on Slide 33, Petitioners do present a somewhat new argument
11 that predetermined intervals can be established by online mode only.
12 Because in Petitioner's view, predetermined intervals are not required at all
13 times. Even setting aside what paragraph 48 says about how transmission
14 frequency changes in response to an external stimulus and a triggering event,
15 the claim language here and the specification of the '644 Patent do not
16 provide any support that a predetermined interval can exist in an isolated
17 period of time, no matter how small.

18 And so because the online/offline mode can oscillate unpredictably
19 between, you know, online and offline based on the proximity and location
20 of the cow, of the animal, the transmission frequency is necessarily going to
21 change or decrease each time that bolus enters offline status, and therefore
22 the overall transmissions are not going to be set and known in advance.

23 JUDGE BALTAZIS: One quick question. So just to confirm,
24 when you're saying predetermined interval that has to be a set interval, why
25 can't, like, the change of frequency be predetermined, right? Let's say, a

1 lower frequency that's brought in by machine readable instructions, isn't that
2 a predetermined frequency if it's just -- even though it's -- can move around?

3 MS. MAHONEY: Not necessarily, Your Honor, primarily
4 because -- well, to start, Petitioners do not make the argument that just
5 because a lowered or decreased transmission frequency was set in advance
6 that's necessarily predetermined. But also, that's just not what the '644
7 Patent contemplates, particularly in the context of its power-saving
8 motivations. Here, the '644 Patent can save power -- save power consumed,
9 and therefore extend the life of the bolus by not having this sort of if-then
10 conditional logic. By just setting a predetermined interval, a transmission
11 interval, and leaving it, forgetting it for the lifetime of the bolus, the bolus is
12 able to extend its operational lifespan.

13 JUDGE FENICK: Ms. Mahoney, sorry. One more thing about
14 burst mode, can you -- I assume you made this point, and I just didn't get it.
15 But now I understand the argument that the polling frequency is set
16 elsewhere. But it seems that at the second half of paragraph 49 of Risky
17 that it talks about polling happening whenever the polling happens, but the
18 bolus then transmits according to, like, an internal transmission interval.
19 And why is that not a predetermined interval?

20 MS. MAHONEY: Well, Judge Fenick, this again goes back to
21 paragraph 48. So the one operational mode that we didn't discuss today is
22 actually instantaneous mode, which is where transmission happens at the
23 exact time that the sensor polling happens. Petitioners do not allege that
24 there is any predetermined intervals in that operational mode.

25 But in burst mode, the sensor is essentially polling at whatever

1 interval it would like to, but the transmissions are happening according to a
2 transmission interval that is specified by these machine readable instructions
3 252. And therefore, that's why we know to look up to paragraph 48 to
4 understand exactly how this mode is operating.

5 JUDGE BALTATZIS: One last follow-up then on paragraph 48.
6 So both paragraphs 48 and 49 start with "in one embodiment." Is it fair to
7 go back and bring in the embodiment of 48 into 49 for these machine
8 readable instructions? Why aren't they more generic for each embodiment,
9 that each embodiment has its own, you know -- it just cites back to the
10 global machine readable instructions and then it's the instructions to perform
11 that embodiment.

12 MS. MAHONEY: In this situation, Your Honor, it is fair to look
13 at the embodiment that is described in paragraph 48. Because in this sense,
14 in the way that Risky describes these processor operational modes, they are
15 really just further elaboration of a bolus that implements machine readable
16 instructions 252. And we know this to be the case because when we look at
17 the words transmission interval and transmission frequency, one of which is
18 used with burst mode and the other which is used with online/offline mode,
19 the only explanation that Risky provides for those terms is in paragraph 48.

20 So POSA, who's reading the entire specification of the Risky
21 reference in order to understand how these modes work, they would need to
22 rely on paragraph 48. There's no information in paragraph 49 or in the
23 respective online/offline mode paragraphs to understand how a transmission
24 interval or a transmission frequency would be set.

25 So touching briefly on the next argument that Risky does not

1 disclose the encoding limitations, so on Slide 36, this has come up quite a
2 few times already today, but Petitioners do make an argument, an inherency-
3 based anticipation argument, in their petition. They are explicitly claiming
4 that Risky does not explicitly disclose encoding, and therefore -- but they
5 know based off other discussions that Risky necessarily requires that the
6 analog signals are encoded into digital form.

7 And on Slide 37, as Mr. Moffett was also previously addressing,
8 we know that many of the same reasons as Harvey that Risky does not
9 necessarily require these digital-encoded signals. And actually, Risky
10 provides even less disclosure in this context than Harvey does. So both Dr.
11 Kan and Petitioner's expert will agree that the sensors disclosed in Risky
12 produce analog signals. And they will also note that the silence within
13 Risky with regard to a required storage method or transmission protocol of
14 the animal data means that Risky does not necessarily require a digital
15 storage and digital transmission.

16 So on Slide 38, again, because this digital-encoded data does not
17 inevitably result from Risky's disclosure, Petitioners now are seemingly
18 recasting this inherency argument as a disclosure that a POSA would have
19 understood. And in fact, the Petitioners are now claiming that Risky has
20 clearly discussed digital data in many instances. But the problem with that
21 is the petition does not identify any of these clear discussions.

22 So one of the examples that Petitioners are now relying on is this
23 concept of pre-processing or compressing data. And there's two problems
24 with this in terms of meeting the claim requirements. The first is that
25 Petitioners do not address or explain how pre-processing is encoding. And

1 at best, the Risky reference only contemplates pre-processing or
2 compressing before transmission. It's entirely silent as to what is happening
3 with storage. So as Mr. Moffett was explaining in the context of the Harvey
4 reference, Risky's silence with respect to where the animal sensor data is
5 stored means that it's not necessarily encoded.

6 Now on Slide 39, Petitioners also do bring up a new definition of
7 encoding that should be rejected. And essentially, they're now changing the
8 position from encoding being analog to digital and now claiming that
9 encoding can be analog to analog. This brings up the same issues that I was
10 just referring to, is that there's no explanation how an analog-to-analog
11 conversion is encoding. And actually, this position tends to undermine their
12 prior argument that digital-encoded signals are necessarily required by
13 Risky.

14 So moving to Slide 40 and 41, touching briefly on Petitioner's
15 obviousness grounds, and starting with the Harvey and Risky obviousness
16 ground. So Ground 3 necessarily fails at the outset because the Petitioners
17 do not engage in a proper obviousness analysis in their petition. The petition
18 includes this conclusory assertion that to the extent one reference fails to
19 include an element, that the other reference contains it. But this fails to
20 establish any of the requirements for putting together a proper obviousness
21 combination.

22 Specifically, with the alleged motivation to combine here, the
23 Petitioner's purported evidence actually supports that there is no motivation
24 to combine Harvey and Risky. They simply point to the overall similarities
25 between the two references, claiming that it's the same type of apparatus

1 used for the same purpose. But they ultimately fail to explain or address or
2 even recognize that a person of skill would not look to another example of
3 the same apparatus or the same solution because a POSA would recognize
4 that that second reference adds nothing new.

5 And on Slide 43, Petitioner's reply does introduce a somewhat new
6 obviousness combination, which again should be rejected for its lack of
7 foundation in the petition. But even so, at best, it simply identifies that
8 Harvey is the primary reference. This again fails to identify any of the other
9 requirements for putting together an obviousness combination. And once
10 again, is asking the Board to be the ones to fashion together their
11 obviousness combination for them.

12 So touching quickly on Ground 4, which is Harvey and Rettedal
13 -- we're now on Slide 45 -- Claim 7 is specifically addressing adjustments
14 that need to happen to Claim 5 in order to compensate for the bolus needing
15 to transmit from inside the animal to outside the animal. Again, at the
16 outset, this ground is going to fail, right? Because it's going to inherit all of
17 the deficiencies of Harvey from Ground 1. And Petitioners do not rely on
18 any of Rettedal to address these deficiencies.

19 And actually, in the institution decision, it was suggested that
20 Rettedal could be used to fill in some of the gaps of Harvey's bolus
21 disclosures. It's important to note, though, that the Petitioners do not make
22 this argument. There might have been a brief reference to that this morning.
23 But that argument is not in the petition, it's not in the reply, and there's no
24 other allegation that combining embodiments from within Harvey would
25 have been obvious.

1 Yeah. I do see that the time has expired.

2 JUDGE BALTATZIS: It's okay. If I could hold you for another
3 -- just a minute on this. I think you're probably going to go into the
4 discussion of this, the matching elements. If you could, is this a claim
5 construction issue that we need to sort out in the final written decision?

6 MS. MAHONEY: No, Your Honor. And actually, if I could just
7 point you to Slide 48, this is going to be because Claim 7 uses the words
8 matching elements and they used the word adjusting. So according to Dr.
9 Kan, a POSA reading this claim, in view of the full specification, would
10 understand that the only times the '644 Patent discusses matching elements
11 and discusses adjusting is in the context of adjusting resonant frequency.

12 JUDGE BALTATZIS: And I guess in that case, though, if we
13 have -- let's say the plain language of the claims, it's the -- you know,
14 adjusting the signal and the spec gives an example of doing it in a different
15 way that conflict, how do we resolve that conflict? Do we take the plain
16 meaning? Do we need to? Are we reading in the spec into it? You know,
17 that's the issue that we're going to have moving forward.

18 MS. MAHONEY: Of course, Your Honor. And at the end of the
19 day, the claims do need to be read from the perspective of a person of skill in
20 the art. And we have testimony from Dr. Kan who is an expert and a person
21 of skill in this field. And the way that he has read Claim 7 is to require that
22 these matching elements are adjusting the resonant frequency. And there's
23 full support in both Columns 5 and 6 of the '644 Patent, explaining to a
24 POSA who would be reading this how exactly this would be happening and
25 the reasons and benefits of why this would be incorporated.

1 Unless Your Honors have any further questions on that ground, I
2 can briefly touch upon the final ground, which is going to be Harvey and
3 Kunda. I will just skip to Slide 53. Again, Petitioners are only relying on
4 Kunda to supply the non-antenna limitations. And I just want to address Mr.
5 Buroker's answer to Judge Fenick's question earlier about why a POSA
6 would really be looking to a mobile phone antenna for use in this internal
7 bolus.

8 Mr. Buroker focused on the fact that both of these references are
9 wireless communication devices. The problem with that, though, is that it's
10 well established that wireless communication works differently in free air,
11 like a mobile phone would, versus from what's inside the reticular rumen of
12 an animal where it needs to transmit through stomach, through mass,
13 through fat, through skin. Both of the experts agree that there are different
14 design considerations for these two types of antenna. And therefore, a
15 person of skill would not look to a mobile phone antenna and expect to
16 incorporate that information into a bolus with any expectation of success.

17 JUDGE BALTATZIS: Thank you.

18 MS. MAHONEY: If there are no further questions, thank you.

19 JUDGE BALTATZIS: Thank you. All right. Since we kept you
20 over, we'll add -- give you four minutes for rebuttal. And Petitioner, we'll
21 add that to your time as well, if you need it.

22 MR. BUROKER: All right. So there's a lot to cover, but I don't
23 think I'll need all the time. Famous last words. So I'm going to start with
24 Slide 16, and this is the Harvey anticipation argument in the discussion that
25 was had about whether there's a clear connection between the transponder

1 5000 and the IAT device 1110.

2 And again, for anticipation even, we're not arguing obvious, we're
3 arguing anticipation for sure. But a reference is good for all that it teaches.
4 You can't just take -- say, because they're in different passages in the
5 reference, that you could throw them away. The Net MoneyIN line of cases
6 is talking about combining different embodiments. Taking this thing -- the
7 patent specification has, like, five or six different embodiments, you can't
8 cherry pick one element from the first embodiment, another element from
9 the third, and a final element from the sixth embodiment. You've got to
10 have -- there's got to be some connection.

11 Here, the language in Harvey provides that connection, and that is
12 what we were arguing. Because it says that the transponder 5000 may be a
13 constituent of an intelligent active tag 1110. So that teaches you in each
14 embodiment of IAT 1110, you can envision this having a transponder.
15 That's what a person of ordinary skill in the art would understand paragraph
16 131 to be saying.

17 And then when you go up to the earlier passage where it says IAT
18 1110 may be a digestive tract bolus device, of course in that embodiment 2 it
19 would have the transponder 5000 embedded within it. That's the connection
20 between the discussions here that shows that in each embodiment of IAT
21 1110, including the digestive tract bolus embodiment, you can have
22 transponder 5000 be a constituent part of that tag. So that's the point. That
23 is anticipation, and that's the linking that makes this different than the Net
24 MoneyIN case or the other cases that were cited by the other side.

25 There was a discussion about whether or not Harvey discloses the

1 idea of transmitting at certain periods of time. And in that entire discussion
2 -- I think they pulled up their Slide 14, for example -- they are arguing that
3 those transmissions only occur in this collision avoidance protocol and that
4 there would be a ping message that would be sent first. First of all, I didn't
5 see the word ping in any of the of the actual disclosures from Harvey. What
6 Harvey discloses actually is that transponder -- this is Slide 23 -- transponder
7 5000 may initiate communication of an outbound IAT message.

8 It doesn't say, and that outbound, IAT message would only include
9 the subject's ID or that would only include part of what I normally would
10 send as an IAT message. It says it transmits an outbound IAT message on a
11 preselected tag transmission interval. Preselected, i.e., predetermined
12 interval. And then again, Slide 24, the earlier discussion in Harvey was that
13 this IAT message may include subject data, subject dynamic information.
14 There's nowhere in Harvey that says in this collision avoidance situation you
15 would only choose to send the subject ID. It's just not there. And so they're
16 trying to narrowly read Harvey's disclosure in a way that a person of skill in
17 the art would not agree.

18 EEPROM, I think we've had a lot of discussion for both Harvey
19 and Risky about whether there's inherency or disclosure. I'll try one more
20 time just to make this clear. EEPROM, there's no dispute that both Harvey
21 and Risky disclosed an EEPROM. What we were arguing in the petition is
22 that EEPROMs are digital devices. Any person of skill in the art would read
23 that to understand that includes a digital device.

24 If you have a digital version, you necessarily have to encode
25 analog data to put it into that digital device. That is direct disclosure. It's

1 not arguing inherency. Even if there are analog versions of the EEPROM,
2 you at least have two versions of EEPROM. You have a digital version and
3 an analog version. Harvey and Risky disclose, then argue with both
4 versions. But the digital version requires encoding. That's what's disclosed
5 in both of the references. And that is direct disclosure, that's not inherency.
6 We're not arguing inherency.

7 JUDGE BALTATZIS: To confirm to -- Patent Owner argued that
8 -- you know, the difference between encoding and storing. So what you're
9 saying is that you're encoding it to store it on the EEPROM being memory.

10 MR. BUROKER: Correct. If it's a digital storage, you can't store
11 analog information unless it has been converted. And that conversion is
12 encoded, exactly.

13 So Risky, there was a lot of discussion about the different modes
14 of operation. I think the panel rightly focused on paragraph 49. I've got
15 part of it highlighted, but the part that's not highlighted is pretty important
16 here. This is on Slide 33, I'm sorry if I didn't say that. It says this
17 operational mode may be referred to as burst mode, since the sensor readings
18 are transmitted at periodic bursts rather than when sensing -- sensor polling
19 takes place.

20 And right above that, it says that the instructions may specify a
21 transmission interval -- I think it's no question that say interval -- where
22 processor 240 may transmit an animal characteristics message comprising all
23 or some of the measurements stored in the memory at each transmission
24 interval. So each transmission interval, you send the animal characteristics.
25 We call that a burst mode because you send it periodically rather than when

1 the sensing takes place.

2 That's a clear disclosure of exactly what Claim 5 requires, and they
3 call it burst mode. And they even say that it has the same benefit that the
4 patent's trying to achieve here. Because in burst mode, you reduce the
5 power consumed by the bolus by reducing the number of transmissions sent.
6 This is the exact same disclosure that the patent, the '644 Patent, was
7 attempting to achieve. And that's why this anticipates this claim.

8 The last point I want to make is with regard to Claim 7, and the last
9 discussion Your Honor had. They are arguing that Claim 7 should be
10 rewritten. They are arguing that Claim 7 requires -- I'm trying to get to it.
11 This is Slide 50, they are arguing that the claimed matching elements
12 therefore adjust the antenna's center frequency to match the radio signal
13 generator's output frequency. This is from their Patent Owner's response.

14 This is a rewriting of what the claim actually says. The claim
15 doesn't say anything about an antenna or the antenna's center frequency.
16 Actually, if go back here, this is Slide 49, the claim just requires matching
17 elements that adjust the frequency of said radio signal that was output. It
18 doesn't talk about changing the center frequency of the generating of this
19 radio signal. It's adjusting the frequency of the radio signal -- said radio
20 signal, which is the one that's already been generated. That's what the claim
21 actually requires.

22 This plain meaning is clearly met in the combination of Rettedal
23 and Harvey. And as a result, they're trying to change it, and therefore they
24 are asking for it. If nothing, it's not an explicit claim construction. They're
25 arguing for an implicit one, which should be rejected because that's just an

1 example from the patent specification. It's not -- they're not reading -- they
2 shouldn't be permitted to read that example from the patent specification
3 about changing the center frequency of the antenna into these claims.

4 So unless you have any other questions, I'm happy to cede my
5 remaining rebuttal time. Thank you.

6 JUDGE BALTATZIS: Thank you.

7 MR. MOFFETT: Maybe I'll try it without slides. We'll see.

8 Thank you, Your Honors. I will try to go in the same order as Mr. Buroker.
9 And he started with Harvey's disclosure of a bolus as configured in the
10 claim. And he redirected the panel back to the statement that this particular
11 transponder embodiment, quote, "may be a constituent of an intelligent
12 active tag."

13 But that didn't focus on the following statements, that the suitable
14 tags in that same paragraph, every example of them that was identified, were
15 ear tags. It didn't say all IAT 1110 embodiments. It doesn't say that. It says
16 IAT 1110 Figure 1, which is in ear tag. It said Figure 2 and Figure 3, which
17 are ear tags. And those operate differently.

18 Mr. Buroker and Petitioner's position appears to be that essentially
19 any disclosure suggestion in the reference is enough to tell us, hey, this
20 could all work together, we can combine it. That's not the law. That's not
21 anticipation. I direct you to the BlephEx case cited in our papers. I think it's
22 B-L-E-P-H-E-X, which says -- it states that generic statements about
23 potential embodiments combinations, generic statements are not enough to
24 disclose the specific embodiment for anticipation.

25 So this cursory reference to a bolus that resides in the rumen of the

1 animal cannot be extrapolated and just kind of swapped out with a
2 completely different type of apparatus that's on the outside of the animal that
3 has different battery requirements, different antenna requirements, and
4 different sensor types that'll work. It's not disclosed in there at cursory
5 reference, a generic statement about "could be" is not sufficient.

6 Had they elected to go with obviousness, maybe we'd have a
7 different discussion. Had their obviousness ground actively said what may
8 be missing and provided any motivations, we might be having a different
9 discussion. They elected -- Petitioners elected anticipation, and they have
10 not met it.

11 Regarding EEPROMS, I think Mr. Buroker and I just have a
12 fundamental disagreement here. His statement is that EEPROMs are digital
13 devices. Not so, some are. As he acknowledges, there are edge cases where
14 they're not. What Harvey never tells us is which one is it, which one's
15 disclosed? It's silent. And where anticipation -- my understanding, right,
16 under Mr. Buroker's analysis, all Harvey would have to do is say include a
17 memory.

18 Well, for him, for Mr. Buroker, it's just memory can be digital. Is
19 that sufficient? I'd say no, that is not sufficient where memory can
20 absolutely be analog. It's not enough to meet claims in the high bar for
21 anticipation, which is supposed to be the invention was already disclosed.

22 Moving to Risky, with respect to burst mode, Mr. Buroker wanted
23 to focus you on something that wasn't highlighted, and that was bursts -- the
24 reference to periodic bursts. What's a period? What's periodic in Risky?
25 The only reference in Risky to a frequency of transmission, to a period of

1 transmission, to an interval of transmission, the only reference to what that
2 means is paragraph 48.

3 And paragraph 48 uses the term frequency, which may, out of
4 context, sound like a period of time in this context. But it teaches us that
5 that's not what Risky means by frequency here. Risky means a triggering
6 event happens, that the frequency -- the intervals will change.

7 Regarding EEPROM and Risky, I think it's important to note that
8 the EEPROM and Risky was only disclosed for storing bolus ID, not sensor
9 data. Again, they're using -- we're trying to rely on inherency. The encoded
10 physiological data must be what's stored. So even if you were to disagree as
11 to the EEPROM analog versus digital, they still don't show anticipation as
12 the figure has claimed -- and I do see, I'm over -- in the dependent claims
13 because they do rise and fall with Harvey, which we believe is not
14 anticipated.

15 Unless there are any questions, we (INDISCERNIBLE).

16 JUDGE BALTAZIS: All right. No questions. Thank you very
17 much. Okay. This case is now submitted to the panel for determination and
18 preparation of the final written decision. We are adjourned. Thank you very
19 much.

20 (Whereupon, the above-entitled matter went off the record at 10:33
21 a.m.)

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