

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SZ DJI TECHNOLOGY CO., LTD.,  
Petitioner,

v.

AUTEL ROBOTICS USA LLC  
Patent Owner.

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IPR2019-00846  
Patent 9,260,184

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Record of Oral Hearing  
Held: August 13, 2020

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Before ERICA A. FRANKLIN, JENNIFER MEYER CHAGNON and  
AVELYN M. ROSS, *Administrative Patent Judges*.

IPR2019-00846

Patent 9,260,184

APPEARANCES:

ON BEHALF OF THE PETITIONER:

LORI A. GORDON, ESQUIRE  
STEVEN W. PETERS, ESQUIRE  
King & Spalding, LLP  
1700 Pennsylvania Avenue, N.W.  
Suite 200  
Washington, D.C. 20006

ON BEHALF OF THE PATENT OWNER:

JOHN L. ABRAMIC, ESQUIRE  
Steptoe & Johnson, LLP  
227 West Monroe Street  
Unit 4700  
Chicago, Illinois 60606

The above-entitled matter came on for hearing 1:31 p.m., EDT on  
Thursday, August 13, 2020, by video, before Walter Murphy, Notary Public.

PROCEEDINGS

JUDGE CHAGNON: Good afternoon everyone. I am Judge Chagnon. Judges Franklin and Ross are also participating remotely in today's hearing. This is the final hearing in IPR2019-00846 related to U.S. Patent No. 9,260,184 between Petitioner, SZ DJI Technology and Patent Owner, Autel Robotics.

Counsel, could you please go ahead and introduce yourselves for the record? We'll start with Petitioner.

MR. PETERS: Yes, this is Steven Peters with King & Spalding on behalf of Petitioner. Also with me today is lead counsel, Lori Gordon.

JUDGE CHAGNON: Great. Thank you so much. And Patent Owner?

MR. ABRAMIC: This is John Abramic with Steptoe & Johnson on behalf of Patent Owner, and I would like to apologize. I came into the office today to get a better environment, but I think we must have not paid our air conditioning bill or something, so I took my jacket off. I hope that's okay. I don't think you want to see me sweating while we're talking.

JUDGE CHAGNON: No, that is fine. I hope you stay cool in there.

MR. ABRAMIC: Thank you.

JUDGE CHAGNON: Is there anybody else on the line for Patent Owner today?

MR. ABRAMIC: No, just me.

JUDGE CHAGNON: Okay. Great. I just want to, again, thank everybody for your flexibility with joining us remotely today for the hearing and I just want to go over a few reminders about the hearing in general and

1 the remote hearing specifically before we get started.

2 So today our primary concern is that, you know, the parties' right to  
3 be heard. So if at any time during the proceeding you have technical  
4 difficulties that undermine your ability to adequately represent your clients,  
5 please just let us know immediately and we will make adjustments to fix  
6 everything. Also, please be sure to keep your telephone line muted when  
7 you're not speaking so that we can avoid any background noise in the  
8 hearing.

9 Please also go ahead and identify who is speaking for the benefit of  
10 the court reporter when you speak. Keep in mind also that there may be a bit  
11 of an audio lag on the line, so if you try to observe a pause prior to speaking,  
12 that may help us to avoid speaking over each other on the call.

13 Just so everybody is aware, we do have members of the public  
14 listening in today, so I don't believe there's any confidential information in  
15 this proceeding, but if there is, please just let us know right away so we can  
16 make sure to take care of that properly.

17 As you all know, in our order of July 20th each party was granted 60  
18 minutes of total time to present arguments today. I do understand that Mr.  
19 Peters is presenting on behalf of Petitioner pursuant to PTAB's Legal  
20 Experience and Advancement Program, so Petitioner has been granted an  
21 additional 15 minutes of argument time to accommodate for that for a total  
22 of 75 minutes for Petitioner today.

23 At issue in this proceeding today is Patent Owner's non-contingent  
24 revised motion to amend. Petitioner will argue first and may present  
25 arguments regarding the unpatentability of the proposed substitute claims.

1 Petitioner may reserve up to 30 minutes for rebuttal. Patent Owner will then  
2 have the opportunity to respond to Petitioner's arguments. Patent Owner  
3 may also reserve up to 30 minutes for their sur-rebuttal. And then Petitioner  
4 may use any reserved time for their rebuttal in order to respond to Patent  
5 Owner's arguments and Patent Owner may use any time it has reserved for  
6 sur-rebuttal to respond to Petitioner's rebuttal.

7 And we do have copies of your demonstratives available in front of  
8 us. So during your presentations, please just identify each demonstrative  
9 that you're referring to so that we can follow along. This will also help the  
10 court reporter in the accuracy of the transcript.

11 Finally, please refrain from interrupting the opposing party during  
12 their presentation for any objections. If you do have any objections, you can  
13 address them during your own time for presentation.

14 So Mr. Peters, I'll ask did you want to reserve -- how much time did  
15 you want to reserve for rebuttal today?

16 MR. PETERS: The Petitioner would like to reserve 30 minutes.

17 JUDGE CHAGNON: Okay. And I'll be keeping time here for you.  
18 Did you want me to give you a five-minute warning when you're coming up  
19 towards the end of your presentation time? I don't want to interrupt you, but  
20 I just want to do what is most helpful for you today.

21 MR. PETERS: Yes. I believe Ms. Gordon will be speaking at that  
22 time, but a five-minute warning would be great. Thank you.

23 JUDGE CHAGNON: Okay. So 30 minutes for rebuttal. So I'll set  
24 the time here for 45 minutes for your opening presentation and then with  
25 that, you can go ahead and get started whenever you are ready.

1 MR. PETERS: All right. Thank you, Your Honor. Again, Steve  
2 Peters on behalf of Petitioner. If we could start with Slide 3 of our  
3 demonstratives, the petition in this case was filed against Claims 3 and 4 of  
4 the '184 Patent based on the combination of a reference called Sasaki and  
5 another reference called Sokn.

6 Claims 3 and 4 are dependent claims. They depend from -- ultimately  
7 from independent Claim 1. Well, Claim 1 has been found invalid as  
8 anticipated in a separate proceeding against the '184 Patent and that  
9 occurred shortly after Patent Owner filed its revised motion to amend. In  
10 this proceeding, Patent Owner has abandoned Claims 3 and 4 filing a non-  
11 contingent motion to amend, substituting Claims 12 and 13 which also  
12 depend from Claim 1.

13 Turning to Slide 4, you see the limitations of independent Claim 1  
14 which again is invalid, but Claim 1 is directed to a rotary wing aircraft and  
15 includes a number of components that the '184 Patent admits were known  
16 and conventional at the time. These include a body, a plurality of arms, a  
17 rotor assembly attached to each arm, a driveshaft, a rotor blade and the  
18 driveshaft, at least one of them rotates clockwise and one of them rotates  
19 counter-clockwise. These are all conventional and there's no dispute about  
20 that.

21 Now, most of the words in the claim relate to the lock mechanism  
22 that's used to attach the rotor blade to the driveshaft with engagement, right.  
23 So the limitation we have says the clockwise rotor blade is releasably  
24 attached to the first driveshaft by engagement in the clockwise lock  
25 mechanism.

1           The language we have in bold on this slide is what's been referred to  
2 as the engagement limitation and it states that the clockwise rotor blade is  
3 engageable only with the clockwise lock mechanism and cannot be engaged  
4 in the counter-clockwise mechanism and vice versa.

5           The last limitation specifies that the lock mechanism has at least two  
6 portions, the shaft lock portion and the blade lock portion and the shaft lock  
7 portion has notches that engage with lugs on the blade lock portion. And we  
8 can note from these limitations that Claim 1 does not require any sort of  
9 rotation in order to install the blade onto the driveshaft.

10          So if we turn to Slide 5 of our demonstratives, we can see at the top of  
11 Slide 5 we have original Claim 3 reproduced here, and what Claim 3 added  
12 to Claim 1 was the requirement for rotation in order to releasably attach the  
13 blade to the driveshaft specifically for the clockwise locking mechanism.  
14 And what it states is that the clockwise locking mechanism -- the blade lock  
15 portion of the clockwise lock mechanism is rotated counter-clockwise, so  
16 it's opposite of the direction of the rotation of the driveshaft. Claim 4 is  
17 basically the same thing, but for the counter-clockwise lock mechanism.

18          Now, Patent Owner filed a motion to amend the non-contingent  
19 motion to amend with a substitute Claim 12 that's shown in the middle of  
20 this slide. We're going to refer to this as the first substitute Claim 12. And  
21 substantively from the 103 prior art perspective, the only change is really the  
22 requirement that there's partial rotation instead of just that the blade lock  
23 portion is rotated which could be partial or full rotation.

24          The other amendments in Claim 12 as Patent Owner talked about in  
25 this motion are really meant to address an indefiniteness issue that was

1 found in the U.S. International Trade Commission. Now, the Board issue  
2 preliminary guidance at Patent Owner's request and found that Claim 12 had  
3 a reasonable likelihood of being invalid based on the combination of Sasaki  
4 and Sokn and other references that Patent Owner brought up in its motion --  
5 in opposition -- sorry -- Petitioner brought up in the opposition to the  
6 motion.

7 So Patent Owner filed a revised motion to amend, but didn't really  
8 address any of the Board's concerns about the patentability of the first  
9 substitute Claim 12. And, in fact, Patent Owner's expert stated that in his  
10 view the scope of the claims is really identical. Now, the additions that they  
11 made appeared to address 112 arguments that Petitioner brought up in  
12 opposition to the motion.

13 So to summarize everything I just said, the -- really the difference  
14 between Claim 12 as it stands right now and Claim 3 of the original '184  
15 Patent substantively from a 103 perspective is that it requires partial rotation  
16 instead of the requirement that it is rotated. Now that being said, we're not  
17 really going to hear anything about partial rotation and there has been very  
18 little briefing about partial rotation, at least very little dispute about partial  
19 rotation and that's because it's in the prior art. It's all over the place in the  
20 prior art.

21 So if we look at Slide 10, here we have the lock mechanism from  
22 Sokn which engages with a 90-degree rotation. If we look at Slide 11, we  
23 have the Philistine reference which engages the lugs 150 with the recesses  
24 119 with approximately one-quarter turn and you can see the arrow and this  
25 figures shows it turns counter-clockwise.



1           On the next slide, Slide 12, the EP067 reference mounts a blade to a  
2           hub, a propeller blade to a hub, engaging projections with claws using a  
3           fraction of a full rotation. And on Slide 13 we have an illustration of the  
4           Obrist reference which again is mounting a propeller to a hub using 90-  
5           degree rotation.

6           So there's -- the amendments actually made in the motion to amend  
7           aren't really what any of the arguments today are about. Now, what Patent  
8           Owner -- or sorry, what Petitioner has argued in our opposition to these  
9           motions is that the claims are invalid based on the Sasaki based reference in  
10          combination with four separate references; Sokn reference, Philistine, Obrist  
11          and EP067 which I just showed -- gave everyone a preview of.

12          Now, we can look on Slide 8 for the high-level overview of the  
13          disputed issues in this case. And now Patent Owner's arguments, they have  
14          sort of a theme in that they tend to attack the references individually as we'll  
15          see. They ignore the actual combinations that we've been proposing in our  
16          opposition and in the petition. As one example, Patent Owner argues that  
17          Sasaki alone doesn't disclose the engagement limitation. And another  
18          example Patent Owner argues is that the partial rotation references alone  
19          don't disclose both clockwise and counter-clockwise lock mechanisms.

20          Patent Owner also argues against the motivation to combine arguing  
21          that, again, Sasaki alone doesn't explicitly motivate motivation to combine -  
22          - sorry, motivate the combination and that Sasaki teaches towards non-  
23          directional mechanisms. Patent Owner argues that Sokn, which is one of the  
24          prior art references, when combining with Sasaki doesn't solve an  
25          overtightening issue and finally, Patent Owner is going to argue that its

1 claims filled a long-felt unmet need in the UAV industry. So we will  
2 address each of these disputes in turn and show that these -- Patent Owner's  
3 arguments don't have any merit.

4 So if we turn to Slide 15, on this slide we see on the top left a  
5 reproduction of Sasaki's Figure 7. Now, this figure is prior art in Sasaki. It's  
6 well-known even in the early '90s and it included a body, a plurality of  
7 arms, the rotor assembly, all of these limitations of Claim 1 that were  
8 conventional and well-known and there's no dispute about any of those  
9 limitations. It discloses that the drive shafts, two of them rotate clockwise  
10 and two of them rotate counter clockwise.

11 In Figure 8, Sasaki discloses a prior art lock mechanism or a blade  
12 onto a driveshaft. That lock mechanism uses directional threading. Now,  
13 Sasaki discloses that it's necessary to manufacture the propeller which  
14 rotates right with a left screw, right. So if you -- if the driveshaft and the  
15 propeller is going to be rotating clockwise, you need rotation -- in order to  
16 install that blade using this mechanism, you need to have rotation in the  
17 opposite direction.

18 And if we think back to Claim 3 on Slide 5, that's what Claim 3 is  
19 talking about here, "The blade lock portion of the clockwise mechanism is  
20 rotated counter-clockwise." All right. So we have rotation -- installation  
21 with rotation in the opposite direction that the driveshaft is rotating and that  
22 design is really motivated by the forces that happen when you're operating  
23 one of these quad-rotor UAVs.

24 All right. If you have to install it by rotating it in the same direction  
25 that the driveshaft is going to rotate, once it starts operating the blade is

1 going to loosen, the threading is going to loosen as if you are unscrewing it  
2 and eventually it's going to come off and it's not going to work. And so  
3 that's a known problem in the art with a known solution, and the known  
4 solution is to mirror the lock mechanism and that's exactly what Sasaki's  
5 prior art does. It mirrors the threading of a right-hand thread into a left-hand  
6 thread for propellers that rotate in the right direction.

7 Now, once you've mirrored this lock mechanism, you've also created  
8 a mistake-proof design. When you try to mount or when you try to thread  
9 the clockwise threading into the counter-clockwise nut, you're going to  
10 notice, "Oh, it's not working. I need to put it on the right driveshaft."  
11 That's a mistake-proof design and we'll talk more about that in later slides.

12 Now, on Slide 16 Sasaki identifies an issue with this prior art design  
13 and that's that it can be tightened more than necessary such that it's difficult  
14 to remove the propeller when you need to. Sasaki's solution to that issue is  
15 to create a -- this complicated design that's shown in Figure 1 which  
16 involves four different parts. It involves gluing a couple parts together and  
17 it's not mistake-proof and a person of ordinary skill in the art would have  
18 known that.

19 If we look at Slide 21, Patent Owner's expert in deposition stated, "A  
20 person of ordinary skill in the art reading Sasaki would have seen there's  
21 still problems with the design not being mistake-proof." So we have really  
22 the experts admitting or agreeing that there was a motivation to modify  
23 Sasaki in a way that was mistake-proof.

24 And above and on -- still on Slide 21 we have an excerpt from Patent  
25 Owner's expert's declaration where he states in explaining this as a long-felt

1 need, but what he's really doing is admitting there's a motivation from  
2 Sasaki to make -- there's a motivation based on what a person of ordinary  
3 skill in the art would have understood from Sasaki for a simpler, faster and  
4 mistake-proof rotor blade attachment mechanism.

5 Now, when we're considering motivation to combine, we need to look  
6 at what a person of ordinary skill in the art would have understood at the  
7 time of the invention and to that end, we have several undisputed facts about  
8 what a person of ordinary skill in the art would have known, would have  
9 understood at the time.

10 So we can look at Slide 18, and in deposition Patent Owner's expert  
11 stated, "A person of ordinary skill in the art would have appreciated the  
12 ability to remove and attach blades quickly and easily," and that goes back  
13 to sort of the agreed upon motivation to improve Sasaki in a way that's  
14 simple and fast.

15 On Slide 19 we have Patent Owner's expert talking about what a  
16 person of ordinary skill in the art would have understood about misinstalling  
17 the blade and the dangers in doing so. It says at the bottom, "A person of  
18 ordinary skill in the art would understand that there are consequences and  
19 would know what they are," and in our petition we've discussed those  
20 consequences which are really that the UAV wouldn't be able to fly in that  
21 case and potentially could spin out of control depending on how you  
22 misinstalled.

23 On Slide 20 -- now, in our petition we've discussed how the prior art  
24 dates back to the 1800s and that's in the record in this case of keyed  
25 approaches and twist-lock approaches to bringing two members together.

1 And what this slide shows is that you would approach this and directional  
2 approaches were actually applied to this exact problem of mounting a blade  
3 to a driveshaft.

4 On the left we have Microdrone's Figure 25 which has lugs on a blade  
5 that match and engage with notches on this member that's attached to the  
6 driveshaft, that's a keyed approach. In the middle, we have a Micro -- or  
7 sorry, this is the Contra reference where there are components that are keyed  
8 to the pitch of the blade which, again, Contra talks about this is to prevent a  
9 use from inadvertently installing the wrong blade, and we have the  
10 directional approach of Sasaki on the right.

11 So a person of ordinary skill in the art recapping is motivated to make  
12 -- to modify Sasaki to make it simple fast and mistake-proof. A person of  
13 ordinary skill in the art has seen that keyed approaches and directional  
14 approaches can provide mistake-proofing and a person of ordinary skill in  
15 the art knows the importance of maintaining the correct installation when  
16 you're installing the blade.

17 So if we -- we can now turn to Slide 35. So Patent Owner has argued  
18 in, I think, all of its briefs that Sasaki does not disclose the engagement  
19 limitation. Now, this -- on the surface it sounds like a missing limitation  
20 argument, but we -- in all of our combinations we replace the lock  
21 mechanism of Sasaki's prior art with the lock mechanisms of Sokn,  
22 Philistine, Obrist and EP067. Those are the lock mechanisms in the  
23 combination. So we don't rely on Sasaki for the engagement limitation  
24 which requires, you know, a -- which talks about engagement of the blade  
25 with the lock mechanism.

1           And in Patent Owner's reply in this proceeding, they have specified  
2           that what they're talking about is really a motivation to combine argument.  
3           All right. So Petitioner has argued both in our -- in the petition and in our  
4           opposition in this case that a person of ordinary skill in the art would  
5           recognize these combinations, quote, "maintain the mistake-proof nature of  
6           Sasaki's prior art mechanism."

7           Again, there's no dispute that a person of ordinary skill in the art  
8           would be motivated to do the mistake-proofing. There's, I think for at least  
9           three of the references, no dispute that the combination results in a mistake-  
10          proof design. So the end result is mistake-proof and the motivation is for  
11          mistake-proof, but Patent Owner is focusing on the word "maintains" and  
12          trying to argue that Sasaki itself was not mistake-proof.

13          You know, because of the existing motivation and the end result being  
14          mistake-proof, we don't view this argument as really relevant to the  
15          patentability of the claims. But nevertheless, Patent Owner has made it less  
16          relevant even by focusing on the engagement limitation as a proxy for  
17          mistake-proof and we disagree with that entire approach. I mean, we said  
18          mistake-proof. We weren't using it as a proxy for the engagement  
19          limitation.

20          Now, Patent Owner has provided a video of its expert, Dr. Reinholtz,  
21          forcibly and purposefully mounting a blade onto the wrong driveshaft of the  
22          UAV. I think that's Exhibit 2006. Now, that video doesn't prove that  
23          Sasaki is not mistake-proof for many reasons, but one of which, the main  
24          one probably is that Dr. Reinholtz isn't making a mistake in that video.  
25          There is nothing of a mistake. The whole reason he made the video was to

1 force the blade on their own driveshaft.

2 Now nevertheless, mistake-proofing doesn't require preventing a user  
3 from purposefully destroying the blade by intentionally misinstalling it.  
4 Now, Dr. Reinholtz acknowledges that the destruction of the blade could --  
5 is a possible result from what he did and he doesn't show us the resulting  
6 threading of the blade. Instead what he shows us is a picture of a bottle cap  
7 which he said that he misthreaded three times.

8 Now, he acknowledges that whether the threads are going to be  
9 destroyed or not depends heavily on the materials that are used. He doesn't  
10 argue that a bottle cap is going to use the same materials as the UAV, but  
11 nevertheless to the extent Dr. Reinholtz states that he misthreaded the bottle  
12 cap of the bottle, he doesn't state that he actually installed it using counter-  
13 clockwise rotation.

14 Your Honor, and I've been around a lot of bottles and bottle caps in  
15 my life and I've never accidentally installed it using counter-clockwise  
16 rotation, so we don't view that argument as even a dispute that the Board  
17 needs to resolve to find the claims unpatentable in this case, but nevertheless  
18 we do disagree with the merits.

19 I will now pass the baton to my colleague, Ms. Gordon.

20 MS. GORDON: Okay. Thank you. And good afternoon, Your  
21 Honors. This is Lori Gordon arguing on behalf of Petitioner and I'd like to  
22 turn your attention now to Slide 24. And as Mr. -- Steven, Mr. Peters, noted,  
23 Petitioner established in our petition that the combination of Sasaki and  
24 Sokn renders original Claims 3 and 4 obvious and these claims recite that the  
25 blade lock portion is rotated with respect to the shaft lock portion.

1           In other words, the original claim covered both partial and full  
2 rotation and Petitioner presented numerous reasons why a person of skill in  
3 the art wouldn't need such a combination. First, to address the over-  
4 tightening problem that Sasaki references, second that Sokn's connection  
5 mechanism provides increased design flexibility by allowing the use with a  
6 wider range of aircraft. In other words, you can use this coupling  
7 mechanism in larger UAVs which would be of great interest to a UAV  
8 designer. Third, it improves usability because it only requires a 90 degree  
9 turn versus three to four turns. And finally, it improves the mechanical  
10 alignment of the components.

11           Now, Patent Owner did not dispute these arguments that were made in  
12 the petition, but instead proposed amendments that remove the need to  
13 actually rotate the lock, the blade lock, portion and to specify only partial  
14 rotation. And Patent Owner refers to this arrangement throughout its papers  
15 as a novel twist-lock mechanism, but there is nothing novel about Patent  
16 Owner's claimed twist-lock mechanism.

17           And Petitioner's Mr. Peters referenced -- introduced evidence that  
18 twist-lock mechanism with partial rotation existed for at least a century,  
19 longer than a century, and perhaps even longer. And Petitioner presented  
20 four specific prior-art twist-lock references that Mr. Peters introduced to you  
21 and one, the Obrist reference, was filed in the 1940s almost 60 years before  
22 the '184 Patent itself was filed.

23           Now, Patent Owner's counter-arguments belong to two primary  
24 themes that Mr. Peters previewed for you. First, they attack each reference  
25 individually ignoring the actual combinations proposed by the Petitioner.



1 Second, they ignore the totality of the evidence. They ignore the totality of  
2 the motivation to combine evidence, the totality of the teachings of the  
3 reference, they ignore the broad scope of their own proposed amended claim  
4 and they manufacture issues where really none exist and Petitioner rebutted  
5 each one of Patent Owner's arguments in our paper and I'm going to address  
6 a few here today.

7 So turning to Slide 25 and the combination of Sasaki and Sokn. And  
8 the petition explained how Petitioners were proposing to make this  
9 combination. The shaft lock portion of Sasaki, shaft, is modified to  
10 integrate, for example, the engagement portion of Sokn's external ring  
11 which we see at the bottom of the figure on Slide 25 and Sasaki's displayed  
12 lock mechanism is modified to integrate the stop members and threaded  
13 engagement portions that we see at the top of that figure.

14 Now, the resulting combination importantly retains the directionality  
15 taught by Sasaki's prior art, but it does that using segmented threads instead  
16 of continuous threads and the stop members provide and resist further  
17 rotation of the shaft lock portion. So they resist rotation into the blade lock  
18 portion and can -- you can see in Figure 25 that the attachment and  
19 detachment is quick and easy. Quarter-turn to attach and a quarter-turn to  
20 detach.

21 Now, Patent arguments -- Patent Owner's counter-arguments focus on  
22 attacking the motivation to combine Sasaki and Sokn and again, they fall  
23 into two categories. First they attack the motivation to combine based on  
24 Sasaki alone and Mr. Peters explained to you why those arguments were  
25 baseless. But second, Patent Owner carves out only one of Petitioner's

1 motivations to combine avoiding over-tightening and contends that Sokn  
2 does not support this motivation.

3 But notably, Patent Owner completely ignores all of the additional  
4 motivations that Petitioner presented each of which, on its own, is sufficient  
5 to justify the combination and Patent Owner did not rebut any of these other  
6 arguments and for that reason alone, the Patent Owner's argument must fail.

7 But even if we consider Patent Owner's over-tightening argument,  
8 you can see that it lacks merit. Patent Owner and their expert generally  
9 contend that Sokn's coupling mechanism would result in over-tightening  
10 similar to over-tightening a jar and the lid, but not all jars and lids are made  
11 alike. Neither Patent Owner nor its expert specified the specific  
12 configuration that resulted in over-tightening in its jar/lid scenario and  
13 importantly, they didn't equate it to the actual coupling used in Sokn, the  
14 four segmented threads with the four stop mechanisms.

15 Patent Owner also ignores the solution of our expert that over-  
16 tightening depends significantly on the materials used for the component.  
17 Not only do they not address it, they completely ignore it and don't rebut it.  
18 Over-tightening also depends on the materials used not just the geometry or  
19 the motion of interlocking. And Patent Owner further contends that to  
20 prevent over-tightening the coupling mechanism requires radial stops. But if  
21 you look at the claims, the claims don't, themselves, require radial stops to --  
22 in their rotation mechanism.

23 But regardless, the use of radial stops was well-known before the '184  
24 Patent. EP067 that Mr. Peters mentioned includes radial stops and you'll see  
25 that on the top of our Slide 27, but Sokn also discloses the use of radial stops

1 in another embodiment shown in Figure 5. And if you look at that  
2 embodiment of Figure 5, it adds a simple L shape at the end of its threads to  
3 act as a radial stop.

4 Therefore, a person of skill in the art concerned about over-tightening  
5 would have been motivated to add a radial stop, and this is not hindsight like  
6 Patent Owner would like you to believe. This is just another well-known  
7 common aspect of mechanical coupling designs and the well-known twist-  
8 and-lock mechanism that has been around for centuries and centuries.

9 Now, turning to Patent Owner's alternative argument, Patent Owner  
10 argues that if you look at Sokn in a vacuum by itself, there's no disclosure in  
11 the four corners of Sokn regarding a clockwise or a counter-clockwise  
12 mechanism and therefore there's no disclosure of lock mechanisms that  
13 depend on direction of rotation. But as Mr. Peters mentioned, this argument  
14 is simply improper. It attacks the references individually and ignores what  
15 our combination was.

16 Petitioner discussed that it was the combination of Sasaki and Sokn  
17 that disclosed the coupling mechanism and based on the teachings of Sasaki,  
18 the teachings of Sokn and the common knowledge of a person of skill in the  
19 art, a person of skill in the art would have been motivated to mirror Sokn's  
20 design to orient threads for clockwise and counter-clockwise rotation.

21 And Patent Owner doesn't dispute the common knowledge of a  
22 person of skill in the art, but what they do and are doing are asking you to  
23 ignore it. Sasaki teaches us, as Mr. Peters referenced, that the -- teaches  
24 about the impact of rotational forces on connecting mechanisms and teaches  
25 us that was known and it was the impact of these forces that drove Sasaki to

1 select the directionality of its threads and its prior art design. It is this  
2 common knowledge of a POSITA that would have driven a POSITA to  
3 account for the rotational forces of clockwise and counter-clockwise rotor  
4 blades and to use mirror images of the mechanism in Sokn to maintain the  
5 integrity of its connection in a UAV design.

6 Now, turning to Slide 26, Petitioner also presented a combination  
7 based on Sasaki and Philistine as Mr. Peters mentioned and Philistine is a  
8 general coupling mechanism designed to be used with any type of device  
9 that is coupling components together. And as you can see from the Figure, it  
10 is also a quick and easy lock mechanism. A simple turn, quarter-turn, partial  
11 turn to engage and a partial turn to disengage.

12 Now, Patent Owner contends again that if you look at Philistine in a  
13 vacuum without considering anything else in the record, it lacks a device  
14 with both clockwise and counter-clockwise lock mechanisms, but as we've  
15 mentioned again and again, that is improper and Patent Owner is ignoring  
16 the exact combination that we are proposing.

17 But Patent Owner tries to support its position by directing your  
18 attention to a snippet from the ITC litigation related to Claim 1, but these  
19 snippets fail to show the entire context of the dispute, what evidence was in  
20 front of the judge and what evidence was presented and therefore the snippet  
21 should be accorded no weight in this proceeding. It is the evidence in this  
22 proceeding that controls and this evidence shows that Petitioner established  
23 the combination of Sasaki and Philistine would render the amended claims  
24 unpatentable.

25 Turning to Slide 27, and this shows the combination of EP067 and

1 Sasaki. And the actual object of the EP067 patent is to simplify the  
2 mounting and dismounting of propellers onto a rotating shaft and it does just  
3 this using a twist and lock mechanism that uses a partial rotation. Now,  
4 Patent Owner continues its theme of asking you to look at EP067 in isolation  
5 without the context of the entire combination and we've already established  
6 why a person of skill in the art would have introduced mirror images of the  
7 EP067 mechanism into the combination of Sasaki and EP067.

8 But importantly, EP067 also recognizes the impact of rotational forces  
9 on a connection of a propeller to a blade, so EP067 motivates a POSITA in  
10 its design of the connection mechanism to account for rotational forces and  
11 in the context of a UAV, the result would be the mirror image connections  
12 on the clockwise and the counter-clockwise rotor blade.

13 Slide 28 presents the combination of Obrist and Sasaki and the goal  
14 again of Obrist is to simplify the assembly of propellers onto a driveshaft. It  
15 again is a quick and easy mechanism, twist and lock, with partial rotation.  
16 Patent Owner's only argument is if you look at it in isolation it doesn't show  
17 both counter-clockwise and clockwise mechanisms and we've repeatedly  
18 addressed why that approach is improper and established why the  
19 combination would have motivated a POSITA to use mirror image  
20 connections.

21 Now, I'd like to turn next to address Patent Owner's long-felt need  
22 argument and Slide 37. Patent Owner asked the Board to overlook  
23 Petitioner's strong obviousness case based on four separate combinations  
24 and granted a monopoly on a simple well-known twist and lock mechanism  
25 based solely on an alleged long-felt need.

1           Specifically, Patent Owner articulates its long-felt need as a need for a  
2 fast, simple and mistake-proof rotor attachment mechanism and Patent  
3 Owner's argument fails for a number of reasons. First, its long-felt need is  
4 untethered to its proposed amended claim which, as we recall, is simply a  
5 partial rotation versus a full rotation, so the long-felt need has to be related  
6 to rotating a blade, for example, 90 percent versus 100 percent. That is the  
7 degree of difference we're talking about and that's what the long-felt need  
8 should be tethered to.

9           Second, Patent Owner's long-felt need applies equally to Claim 1  
10 which was found unpatentable by the Board in a separate proceeding and it  
11 also applies to original Claims 3 and 4 which Patent Owner did not contest  
12 were known. Third, Patent Owner fails to make the case for a long-felt  
13 need. It's a need and they failed to present any evidence of when the need  
14 first arose, how long the need was felt or any attempt by others to solve the  
15 need or address the need.

16           Patent Owner's support for its position is from testimony of its expert  
17 that points to the existence of a quadcopter in 1999 and the potential  
18 existence of a quadcopter product in 1980s. And from the existence of  
19 products, Patent Owner equates that to a long-felt need, but what we don't  
20 see is any testimony from customers clamoring for partial rotation versus  
21 full rotation. We don't see any papers or articles written about this long-felt  
22 need and how people were having a hard time solving it. We don't see any  
23 of that in the record.

24           Turning to Slide 38. In addition, Patent Owner must show that the  
25 long-felt need that they are alleging has not been satisfied by another before

1 the invention of the applicant and here we know that the long-felt need in  
2 fact was met, the one that was articulated by Patent Owners. Microdrones  
3 which we see here on Slide 38, presents a fast and fully mistake-proof  
4 connection mechanism, but to the extent any long-felt need existed which  
5 we dispute, it was met long before the '184 Patent.

6 Now, I'd like to turn quickly to the non-analogous argument in Slide  
7 31. Patent Owner contended in its motion to amend that Sokn was non-  
8 analogous art. Patent Owner didn't raise this point again in its reply, so we  
9 assume that they're abandoning this argument. But to the -- in the event that  
10 Patent Owner continues to press it, it simply lacks merit. Patent Owner  
11 ignores the actual test for non-analogous art which is if the reference is not  
12 in a field of endeavor. The question is whether it's reasonably pertinent to  
13 the problem with which the inventor was involved.

14 Patent Owner never establishes that Sokn would not have been  
15 reasonably pertinent to someone designing a coupling mechanism from  
16 between two components in a UAV. And we know that a reference -- we  
17 know that, in fact, is reasonably pertinent because the reference is  
18 reasonably pertinent if it is one which because of the matter with which it  
19 deals logically would have commended itself to an inventor's attention in  
20 considering its problem.

21 And Petitioner has presented the In re Paulsen case from the Federal  
22 Circuit that is directly on point. It deals with hinged latch mechanisms for a  
23 portable computer and the Federal Circuit agreed that due to the nature of  
24 that problem one of skill in the art would have considered the mechanical art  
25 for housing hinges, latches and springs and that would have led them to

1 Sokn and Philistine which was a generic coupling mechanism. And in fact,  
2 we see from the face of the '184 Patent itself evidence that the Examiner  
3 considered them to be reasonably pertinent. The Examiner in the '184  
4 Patent searched for references in the joints and connection art and that art  
5 included the Sokn and Philistine patents.

6 And if there's no questions, we'd like to reserve the remainder of our  
7 time for rebuttal.

8 JUDGE CHAGNON: I have no questions. Judge Ross? Judge  
9 Franklin?

10 JUDGE FRANKLIN: I don't have any questions.

11 MS. GORDON: All right. Thank you.

12 JUDGE CHAGNON: Okay. Thank you, so much. All right. Let me  
13 just note the time quickly. That was 40 minutes, so there's 35 minutes  
14 remaining. I guess 30 minutes since that was what I said you could  
15 maintain, so 30 minutes for rebuttal.

16 MS. GORDON: Okay. Thank you, Your Honor.

17 JUDGE CHAGNON: Mr. --

18 MS. GORDON: (Indiscernible).

19 JUDGE CHAGNON: Mr. Abramic, did you -- how much time did  
20 you want to reserve for your rebuttal today?

21 MR. ABRAMIC: Can I reserve 10 minutes?

22 JUDGE CHAGNON: Ten minutes? All right. Did you want me to  
23 give you a heads up when you're coming up on your time or are you going  
24 to be keeping track on your end?



1           MR. ABRAMIC: I would appreciate a five-minute heads up, but I  
2 will try to keep track on my own end as well.

3           JUDGE CHAGNON: All right. That sounds good. I will give you a  
4 five-minute warning if we get there. All right. So whenever you're ready,  
5 you can go ahead with your presentation.

6           MR. ABRAMIC: Okay. Thank you, Your Honors. So before I jump  
7 into the issues that counsel dug into, I'd just like to take a step back and  
8 briefly talk about the invention and the '184 Patent as compared to propeller  
9 connection mechanisms that were in the art at the time of the invention and  
10 UAV connection mechanisms.

11           And so I'm on Slide 3 of Patent Owner's presentation materials and  
12 here we see two of the common UAV blade connection mechanisms that  
13 were known at the time and they're fairly simplistic and include what you  
14 would expect from first generation type technology. The first is a simple  
15 threaded connection and that's the Sasaki reference and the second uses an  
16 elastic component like a rubber band or an O-ring to hold the blade onto the  
17 driveshaft.

18           And there's no dispute here that UAV users like fast blade connection  
19 mechanisms because unlike other types of vehicles with propellers, UAV  
20 blades are constantly removed and reattached. UAVs are typically stored  
21 without the blades attached, so they're reattached out in the field and the  
22 blades can be damaged fairly easily so they need to be replaced from time-  
23 to-time.

24           And there's also no dispute that these particular prior art connection  
25 mechanisms had drawbacks in terms of speed and convenience. The

1 conventional threaded mechanisms required a user to catch the thread and  
2 then rotate the blade around the driveshaft for several revolutions until it was  
3 tightened and then the mechanism shown on the right was also not  
4 particularly fast or convenient. It requires this extra component, the O-ring,  
5 that has to be stretched over the blade and that can be difficult to install and  
6 those O-rings were fairly easy to misplace and you can find that evidence  
7 and testimony at Exhibit 2009, the Reinholtz declaration at paragraph 32.

8 In addition, neither of these designs was mistake-proof meaning that a  
9 user could install the wrong blade using the connection mechanism. Now,  
10 Petitioner disputes that point when it comes to the threaded connection  
11 mechanism on the left of the screen and we'll talk about that in a minute, but  
12 there's no dispute in this case of the benefits of having a mistake-proof  
13 connection mechanism. A UAV with a misinstalled blade -- It's just not  
14 going to fly. The UAV can flip and cause damage and injury.

15 So now with that as background, we turn to the '184 invention and  
16 I've moved to Slide 4. And what we see with the '184 invention is a much  
17 more elegant connection mechanism than was in the prior art for UAVs.  
18 The configuration of the lock mechanism allows the user to place the blade  
19 on the shaft, give it a quick twist and it's locked into place, doesn't use any  
20 extra pieces like an O-ring. You don't have to catch it on threads and spin it  
21 around, and around, and around the driveshaft.

22 And so it has at least two primary features that distinguish it from the  
23 prior mechanisms. First, the lock mechanism is configured to attach with  
24 the quick twist and second the lock mechanism is configured to prevent the  
25 installation of the wrong blade. So in other words, it's mistake-proof and

1 this is really a next generation UAV connection mechanism when you  
2 compare it to the -- what was in the prior art. It's an improvement over  
3 previous UAV connection mechanisms. And both of these features we talk  
4 about are embodied in the revised amended claims.

5 And so if we turn to Slide 5, that shows revised amended Claim 12  
6 and we can see proposed Claim 12 and this one includes the requirement that  
7 the clockwise lock mechanism is configured to engage by partial rotation  
8 and that's the quick twist feature. And then turning to Slide 6, this is  
9 proposed Claim 13 and this claim includes the quick twist feature for the  
10 counter-clockwise lock mechanism.

11 And then turning to Slide 7, we see the excerpt from Claim 1 and this  
12 excerpt includes the engagement limitation that you were shown by counsel  
13 for the Petitioner and that prevents the engagement of a rotor blade with the  
14 wrong lock mechanism. So in other words, this is the mistake-proof feature  
15 and proposed Claims 12 and 13 both depend from Claim 1 and thus both  
16 claims include the engagement limitation.

17 And if we turn to Slide 8, we see testimony from Petitioner's expert,  
18 Dr. Ducharme and he conceded that the quick twist and mistake-proof  
19 features are embodied in the proposed substitute claims.

20 Now, one thing that counsel, Mr. Peters, mentioned when he was  
21 talking about the revised substitute claims, he was talking about this partial  
22 rotation feature that was added to the claims and he said that this partial  
23 rotation has nothing to do with the obviousness claims in this case, that that  
24 added claim limitation really isn't relevant to the obviousness discussion.

25 And the reason he said that was the case is because I think the phrase

1 was the quick twist connection mechanisms are all over the place in the prior  
2 art. And those quick twist connection mechanisms are not in the primary  
3 reference and they're not in the UAV prior art. So that partial rotation  
4 element is relevant to the obviousness question.

5 The obviousness question is whether or not a person of ordinary skill  
6 in the art would have taken their primary reference and tried to obtain that  
7 partial rotation limitation and whether there was a teaching, suggestion or  
8 motivation to obtain that feature and I think that that comment is indicative  
9 of the obviousness approach in this case the Petitioner has taken and that is  
10 let's just look at the prior art, pick which features we want and glue it  
11 together based on a need for those features in the prior art, confusing need  
12 with motivation.

13 And so with that, I'd like to turn to the substantive issues on  
14 obviousness and I'd turn to Slide 9 and this contains a statement from  
15 Petitioner's opposition brief and this relates to one of the most fundamental  
16 problems with Petitioner's obviousness grounds all of which rely on Sasaki  
17 as the primary reference and we can see the statement there. It says, "For  
18 example, the petition explained that the combination," which is based on  
19 Sasaki, "maintains the mistake-proof design of the prior art."

20 And so Petitioner is trying to anchor the motivation to combine in  
21 Sasaki, this need for a mistake-proof design and they're implying -- their  
22 whole premise for their motivation is that Sasaki had that feature. Now, Mr.  
23 Peters said that whether or not Sasaki has that feature is completely  
24 irrelevant to the question because they're replacing the connection  
25 mechanism with some other type of connection mechanism, but it's not

1 irrelevant.

2 Whether or not Sasaki discloses the engagement limitation, whether or  
3 not Sasaki is mistake-proof is relevant because Sasaki doesn't disclose a  
4 mistake-proof design and yet Petitioner's motivation to combine is based on  
5 the premise that it does.

6 And so Patent Owner disagrees that Sasaki is mistake-proof and  
7 Petitioner says that Sasaki is mistake-proof, and so that dispute boils down  
8 to an issue of claim construction with the engagement limitation and we're  
9 back here again with the engagement limitation and this Board addressed  
10 claim construction issues related to the engagement limitation in the prior  
11 IPR proceeding on the '184 Patent.

12 And turning to Slide 10, this contains a quote from the Board's  
13 decision in that prior IPR. And in that IPR, Patent Owner proposed a  
14 construction that the engagement limitation prevented the attachment of a  
15 blade on the wrong driveshaft and the Board rejected that proposed  
16 construction and focused on the word "attached," and explained, as you can  
17 see here in the slide, quote, "Insofar as Patent Owner's position is based  
18 upon an attachment that does not include the requirement engagement, such  
19 is not an attachment as described by the claims."

20 And we agree with the Board's point here, an attachment that does not  
21 have the required engagement does not satisfy the engagement limitation.  
22 But then there is a question that remains, what is the required engagement?  
23 What does it mean for a rotor blade to be engaged in a lock mechanism?

24 Now, in Petitioner's sur-reply brief at Page 4, they say that this is not  
25 a claim construction issue. They don't want to resolve this issue, but it

1 clearly is. When a rotor blade is attached by misthreading, we say it's  
2 engaged in the lock mechanism. Petitioner says it's not and that's a dispute  
3 here and it boils down to the meaning of "engagement" in the claim.

4 And so if we turn to Slide 12, what does "engagement" mean? Here  
5 we have a statement made by Petitioner's counsel at the oral hearing in the  
6 prior IPR on the '184 Patent and Petitioner here states that engagement  
7 means "the mating of two components."

8 And turning to Slide 13, this has a quote from Dr. Reinholtz's  
9 declaration, that's Exhibit 2016 at paragraph 24, where he cites the  
10 dictionary definitions of the words "mate" and "engage" and those  
11 dictionary excerpts are Exhibits 2013 and 2014. And the definitions for  
12 "mate" and "engage" are very similar, "connect or be connected  
13 mechanically; joined closely or combined." And "engage," "establish a  
14 meaningful contact or connection with; to become meshed or interlocked."  
15 That's what "engagement" means.

16 So then the ultimate question then becomes is it possible with a  
17 threaded connection mechanism like the one disclosed in Sasaki to engage a  
18 clockwise propeller with a counter-clockwise lock mechanism and vice  
19 versa and Dr. Reinholtz demonstrated convincingly that the answer is yes.  
20 Dr. Reinholtz created a video, it's Exhibit 2006, of himself screwing a  
21 threaded blade on the wrong driveshaft and counsel characterized Dr.  
22 Reinholtz's threading or misthreading as "really forcing it on there."

23 I will -- hopefully the Board reviews the video and can judge for  
24 themselves whether or not it appeared fairly easy to misthread the blade.  
25 And he also describes his misthreaded of the blade at paragraph 4 of Exhibit

1 2001 and he describes another incidence where the same thing was done at  
2 an ITC hearing in paragraph 53 of Exhibit 2001.

3 And Petitioner has not disputed this. In fact, its own expert, Dr.  
4 Ducharme admitted during his deposition that it was possible to misthread a  
5 blade in this way and that's at Exhibit 2102 at 16, line 8 through 17, line 13.

6 So then the question is what happens when a blade is misthreaded?  
7 And I'd turn to Slide 14. This contains a quote from Dr. Reinholtz's  
8 declaration, Exhibit 2016 at paragraph 23. And as Dr. Reinholtz explains  
9 here, that when a blade is misthreaded, a mechanical connection is created  
10 by engagement between the threads either because threads on the blade are  
11 deformed around threads on the shaft or threads on the shaft carved through  
12 threads on the blade.

13 But the important thing here is that in either instance, whether it's the  
14 deformation or whether it's the carving, the interlocking between the threads  
15 is what attaches the blade to the shaft, so the threads become engaged. This  
16 means that a threaded connection mechanism cannot meet the engagement  
17 limitation.

18 And I just want to read --

19 JUDGE CHAGNON: Counsel?

20 MR. ABRAMIC: -- one point of (indiscernible) --

21 JUDGE CHAGNON: Counsel, can I interrupt you just for one  
22 second?

23 MR. ABRAMIC: Sure.

24 JUDGE CHAGNON: I just have one quick question. So you're  
25 arguing here that the Sasaki, the threads don't disclose the engagement

1 limitation. I just want to be clear. Is your argument that the reference does  
2 not disclose it under the construction that we previously entered in the  
3 earlier case or do we need to add or change something to the construction for  
4 your argument?

5 MR. ABRAMIC: So the -- thank you, Your Honor. That's a very  
6 good question. So I don't think the prior decision addressed this issue which  
7 is what does the word "engagement" mean because that's what this really  
8 boils down to. We say that Sasaki does not disclose the engagement  
9 limitation because you can engage a blade on the wrong driveshaft and when  
10 you do that, the threads are engaged. So when you screw a blade on the  
11 wrong driveshaft, you get a mechanical connection and what Dr. Reinholtz  
12 has said here, and his testimony is on the slide, it happens in one of two  
13 ways. Either it's going to carve through or you're going to get deformation.

14 And just as an aside, the whole -- Petitioner's discussion about the  
15 soda bottle, the only reason Dr. Reinholtz brought up the soda bottle was to  
16 bring up the fact that this misthreading doesn't always result in carving  
17 through the blade. So that's what their expert said. If you misthread the  
18 blades, they're going to carve each other up and that is one possible result as  
19 you can see on Slide 14, but the other possibility is that the threads just kind  
20 of deform and wrap around each other and that's what -- the point that  
21 Dr. Reinholtz was making with the soda threads.

22 But either way, regardless of whether it's deformation or carving,  
23 those threads become engaged and so Petitioner disagrees with that. If you  
24 turn to Slide 15, we can see the reasoning from their expert. This is from his  
25 declaration, Dr. Ducharme's declaration. He says that when a blade is



1 misthreaded it's not engaged because the threads are carving out notches in  
2 the blade lock portion. Okay.

3 But as Dr. Reinholtz explained, when you misthread a blade, threads  
4 are interlocking. They might not be interlocking in the way intended by the  
5 UAV designer, but they're still interlocking. They're still mating.

6 So essentially without explicitly saying so because Petitioner does not  
7 want to make this a claim construction issue, they're arguing that the word  
8 "engagement" is limited to some specific type of engagement intended by  
9 the designer, but there's no basis for importing some type of intent element  
10 into the claim.

11 And Petitioner made this exact same argument explicitly in the ITC  
12 proceeding and if we move to Slide 16, it was rejected. It's just instructive  
13 on kind of the result of these two different arguments where the ITC said,  
14 "'Engagement' does not require a blade to be affixed per factory  
15 instructions. Rather, a rotor blade is engaged when a user can twist the  
16 threads on the improper shaft such that the blade will not fall off," and that's  
17 the point that we're making here with this claim construction.

18 So it is necessary from Patent Owner's perspective for the Board to  
19 address this claim construction issue and address what the Patent means with  
20 the word "engage" in the context of the engagement limitation.

21 JUDGE CHAGNON: Okay. So just to be clear on your position  
22 here, is your position that we need to supplement our prior construction or  
23 that we need to change our prior construction?

24 MR. ABRAMIC: I think it would be supplement your prior  
25 construction because what wasn't addressed in the prior decision is what the

1 word “engaged” really means.

2 JUDGE CHAGNON: Thank you.

3 MR. ABRAMIC: So now I’d like to discuss Petitioner’s proposed  
4 obviousness combinations and I’ve turned to Slide 17. Petitioner essentially  
5 presents two different obviousness grounds. The first is a combination of  
6 Sasaki and Sokn and the second is a combination of Sasaki with any one of  
7 Philistine, Obrist, or EP067. In both cases, their primary reference is Sasaki  
8 so it’s -- I’d like to start by talking about that reference.

9 Sasaki discloses a UAV with the conventional threaded blade  
10 connection mechanism and that’s the disclosure that Petitioner relies on to  
11 try to get the ’184 invention with its additional secondary references. As we  
12 already discussed, the threaded connection in Sasaki is not mistake-proof,  
13 but beyond that Sasaki doesn’t mention mistake-proofing at all.

14 Turning to Slide 17, this contains some excerpts from Sasaki and this  
15 is the portion, and I think counsel referred to this as well, that explains why  
16 Sasaki has different directional threads for counter-clockwise and clockwise  
17 propellers. It’s so that all the propellers tighten during use as opposed to  
18 loosening during use. You can’t have blades flying off and so you’ll use  
19 different threads for clockwise and counter-clockwise blades. That’s the  
20 reason for the different threads. It’s to ensure that the blades don’t fly off.  
21 It’s not to make Sasaki mistake-proof. It’s not to make the UAV mistake-  
22 proof and Sasaki mentions nothing about mistake-proofing.

23 On top of that, Sasaki says that there’s a drawback to threaded  
24 propellers. They over-tighten so they’re difficult to remove. So Sasaki  
25 specifically criticized threaded connection mechanisms and then goes in a

1 completely different direction. It discloses an embodiment that's not  
2 threaded and does not depend on the direction of rotation. So it suggests  
3 moving to a single configuration lock mechanism which is the opposite of  
4 the '184 invention.

5 So now I'd like to turn to Petitioner's first proposed combination and  
6 that's the one based on Sokn. And Sokn relates to an assembly for mounting  
7 a fan motor to a housing in a clothes dryer and Slide 18 shows the primary  
8 figure in Sokn. And what can you see in the figure is that Sokn's  
9 connection mechanism has a threaded ring which is the center piece  
10 identified by the number 19 and that threaded ring screws into a threaded  
11 socket which is the first image on the left designated with the number 25.

12 And if we turn to Slide 19, we see the image of Petitioner's proposed  
13 combination of Sasaki and Sokn. The UAV driveshaft tip is replaced with  
14 the threaded ring 19 and the interior of the propeller blade is replaced with  
15 the threaded socket 25 of Sokn.

16 So what we have here at the end of the day is a combination that still  
17 has a threaded connection mechanism and we know that a threaded  
18 connection mechanism does not disclose the engagement limitation. You  
19 can misthread a blade with a threaded connection mechanism. Dr. Reinholtz  
20 proved that. So even if a POSA were to combine Sasaki and Sokn, the  
21 combination would fail to disclose the engagement limitation. Now, in its  
22 sur-reply brief, and this is at Pages 1 and 2 of their brief, Petitioner asserts  
23 that Dr. Reinholtz conceded that someone would not be able to misthread  
24 Sokn's connection mechanism and they cite to deposition testimony at  
25 Exhibit 1027, Page 166, line 22 to 167, line 16. And bear with me a for a

1 moment, I'm going to get to that page.

2 And at the bottom of Page 166, you can see there's a question about  
3 Figure 3 and Sokn, whether the rotation of the ring assembly would be  
4 clockwise or counter-clockwise and what Dr. Reinholtz says in response and  
5 this is at the top of Page 167, there may be a problem with Figure 3 that I  
6 haven't made note of in my declaration. So he's recognizing an error in  
7 Sokn and that error is, and we'll jump to that in a minute, that the ring as it's  
8 pictured in the image of Sokn should be flipped around. All right.

9 So he says, "So I think there's a mistake and this probably wouldn't  
10 work as configured." And so what he's saying is that this wouldn't work as  
11 intended, all right. He's pointing out the mistake in Sokn. He's not saying  
12 you couldn't misthread a blade if you used the Sokn threading. So I want to  
13 show you this mistake and it was acknowledged by both experts in this case  
14 and it was explained by Petitioner in its opposition brief.

15 So if you have access to Petitioner's opposition brief which is Paper  
16 21 at Pages 6 and 7, and if Your Honors would look at footnote 1 of the  
17 bottom of Page 7, you will see what Petitioner is talking about. Figure 3  
18 contains the error that's readily apparent to a POSITA. And if you look  
19 back at the figure of Sokn that's draw on page 6 of their brief, what  
20 Petitioners have done is flipped that ring around. You can see the numbers  
21 aren't -- you can't read the numbers. They've been flipped around.

22 So what Dr. Reinholtz was testifying about was just an error in the  
23 drawing of Sokn. It was not an admission that you would not be able to  
24 misthread Sokn and he made that clear in his declaration testimony at  
25 Exhibit 2007 which came after his deposition testimony. So if you have

1 access to Exhibit 2007 at paragraph 39, Dr. Reinholtz says, “In addition,  
2 even if a POSA were to combine Sasaki with the connection mechanism of  
3 Sokn, and further modify Sokn to achieve clockwise and counter-clockwise  
4 connection mechanisms with different configurations, such a combination  
5 would still result in a threaded-type connection mechanism. As I  
6 explained in my first declaration, such connection mechanisms do not  
7 prevent a user from attaching a blade to the wrong driveshaft.”

8 So the combination of Sasaki and Sokn would not teach the  
9 engagement limitation and the ground fails for that reason alone. But even if  
10 Sokn or Sasaki did teach the engagement limitation, Petitioner has not  
11 established that a POSA would be motivated to combine the two.

12 There are numerous reasons and we’ve explained them in our  
13 briefing, so I won’t rehash all of them here today, but I just want the focus  
14 on one in particular. We already discussed that Sasaki criticizes, specifically  
15 criticizes threaded UAV connection mechanisms because they lead to over-  
16 tightening and the purpose of the Sasaki invention is to solve that over-  
17 tightening problem and that is the basis for Petitioner’s alleged motivation to  
18 combine, to solve the over-tightening problem. We saw this on our Slide 9  
19 which quotes from Petitioner’s opposition brief.

20 But the combination with Sokn which is still a threaded design would  
21 not solve the over-tightening problem. Dr. Reinholtz explained in great  
22 detail how Sokn does not solve the over-tightening problem. You can find  
23 that testimony in Exhibit 2001, paragraphs 67 through 69 and Exhibit 2007,  
24 paragraphs 28 through 30.

25 And if I could direct your attention to Exhibit 2001 at paragraph 68.

1 In paragraph 68, Dr. Reinholtz explains how it's possible to over-tighten  
2 using Sokn and what he explains is that the interaction of the stops 45 -- so  
3 within the socket on the top figure there at the top of the page, there are the  
4 stops that are the -- protruding down from the top of the socket. Those are  
5 number 45.

6 And then he explains how the face of ring 19, when you screw the  
7 ring in, that ring is going to abut those stops and then you can still keep  
8 turning just like you can keep turning a lid jar and the more you turn, the  
9 more friction gets created and you over-tighten it and he goes into great  
10 detail in the paragraphs that I've cited and explains technically why you can  
11 over-tighten using Sokn and the Petitioner has not rebutted this evidence.

12 In their brief, they argue that because the stops 45 in Sokn are called  
13 stops, they must stop the ring and prevent over-tightening, but this does  
14 nothing to rebut Dr. Reinholtz's technical explanation for how Sokn would  
15 actually over-tightening thus a person of ordinary skill in the art would not  
16 look to Sokn. Sasaki specifically criticizes threaded connections and  
17 therefore teaches away from Sokn.

18 And Petitioner tries to rescue its argument by asserting that a person  
19 of ordinary skill in the art would have added radial stops to the combination,  
20 but this is hindsight. It's treating the prior art like a buffet, picking and  
21 choosing features to come up with the claimed invention. That also ignores  
22 the fact that Petitioner's argument depends on establishing that a person of  
23 ordinary skill in the art would have been motivated to look to Sokn in the  
24 first place, but a person of ordinary skill in the art would not look to the  
25 threaded design in Sokn because Sasaki specifically criticizes that threaded

1 design.

2 And so now I'd like to turn to the grounds that are based on Philistine,  
3 Obrist and EP067 and I'm on Slide 20 and this shows the connection  
4 mechanisms for each of those three references and Petitioner proposes  
5 combining Sasaki with one of these three references. Each of them discloses  
6 a type of twist lock mechanism. The arguments for all three of these  
7 references is essentially the same because Petitioner uses them for the same  
8 purpose.

9 Petitioner alleges that a person of ordinary skill would replace the  
10 threaded connection of Sasaki with the twist lock connection mechanisms of  
11 these three references. Now, why would a person of ordinary skill in the art  
12 do that? Well, if we go to Slide 21, this has a quote from Petitioner's expert  
13 and here we see the phrase "Mechanisms of Philistine, Obrist and EP067  
14 each solves the over-tightening problem of Sasaki's prior art threads while  
15 maintain the well-known mistake-proof design."

16 So with respect to the first reason, solving the over-tightening  
17 problem. It's correct that these particular connection mechanisms do not  
18 have an over-tightening problem of a threaded connection, but there's a big  
19 problem with the combinations.

20 If we look back at Slide 20, even if you use these connection mechanisms  
21 with Sasaki, you would not result in the claimed invention because for each  
22 of these secondary references they only disclose a single configuration, so  
23 the combination would not result in different clockwise and counter-  
24 clockwise lock mechanisms. The combination would not result in lock  
25 mechanisms that meet the engagement limitation because in order to do so

1 you would need different configurations for the clockwise and counter-  
2 clockwise lock mechanisms.

3 So to solve this problem, Petitioner makes a large leap and says the  
4 person of ordinary skill in the art, well, they would just mirror images of the  
5 connection mechanisms in the references to come up with counter-clockwise  
6 and clockwise lock mechanisms. Well, where does this come from? Where  
7 does that motivation come from? None of these secondary references relate  
8 to UAVs. None of them discloses clockwise or counter-clockwise rotating  
9 rotor blades or the need to prevent interchangeably mounting such blades.

10 And if we go back to Slide 21, we can see that Petitioner alleges that  
11 the combination maintains Sasaki's mistake-proof design. So again,  
12 Petitioner's motivation argument is based on a false premise. Sasaki is not  
13 mistake proof. And as we've previously discussed, Sasaki says nothing  
14 about a need for mistake-proof mechanisms. So the motivation cannot come  
15 from Sasaki despite Petitioner's attempt to anchor it in Sasaki. Sasaki also --

16 JUDGE CHAGNON: Counsel? Counsel, I have a --

17 MR. ABRAMIC: Yes?

18 JUDGE CHAGNON: -- quick question for you. So putting aside  
19 whether or not Sasaki discloses mistake-proof or not, would you agree that  
20 Sasaki does, in fact, disclose opposite threads on its -- for its propellers,  
21 some that screw on left and some that screw on right?

22 MR. ABRAMIC: Yes, it does disclose some that screw on left and  
23 some that screw on right. But again, the combination -- in the combination  
24 that's being proposed with these additional pieces of prior art, those threads  
25 are completely removed. And the other thing to keep in mind is that with



1 Sasaki, those threads, the reason those threads have different directions is  
2 not for mistake-proofing. It's to ensure that the blades don't fly off. It's to  
3 make sure that the blades self-tighten.

4 And so then we're left with -- but what are we left with for  
5 motivation? Sasaki does not identify a need for a faster connection  
6 mechanism. It talks about a solution being easier, but Petitioner's own  
7 expert testified that, and this is at Exhibit 1003 paragraph 100, quote,  
8 "Sasaki's solution is more difficult for a user to manipulate in the field than  
9 a simple screw/nut fastener."

10 So speed wasn't -- wouldn't be the reason. So what are we left with  
11 for an alleged motivation? Well, it comes from -- just from expert opinion.  
12 In Exhibit 2010, page 3 an expert for Petitioner, and this was in the ITC,  
13 says that, "In the context of UAV connection mechanisms that for a typical  
14 drone user, it's of paramount importance to maximize speed."

15 And with respect to mistake-proofing, the alleged motivation comes  
16 from expert testimony that a POSA would have understood the need to  
17 attach propeller blades to the correct drive shafts because of the well-  
18 understood technical concept that pitch blades have to rotate in a certain  
19 direction to generate lift. And you can find Dr. Ducharme's reference to this  
20 well-understood concept at paragraph 45 of his declaration, Exhibit 1003.

21 And Dr. Reinholtz does not dispute this concept and he agrees that  
22 there's a need to ensure that UAV propeller blades are quickly attached to  
23 the correct drives, but Petitioner is confusing need with motivation. The law  
24 is clear that the recognition of a need does not render the solution obvious.

25 And I'd just like to direct the Board to a Federal Circuit case that

1 addressed the issue where there was no motivation found in the prior art  
2 itself and the motivation offered was expert testimony based on a need, a  
3 market need. And the case is Celsis in Vitro and the citation is 664 F.3d  
4 922, pinpoint is 928. And after explaining that the patent challenger in that  
5 case had not identified a motivation -- teaching, suggestion or motivation in  
6 the prior art reference, the court noted that the alleged motivation came from  
7 expert testimony alleging a market need. And the court said, quote,  
8 “Without more, this reference to market need properly linked to the claimed  
9 invention is actually probative of long-felt need under objective criteria  
10 analysis and supportive of non-obviousness.”

11 So when the alleged motivation comes from a need expressed through  
12 expert testimony, which is what we have here, that can be probative of non-  
13 obviousness. And when you look at the motivations and you dig into the  
14 alleged motivations, the motivation for obtaining the claimed features;  
15 mistake-proofing and the quick twist, come strictly from expert testimony  
16 that UAV users would want those features.

17 But that testimony supports a long-felt need and it’s probative of non-  
18 obviousness. So in the revised motion to amend, Patent Owner pointed to  
19 this long-felt need in the UAV industry for fast and mistake-proof blade  
20 connection mechanisms and this is at Paper 17, page 23 and Patent Owner  
21 cited to this testimony from Petitioner’s expert in this proceeding and in an  
22 ITC proceeding describing these market needs and Petitioner came back in  
23 response and opposition and said, “Well, no, no, no. When our experts were  
24 talking about a need, they were talking about a need that existed at the time  
25 of the invention in the context of an obviousness analysis. We weren’t

1 talking about a need that existed prior to that time.”

2 But as we already discussed, this alleged need for the mistake-proof  
3 feature is based simply on the POSA’s understanding of the well-understood  
4 technical concept that pitch blades have to rotate in a certain direction to  
5 generate lift as opposed to a downward thrust and Petitioner’s expert  
6 admitted that a POSA would have been aware of this concept since at least  
7 early 20th Century. So that need existed a long, long time ago and Dr.  
8 Reinholtz explained that UAV users wanted connection mechanisms that are  
9 quick and easily detachable. That’s at Exhibit 2001 at paragraph 27.

10 And Petitioner doesn’t dispute this testimony and they don’t provide  
11 any evidence that this need would not have existed for UAV users prior to  
12 2013. What they do so is that, “Well, there can’t be a long-felt need in this  
13 case because the UAV industry really didn’t get going until 2010,” but that’s  
14 just not the case.

15 As explained by Dr. Reinholtz in paragraph 30 of Exhibit 2016, the  
16 quadcopter UAV called the Keyence GyroSaucer was introduced in Japan in  
17 the late 1980s and Keyence is actually the Applicant identified on the cover  
18 page of the Sasaki reference which is Exhibit 1006. And in addition, Exhibit  
19 2015 is an article that explains that in the late 1990s the quadcopter called  
20 The Dragonflier was launched and this is corroborated by Petitioner’s own  
21 Exhibit No. 2011.

22 In Exhibit 2011 -- I’m sorry, that’s a misquote. I believe it is 1011. If  
23 Your Honors have access to Exhibit 1011, it’s a dissertation in the  
24 Petitioner’s exhibit and it has a chapter dedicated to quad rotor history  
25 starting at page 17. And then starting at page 26 of the document, there’s an

1 entire section dedicated to Spectrolutions which is the company that  
2 developed this Dragonflyer.

3 And its surreply brief at page 10, Petitioner refers to The Dragonflyer  
4 as a failed quadcopter, but it doesn't put forth any evidence about being a  
5 failure. And indeed, in this section in Exhibit 1011 starting at page 26, it  
6 explains that after the first Dragonflyer launch in 1999 the company  
7 continued to improve the UAV and launched several new versions of The  
8 Dragonflyer over the next several years.

9 Now, in its surreply, Petitioner cites the testimony from Dr. Reinholtz,  
10 that's Exhibit 1029 at page 104 where he said that the first time he saw a  
11 quadrotor in operation was likely the late 1990s and this is entirely  
12 consistent with the information about The Dragonflyer launch and this is  
13 over 13 years before the invention of the '184 Patent.

14 Petitioner asserts that there's no nexus between the amended claims and the  
15 mistake-proof and fast connection features, but as we saw earlier with the  
16 testimony of Ducharme that's on Slide 8, he admitted that both features are  
17 embodied in the amended claims.

18 The Petitioner asserts that Microdrones, the Microdrones reference,  
19 solved the long-felt need, but that's not the case. Microdrones is not a part  
20 of the alleged obviousness combinations in this proceeding. It was the  
21 reference relied on in the previous IPR on the '184 Patent and that's at  
22 Exhibit 1016.

23 At page 27 it shows the Microdrones connection mechanism. It's not  
24 a twist lock mechanism. It uses an extra component. It's got an O-ring to  
25 attach the rotor blades and Dr. Reinholtz at paragraph 32 of Exhibit 2009

1 explained how these types of connection mechanisms are not really fast or  
2 convenient. The O-rings are hard to install, they're easy to misplace and  
3 there's even tools that are out there to help you try to get the O-rings on and  
4 the Petitioner hasn't offered evidence to rebut this testimony.

5 In addition, Microdrones is not mistake-proof. It shows on Page 27 of  
6 Exhibit 2016 how it's possible to secure a rotor to the wrong driveshaft on  
7 Microdrones. Now, Petitioner said that Microdrones disclosed the  
8 engagement limitation and to the extent that Microdrones has some mistake-  
9 proof features, certainly Page 27 of Exhibit 2016 shows that it was not  
10 perfectly mistake-proof because you can get a drive -- I'm sorry -- a blade  
11 on the wrong driveshaft.

12 I'll also note that Microdrones has a copyright date of 2014 to 2007  
13 and that's at page 103 of Exhibit 1016 and that further contradicts the notion  
14 that the UAV industry did not start until 2010. And Petitioner asserts that,  
15 "Well, a long-felt need can't be based off of Claim 1," which was  
16 invalidated, but that long-felt need is based on proposed Claims 12 and 13  
17 which depend from Claim 1 and proposed Claims 12 and 13 contain the  
18 combination of features which is the quick twist mechanism and the  
19 mistake-proof feature.

20 So just to sum up the arguments on obviousness, it is Patent Owner's  
21 position that the obviousness grounds here are an exercise in hindsight. I  
22 think I mentioned the prior art buffet previously. Patent Owner respectfully  
23 submits that that's what's going on here. You know, they start with the  
24 claim and work backwards finding different elements and different prior art  
25 references making modifications to the prior art where the elements are

1 missing and that's all glued together by a general need for the claimed  
2 features that comes in the form of expert testimony not from the prior art  
3 itself. So we believe that these amended claims are non-obvious.

4 And I will note for the record that counsel had indicated that the  
5 preliminary guidance found that the claims were likely unpatentable, but in  
6 that preliminary guidance the Board did not consider the arguments with  
7 respect to the engagement limitation and that is a big part of the problem  
8 with the obviousness arguments here where their motivation is underpinned  
9 and anchored in this notion that Sasaki is mistake-proof and it's just not.

10 So finally, I'd like to just very briefly address the arguments on claim  
11 broadening. So if you'll just --

12 JUDGE CHAGNON: Oh. Counsel, just to let you know, you have  
13 over five minutes left before you go into your rebuttal time. About five or  
14 six minutes. That seemed like a good spot to remind you.

15 MR. ABRAMIC: Thank you very much. I appreciate that. I'm  
16 going to finish up here in just a -- very quickly. So on this notion of whether  
17 or not the proposed amended claims broaden the scope of the original  
18 claims, so Petitioner relies on the removal -- and I'm on Slide 5 here. I'm  
19 looking at Claim 12, and Petitioner says that, "Well, you remove this  
20 language 'is rotated'," to assert that the claim got broader. So they're saying  
21 the claim got broader because you've removed this requirement of "is  
22 rotated," but Petitioner successfully asserted in the ITC that that language  
23 rendered the claim indefinite.

24 Accordingly, the change to that language that we put into the new  
25 claims did not broaden the scope of the claims. It made them definite. All

1 of the other changes narrow the scope of the claims. So what we have done  
2 with these amended claims is two things. We've made the claims definite  
3 and more narrow, but not broader. And with that, I will pass the baton to  
4 Petitioner.

5 JUDGE CHAGNON: Thank you, counsel. Petitioner, you have 30  
6 minutes for your rebuttal. Whenever you are ready, you can begin.

7 MR. PETERS: Thank you, Your Honor. I think what we just heard  
8 was a lot of attacking of strawmen. Now when I opened this argument, I  
9 never said that partial rotation is irrelevant to the obviousness question as  
10 Mr. Abramic accused. What I said was that we're not going to hear much  
11 argument about partial rotation because it's indisputably in the prior art and,  
12 in fact, that's exactly what you just saw.

13 Now, Mr. Abramic argues that the requirement for motivation is some  
14 teaching, suggestion or motivation for partial rotation specifically which is  
15 an extremely narrow way of looking at motivation to combine in this case  
16 and we have provided a plethora of motivations that are supported both with  
17 the intrinsic records of the prior art and with expert testimonies and the  
18 experts on both sides agreeing about what a person of ordinary skill in the  
19 art would be motivated to do.

20 Now, Mr. Abramic says that Petitioner is confusing need with  
21 motivation. Well, of course we argue that it's the other way around, but  
22 nevertheless -- and we have this on our -- this is our opposition to the motion  
23 on Page 14 and where we're citing the Federal Circuit case from 2018, ZUP,  
24 LLC v. Nash Manufacturing which states that, "A motivation to combine  
25 may be found explicitly or implicitly in market forces design incentives, the

1 interrelated teachings of multiple patents, any need or problem known in the  
2 field of endeavor at the time of invention and addressed by the patent.”

3         So let’s look at our Slide 21. We have the experts agreeing about a  
4 need and a motivation to modify Sasaki to make it simpler, faster and  
5 mistake-proof. That’s agreement of the experts there and again, there’s no  
6 dispute there. Now, there’s also no dispute -- maybe there was a dispute, but  
7 what I will say is the combinations are mistake-proof, especially the way  
8 that Petitioner has actually proposed them to be combined, right.

9         Now what we hear Mr. Abramic argue is that you wouldn’t actually  
10 mirror the mechanisms when you combine with Sasaki, but if you do mirror  
11 the mechanisms when you combine them with Sasaki, you do end up with a  
12 mistake-proof design and I don’t think there is a dispute about that.

13         Now, Mr. Abramic states that our -- that we base our motivation to  
14 combine on Sasaki being mistake-proof and again I would point the Board to  
15 Slide 21 and to Dr. Reinholtz’s testimony about the needs and the  
16 motivations for a person of ordinary skill in the art to make Sasaki mistake-  
17 proof.

18         JUDGE CHAGNON: Counsel, can I interrupt you here with a  
19 question?

20         MR. PETERS: Sure.

21         JUDGE CHAGNON: Could you address -- this is slightly related  
22 here -- Patent Owner’s argument that in Sasaki you do have engagement as  
23 required by the claim even if you put the clockwise blade on the counter-  
24 clockwise shaft for example? What evidence do you have on that point?

25         MR. PETERS: That point is a red herring, Your Honor. I mean,



1 Sasaki doesn't need to disclose the engagement limitation. It is re-tasking  
2 mistake-proof as the engagement limitation. Now, so I guess to come back  
3 to your question about whether Sasaki is engaging when you're  
4 misthreading the blades -- is that your question?

5 JUDGE CHAGNON: Yes, if you attach the -- for example, the  
6 clockwise blade on the counter-clockwise shaft. I understand Patent  
7 Owner's argument to be that even if it's misthreaded that would still be  
8 engaging, it would still have engagement. Could you address that argument?

9 MR. PETERS: Right. And so the question is what's engaging with  
10 what in this case. It's not really about what "engagement" is although I will  
11 point to Patent Owner's Slide 13 which Patent Owner, I don't think,  
12 provided slide numbers, but I think we can probably see it in the PDF --  
13 where they've provided a definition of "engagement" and there's nothing  
14 here that states that "engagement" is carving out a new notch in order to  
15 engage, right?

16 So what we -- what they have is a thread that's carving out a new  
17 notch and engaging with that carving out that is just done. It's not engaging  
18 with the lock mechanism as it existed before it was being installed, but  
19 nevertheless that point doesn't apply to any of our combination because we  
20 don't rely on Sasaki for the engagement limitation.

21 JUDGE ROSS: So can I interrupt for just a second please? So when  
22 you were talking about this carving out, are you saying then that it doesn't  
23 then mate?

24 MR. PETERS: Well, the question is what it's mating with and so is  
25 the -- is it mating with the mechanism and I think the answer is that it is --

1 it's not mating with the mechanism. It's carving into the mechanism.

2 JUDGE ROSS: Thank you.

3 MR. PETERS: So again, what we saw in Mr. Abramic's --

4 JUDGE CHAGNON: I'm going to pause --

5 MR. PETERS: -- brief --

6 JUDGE CHAGNON: -- for a second. I think we may have lost Judge  
7 Ross accidentally. I'm going to stop the time for just a second.

8 Could I ask our tech? Do we have Judge Ross on the line or did she  
9 accidentally disconnect herself?

10 Thank you all for your patience. I think we'll be just a minute.

11 THE USHER: Trying to reconnect. Standby.

12 JUDGE CHAGNON: Okay. There we are. I think we're back. So  
13 thank you so much on the -- we'll go ahead and restart your time if you want  
14 to continue. Apologies for the interruption.

15 MR. PETERS: Okay. Thank you, Your Honors. No problem. So  
16 again, what we saw Mr. Abramic do and what they did in their brief is they  
17 start talking about mistake-proofing and then jump directly into the  
18 engagement limitation. All right. The mistake-proofing does not require  
19 satisfaction of the engagement limitation. There's absolutely no reason for  
20 it. Now, you -- mistake-proof -- now, the engagement limitation is one way  
21 that you can do mistake proofing, but it's not the only way. All right.

22 Now, we hear Mr. Abramic talk about Sokn and Dr. Reinholtz's  
23 testimony about how Sokn wouldn't work on a motor spec if threads were  
24 mismatched and Mr. Abramic said what he meant was it wouldn't work as  
25 intended. But if you can rotate -- if you can install Sokn's document

1 mechanism by rotating it the wrong direction, that's working.

2 I mean, Sokn's system just needs to mate -- not mate, but it needs to  
3 be installed and it doesn't require -- it's unlike a -- it's different than in the  
4 case of a UAV when your mounting the blade onto the wrong propeller and  
5 there's additional motion happening that would cause the UAV not to work,  
6 right. In Sokn, if you can and you tried to misthread the threads of Sokn, it  
7 wouldn't affect the operation of the actual blower or the fan in Sokn at all.  
8 Right.

9 So the point that -- whether he's saying whether it would work as  
10 intended or whether it would work at all, the point is that Mr. Reinholtz --  
11 Dr. Reinholtz's impressions that the misthreading wouldn't work should be  
12 given more weight than what he wrote afterwards in his declaration that was  
13 based entirely on the Sasaki reference which is a different threading  
14 mechanism which brings me to my next point which is that Patent Owner  
15 continuously draws conclusions about Sasaki -- about Sokn based on what  
16 Sasaki says about the prior art thread mechanism.

17 They're different mechanisms. They're going to put -- we have  
18 segmented mechanism in Sokn with the four stops. And so, you know, you  
19 can't just draw conclusions about all threaded mechanisms based on what  
20 Sasaki says about its own one prior art threading mechanism.

21 Now, we heard also Patent Owner talk about how radial stops and our  
22 arguments about radial stops is a hindsight argument. And if you look at  
23 Exhibit 1029 in this case which is Dr. Reinholtz's deposition, it was his  
24 second deposition in this case, and if we look at Page 67 starting at line 7,  
25 we pointed him to paragraph 28 where he stated -- of his second declaration

1 where he stated, “Positive non-frictional stops require stop elements that  
2 abut radially rather than axially.”

3 We asked him if he cited any evidence in support of that statement  
4 and he stated, “I don’t provide a citation, but that is of course common  
5 knowledge. It’s common sense really,” and Patent Owner would have us  
6 disregard the common knowledge and common sense of a person of ordinary  
7 skill in the art when considering these combinations.

8 Now, we also heard about over-tightening with Sokn and I’ll note that  
9 over-tightening is not an issue and not disputed at all with the Philistine,  
10 EP067 and Obrist references. And a solution of over-tightening, again not  
11 disputed, is the motivation to combine those references with Sasaki as  
12 shown on Patent Owner’s own slide.

13 When Mr. Abramic looks at the prior art; the Sokn, Philistine, Obrist  
14 and EP067 and asks, “Where does the motivation for mirroring come from,”  
15 and then explicitly lists that the motivation is in Sasaki. The motivation is  
16 there in Sasaki due to the forces of the UAV that they admit and the result of  
17 that mirroring gives you the mistake-proof design which is admittedly a need  
18 in the prior art.

19 Now, Mr. Abramic pointed to -- we are turning to long-felt need. Mr.  
20 Abramic pointed to some products that were out there and maybe being sold  
21 in the early 2000s. The existence of products is not an establishment of a  
22 long-felt need. Like Ms. Gordon said earlier on, there is no evidence that the  
23 user is reaching out and saying, “We really need this.” There’s no evidence  
24 of people trying before the ’184 Patent and failing to achieve a simple  
25 mistake-proof blade attachment mechanism. But what we do have is a

1 consensus by the experts and, you know, Mr. Abramic's criticizing us for  
2 using expert testimony, but it's a consensus in this case that there is a  
3 motivation to make Sasaki simple mistake-proof and fast.

4 Now, Mr. Abramic also criticizes the Microdrones reference and if we  
5 look at our slide -- I believe it's 38 and now I'm getting a little bit turned  
6 around so I'll need to open up the PDF. So Slide 38 and Mr. Abramic talks  
7 about how, you know, a person of ordinary skill or -- no, a user would need  
8 tools and how difficult it might be to install the blade here onto the  
9 driveshaft and we see it this in figure, this is -- this is pictures that are shown  
10 in Microdrones. There's no tools here. A user is using his hand in the  
11 second from the top figure to pull the O-ring over the blade, so there doesn't  
12 seem to be anything difficult about this whatsoever.

13 Finally, Mr. Abramic points out that the ITC found Claims 3 and 4 to  
14 be indefinite. Now, "indefinite" doesn't mean broad. And in this case, it  
15 was IPXL type indefiniteness where there is a step required in an apparatus  
16 claim and they've removed that step and that's why the claim is broader  
17 now.

18 If there's no further questions, we'll cede the rest of our time.

19 JUDGE CHAGNON: All right. I guess that means no questions from  
20 anybody. Thank you so much. Patent Owner, you have about 14 minutes  
21 left for your rebuttal of your time. Whenever you're ready, you can go  
22 ahead.

23 MR. ABRAMIC: Thank you, very much. The first thing I want to  
24 address is this confusion between motivation and need. And so Petitioner  
25 started out with the rebuttal by addressing my comment that they were

1 confusing motivation with need and he said it was the other way around and  
2 the he went directly to their Slide 21.

3 So if you have access to their Slide 21, he pointed to Patent Owner's  
4 expert declaration as evidence of a motivation, "DJI has recognized that a  
5 POSA would have understood the need." And he said later in his rebuttal  
6 that there's a consensus that there was a motivation and again pointed to this  
7 testimony.

8 There is not a consensus at all. Either there was a need and that need  
9 was long-felt because that need is based solely on expert testimony that says  
10 UAV users would want these features or there isn't a need and there isn't a  
11 motivation. They can't have it both ways on that point. They say that a  
12 motivation can come out of a need. That's true, but it doesn't mean that all  
13 you need to do is establish a need and voila you've got a motivation. That's  
14 just not the case.

15 The next thing I want to address is this notion that the engagement  
16 limitation somehow is not the mistake-proofing feature of the claim. And so  
17 on Slide 7 of Patent Owner's slides, we have the engagement limitation there  
18 where it says that the clockwise rotor blade is engageable only with the  
19 clockwise lock mechanism. Well, the lock mechanism is the thing that  
20 attaches the blade to the drive and so it's engageable only with the clockwise  
21 lock mechanism and can't be engaged in the counter-clockwise lock  
22 mechanism and vice versa.

23 And if we move to the next slide, this is Petitioner's own expert's  
24 testimony where he acknowledges that mistake proofing is embodied in the  
25 revised amended claims. He says, "Mistake-proofing is considered to be the

1 wrong propeller on the wrong motor so I would say yes.” The engagement  
2 limitation is the mistake proofing limitation. I would challenge Petitioner to  
3 identify some other limitation within the revised amended claims that is the  
4 mistake proofing limitation. It’s the engagement limitation.

5 And on this issue of whether or not misthreading a blade meets the  
6 engagement limitation, counsel said that, “Well, you have to look at what  
7 it’s mating with and if you misthread a blade, it’s not engaging with a lock  
8 mechanism because it’s carving out new notches.” Well, there’s nothing  
9 about notches in the engagement limitation. The engagement limitation just  
10 requires a rotor blade to be engagable with the clockwise lock mechanism.  
11 The rotor blade has to be engagable with the lock mechanism.

12 I don’t think Petitioner would dispute that the threads are part of a  
13 lock mechanism for the embodiment in Sasaki and a conventional lock  
14 mechanism. They are the thing that holds the blade onto the driveshaft and  
15 when you rotate -- when you misthread that blade, a connection is  
16 established. There is engagement there under the meaning of the -- plain  
17 meaning of the word “engaged”.

18 So Sasaki just does not disclose the engagement limitation and it’s not  
19 a red herring. It’s important because they need to show a combination that  
20 discloses the engagement limitation and so that means they have to -- that a  
21 threaded mechanism doesn’t disclose the engagement limitation and the  
22 combination of Sasaki and Sokn is a threaded mechanism.

23 And it’s also important, and I mentioned this previously because they  
24 are -- they have anchored their motivation to combine on the false premise  
25 that Sasaki discloses the engagement limitation. Counsel said that the

1 existence of products is not establishing a long-felt need. I agree with that.  
2 But it's not just the existence of the products. It's the existence of the  
3 products coupled with this need that they admit existed that comes solely  
4 from their expert testimony.

5 And the Federal Circuit case that I cited makes this point, that when  
6 this alleged market need is the basis for your motivation, that can be  
7 probative of non-obviousness and it's need, this alleged need, just comes out  
8 of this simple desire for UAV users to have quick twist mechanisms and  
9 based on the principle that you want to get the right blade onto the right  
10 driveshaft and that understanding -- the evidence shows that understanding  
11 would have existed long before the invention of the '184 Patent and so that  
12 need would have existed when there were UAVs and quadcopters that were  
13 out there and we established that they were out there for a heck of a lot  
14 longer than Petitioner said they were long before 2010 and that's all I have,  
15 Your Honor.

16 JUDGE CHAGNON: Thank you so much. Thank you everyone for  
17 your presentations today. This was very helpful and so with that, this  
18 hearing is adjourned.

19 MR. ABRAMIC: Thank you.

20 JUDGE ROSS: Thank you.

21 (Whereupon, at 3:31 p.m., the PTAB hearing in the above-entitled  
22 matter was concluded.)



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PETITIONER:

Lori A. Gordon

Steve W. Peters

KING & SPALDING LLP

lgordon@kslaw.com

speters@kslaw.com

PATENT OWNER:

Timothy Bickham

Matthew Bathon

John L. Abramic

Harold H. Fox

Gretchen P. Miller

STEPTOE & JOHNSON LLP

tbickham@steptoe.com

mbathon@steptoe.com

jabramic@steptoe.com

hfox@steptoe.com

gmiller@steptoe.com