

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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NETFLIX, INC. and COMCAST CABLE COMMUNICATIONS, LLC,  
Petitioners,

v.

REALTIME ADAPTIVE STREAMING LLC,  
Patent Owner.

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Case IPR2018-01187<sup>1</sup>  
Patent No. 9,769,477

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**PATENT OWNER'S SUR-REPLY**

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<sup>1</sup> Comcast Cable Communications, LLC, which filed a petition in IPR2019-00786, has been joined as a party to this proceeding.

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**EXHIBIT LIST**

<b>Exhibit No.</b>	<b>Description</b>
<b>2001</b>	Declaration of Kayvan B. Noroozi in Support of Motion for Admission <i>Pro Hac Vice</i> .
<b>2002</b>	Declaration of Kenneth A. Zeger, Ph.D.
<b>2003</b>	Transcript of Oral Deposition of James Storer, Ph.D, taken in IPR2018-01187 on May 8, 2019.
<b>2004</b>	Digital Compression and Coding of Continuous-Tone Still Images – Requirements and Guidelines (JPEG Standard)

**I. The Reply fatally concedes that the Petition does not explain how a POSITA would modify Imai to use video encoders or combine Imai and Pauls, and thus cannot prevail**

The Federal Circuit has held that obviousness based on a prior art combination cannot be reached absent a clear explanation or evidence “showing [ ] *how* the combination of the two references was supposed to work.” *Personal Web Tech. v. Apple*, 848 F.3d 987, 994 (Fed. Cir. 2017) (emphasis original). As the Federal Circuit explained in *Personal Web*, “such a clear, evidence-supported account *of the contemplated workings* of the combination is a *prerequisite* to adequately explaining and supporting a conclusion that a relevant skilled artisan would [1] have been *motivated* to make the combination and [2] *reasonably expect success* in doing so.” *Id.* (number and emphasis added).

In particular, the Federal Circuit has held that a *prima facie* obviousness showing requires the challenger (1) “to explain how specific references could be combined,” (2) “which combination(s) of elements in specific references would yield a predictable result,” and (3) “how any specific combination would operate or read on” the claims. *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312, 1327-28 (Fed. Cir. 2012).

The Board has repeatedly recognized those requirements, and has repeatedly rejected obviousness allegations that fail to explain *how* the prior art elements could have been combined to achieve predictable results and arrive at the claimed

invention. *Dell, Inc. v. Realtime Data, LLC*, IPR2016-01002, Paper 71 at 15; *Dell, Inc. v. Realtime Data, LLC*, IPR2016-00972, Paper 71 at 10-11, 15-16; *Commvault Systems, Inc. v. Realtime Data LLC*, IPR 2017-2007, Paper 11 at 13.

In the POR, Patent Owner demonstrated that the Petition offers no explanation as to *how* a POSITA would modify Imai, Pauls, or the combination of Imai and Pauls because it does not explain what would be the “first” or “second” encoders recited by the claims, as is required to show obviousness. POR 7-17, 36, 51-54. Indeed, Petitioner’s expert failed to provide any explanation on cross-examination. *Id.* at 11-17.

In its Reply, Petitioner fails to address those crucial and dispositive arguments. The Reply simply offers no further explanation which encoders included in the combinations would be the claimed “first” or “second” encoders. Petitioner thus confirms that no such explanation exists.

Petitioner’s failure to address that issue is a dispositive concession. Accordingly, the Board cannot find any claims unpatentable based on Imai or Pauls on this record. *See* POR 7-17, 36, 51-54.

Rather than address that crucial issue head on (which it cannot do), the Reply instead attempts to dodge the issue by stating: “Realtime cannot seriously contend that a POSITA would not know how to select or implement video or image compressor encoders that vary in their data compression rates or

compression ratios . . . .” Rep. 2. But Patent Owner never so contended. And in any case, that argument is simply a sleight of hand attempt at shifting the burden of proof in this proceeding: the Petition must show *how* the prior art would have been combined or modified to arrive at the claims; Patent Owner need not prove otherwise. In order to meet its burden, Petitioner must explain “how any specific combination would operate or read on” the claims. *ActiveVideo*, 694 F.3d at 1327-28. Petitioner continues to refuse to do so here.

Thus, simply asking the Board to dream up *some* combination of encoders that might meet the limitations cannot save Petitioner: it is Petitioner’s burden to show that the Petition demonstrated *how* the POSITA would have combined the prior art elements to arrive at the claimed invention, and Petitioner has not even attempted to make that showing.

Finally, Petitioner asserts—without support or explanation—that “Petitioner has demonstrated . . . how Pauls would work with Imai.” Rep. 20. On that basis, Petitioner attempts to distinguish *Personal Web. Id.* But Petitioner’s continued refusal to explain which encoders from would constitute the “first” and “second” encoders recited in the claims belies its assertion.

Petitioner also attempts to distinguish *Personal Web* on the grounds that the Petition’s combination is simpler than the combination in *Personal Web* and thus “is not the kind of ‘complexity or obscurity... mak[ing] more detailed explanations

necessary.” Rep. 19-20. If true, Petitioner’s argument would only justify a “[less] detailed explanation.” It is no basis for providing *no explanation* whatsoever of how the “first” and “second” encoder limitations read on the prior art.

Moreover, Petitioner conspicuously makes no attempt to distinguish *ActiveVideo*, or argue that the Petition satisfies *ActiveVideo*’s requirement to “explain ... how any specific combination would operate or read on the asserted claims.” 694 F.3d at 1327-28.

Accordingly, the Board should find that Petitioner has conceded that the Petition has not shown any claim to be unpatentable. *See* POR 7-17, 36, 51-54. The Board should uphold the patentability of all challenged claims on that basis.

## **II. The claims’ recitation of “configured to” requires purposeful design**

In its Response, Patent Owner offered (1) numerous cases from the Federal Circuit and district courts interpreting “configured to” to require purposeful design, (2) examples from the ‘477 patent’s specification showing the same usage of “configured to,” and (3) an explanation of how the claimed invention relies on the predictable and purposeful configuration of the encoders’ compression rates. POR 17-22. In its continued attempt to read “configured to” out of the claims, Petitioner addresses only one cited case, does not address the specification’s use of “configured to” at all, and misinterprets the POR’s exemplary description of the

claimed invention as “advocating for a limitation absent from the claims.” Rep. 7-8.

First, the Reply argues that *Aspex Eyewear* does not support a purposeful design requirement because the claim term in that case was “adapted to.” Rep. 7-8. But, as the POR explained, the Federal Circuit in *Aspex Eyewear* equated “adapted to” with “configured to,” which it considered even narrower than “adapted to.” POR 18-19 (citing *Aspex Eyewear v. Marchon Eyewear*, 672 F.3d 1335, 1349 (Fed. Cir. 2012)). And it concluded that even “adapted to”—which the Court considered broader than “configured to”—required purposeful design and meant “configured to accomplish the specified objective” of the claims. *Id.* If the broader term, “adapted to,” requires purposeful design, then so too must the narrower term “configured to.” Indeed, the Federal Circuit used “configured to” to convey its narrower interpretation of “adapted to.” *Id.*

The Reply also suggests that *Aspex* is inapplicable because that case relied on the “facts of the case and that patent.” Rep. 8. But here too, the claimed invention and the specification’s use of “configured to” support the requirement of intentional design, as the POR explained. POR 19-21.

Next, the Reply suggests that “Realtime also advocates for a limitation absent from the claims – that a system must switch from an encoder with a relatively slow compression rate to an encoder having a faster rate of



compression.” Rep. 8. Realtime made no such argument. Rather, the POR offered the specification’s description of switching to a faster encoder to increase throughput as an example of how the claimed system uses the predictable relationships among the speeds of the encoders to increase throughput. POR 19-21. Similarly, Realtime did not argue that it would be “beneficial only to switch from a slower compression rate to a faster compression rate.” Rep. 8. Rather, the POR explained that switching to a slower compression would exacerbate the bottleneck *in the situation where the speed of the encoder is causing the bottleneck*. See POR 3, 19-21. That is the situation in which the specification describes using a faster encoder to increase throughput. See, e.g., Ex. 1001 at 8:12-18, 14:14-24. The Board should reject the Reply’s attempt to erect a strawman.

Finally, Petitioner contends that the definition of “configured to”—supported by caselaw and the specification’s usage of the term—is somehow “nebulous” because it “cannot be met by ... a difference in compression rates arising as a side effect of some other design choice.” Rep. 7. But the Reply does not explain why the requirement of purposeful design with respect to the encoders’ compression rates is too nebulous. To the contrary, the Federal Circuit has equated “adapted to” and “configured to” as meaning “configured to accomplish the specified objective” of the claim, which would likewise exclude any side effects from some other design choice. *Aspex Eyewear*, 672 F.3d at 1349.

Finally, Petitioner makes no attempt to address the additional Federal Circuit and district court cases presented by Patent Owner, which also interpret “configured to” to require purposeful design. *See* POR 18-19.

Accordingly, the Board should reject Petitioner’s attempt to read “configured to” out of the claims.

**III. The Reply fails to show that Imai, Pauls or their combination renders obvious limitation 1[B]**

As explained in the POR, limitation 1[B] requires (1) “a first asymmetric data compression encoder” that is (2) designed to (3) compress more input data per unit of time than (4) “a second asymmetric data compression encoder.” POR 17-21. The Reply fails to show that those requirements are disclosed in the prior art.

The Reply again points to Imai’s disclosure in paragraph [0067] of “a method which requires a larger amount of computation for decoding.” Rep. 3-4. But as Patent Owner’s response explained, *compression* rate is not defined by the speed or computation necessary for *decoding*. POR 28. Similarly, Petitioner cannot argue that Imai discloses that “ATRAC is given as an example of a faster compression rate encoder” based on Imai’s disclosure that ATRAC is an “example of the coding method, which requires not so large amount of computation for *decoding*.” Rep. 4 (emphasis added).

Dr. Zeger's statement that "execution speed" is a measure of the speed of data processing is not to the contrary. Rep. 4 ("Realtime cannot dispute that this evidence teaches using encoders with different execution speeds because Dr. Zeger admitted that the plain and ordinary meaning of execution speed of a compression algorithm relates to measuring the amount of computation."). Imai's disclosure is that the system should include methods that differ in the amount of computation for "decoding" and thus the relevant execution speed is that of the *decoder*. "compression rate" measures the speed of the *encoder*. POR 28.

To the extent the Reply argues that Imai's parenthetical reference, "(such a method usually also requires a larger amount of computation for coding)" discloses limitation 1[B], that argument should be disregarded because it was not included in the Petition. *See* Pet. 20-23 (arguing that Imai discloses "compression rate" limitation without relying on parenthetical reference to amount of computation for coding); 37 C.F.R. § 42.23(b) ("A reply may only respond to arguments raised in the corresponding opposition, patent owner preliminary response, or patent owner response."); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,767 (Aug. 14, 2102) ("[A] reply that raises a new issue or belatedly presents evidence will not be considered and may be returned.").

In any event, the parenthetical does not teach limitation 1[B]. First, the parenthetical's equation of the amount of computation for encoding and decoding

suggests it is describing symmetric algorithms. Ex. 1005 at [0067] (“a method which requires a larger amount of computation for decoding (such a method usually also requires a larger amount of computation for coding)”). By contrast, the limitation 1[B] specifically requires “a first *asymmetric* data compression encoder . . . configured to compress . . . at a higher data compression rate than a second *asymmetric* data compression encoder.” And the Petition argues that the term “asymmetric data compression encoder” means “encoder(s) configured to utilize a compression algorithm in which the execution time for the compression and decompression routines differ significantly.” Pet. 7. Thus, Imai’s parenthetical is not describing an encoder that could meet the limitations of 1[B].

Second, Imai does not disclose that the system *should* include encoders that differ in their “amount of computation for coding.” Rather, it discloses that the system *should* include encoders that differ in the “amount of computation for *decoding*” and that those encoders will often also differ in the amount of computation for coding. Ex. 1005 at [0067] (“a method which requires a larger amount of computation for *decoding* (such a method *usually also* requires a larger amount of computation for coding)”) (emphasis added). Thus, the parenthetical likewise fails to disclose a system with (1) “a first asymmetric data compression encoder” that is (2) designed to (3) compress more input data per unit of time than (4) “a second asymmetric data compression encoder” as limitation 1[B] requires.

The Reply further implies that Realtime has imposed a requirement that the “compression rate” limitations of 1[B] be disclosed “*in haec verba*.” Rep. 3 (“Realtime cannot demand that the data compression rate limitations (1[b]) be shown *in haec verba* because its expert admits that ‘data compression rate’ is not a commonly-used term . . .”). But Realtime does not argue that the prior art fails to disclose the term, “compression rate,” but rather that it fails to disclose the claimed invention in *any terms*. See POR 22-39. In fact, the POR specifically faults the Petition for focusing on Imai’s usage of the term “compression rate” to refer to a concept different from how “compression rate” is used in the claims. POR 25-27.

The Reply also argues Imai’s disclosure of “ATRAC2 encoders that operate at different bitrates” discloses limitation 1[B] because “Imai’s differing rates indicate that the different encoders are operating at different data compression rates.” Rep. 5. That is a new argument and should be disregarded. See 37 C.F.R. § 42.23(b). The Petition argued that the disclosed bitrates *themselves* were the different compression rates: “Imai explains that ATRAC 2 can encode at various compression rates (*e.g.*, ‘64 Kbps, 32K bps, [sic] 24 Kbps’).” Pet. 22 (emphasis added). The use of “*e.g.*” before the bitrates makes the nature of the argument clear. Now that Dr. Storer has contradicted the Petition’s argument, POR at 28-30, the Reply switches tack.

The Reply's new argument is also incorrect because achieving different output bitrates by modifying an encoder's compression rate would prevent Imai from achieving its stated goal: encoding in real time, as Dr. Zeger explained. Ex. 2002 at ¶¶ 81-96. Thus, Dr. Storer's suggestion in paragraph 141 of his declaration would break Imai because the transmitted information would not be reproduceable in real time. *Id.*

The Reply also argues that Dr. Zeger's statements about a "general relationship between data compression rate . . . and the output rate," show that the compression rates of the various encoders would differ in Imai and Pauls. Rep. 5, 6. However, as the quoted portion of Dr. Zeger's testimony indicates, faster compression rates produce higher output rates "***at a given compression ratio.***" Ex. 1029 at 148:13-24 (emphasis added). Where—as in Imai and Pauls—the system obtains varying output bitrates by modifying the compression *ratio*, POR 24-40, the differing output bitrates do not necessarily result from any difference in compression rate. Dr. Zeger's statement is not to the contrary.

Finally to the extent there exist any differences in the compression rates of the Imai's or Pauls encoders, those would be chance side effects of the choice to include multiple encoders because of their different compression ratios, which would not meet limitation 1[B]. *See* POR 17-24, 34-35, 39-40. Petitioner points to

no indication that any resulting differences in compression rates would be by design.

The Reply also argues that Pauls discloses limitation 1[B] because of its references to different encoders, compression ratios, and output bitrates. Rep. 6-7. As explained in the POR, none of those disclosures pertain to compression rate. POR 36-40.

Next, the Reply relies on the Board previously crediting Dr. Storer's testimony that a POSITA's knowledge "concerning the performance of well-known H.263, MPEG, and MPEG2 encoders" would be sufficient to disclose limitation 1[B]. Rep. 6-7 (citing Ex. 1003 ¶¶176-78). But as the POR explained, Dr. Storer later contradicted his testimony in paragraphs ¶¶176-78 that a POSITA would know the relative compression rates of those encoders by refusing to state which of any of the encoders named in Imai or Pauls would be faster than any other. POR 11-16. In particular, while Dr. Storer's ¶ 178 implies that H.263 typically has a lower compression rate than MPEG because it has an "input video data rate appreciably lower than . . . used with an MPEG or MPEG 2 encoder," he refused to say on cross examination whether H.263 or MPEG encoders were typically faster. Ex. 2003 at 96:19-97:5 ("[Y]ou could very well have a faster -- an H.263 coder that was faster than -- they worked faster on the same data as an MPEG coder and vice versa -- okay?"). The Reply makes no attempt to address Dr.

Storer's refusal to provide the relative compression rates of any encoder. The Board should not credit Dr. Storer's testimony that a POSITA would know the compression rates of any encoder when he refuses to provide the relative compression rates after repeated questioning.

The Reply also relies on the Board's reasoning that because "Imai specifically discloses that the encoders are constructed to encode the audio signal with different coding methods from each other" "the different rates of encoding would not be happenstance." Rep. 10 (citing ID at 19). As the POR explains, any difference in compression rates arising from the choice to include multiple encoders because they have different compression *ratios* or output bitrates cannot satisfy limitation 1[B] because the resulting variation in compression rates is a chance side effect of the choice to include multiple encoders for some other reason—their compression ratios or output bitrates. POR 17-24, 34-35, 39-40. Petitioner therefore cannot rely on prior art disclosures of including multiple encoders without regard to their compression rates.

The Reply also quotes several paragraphs of Dr. Storer's deposition testimony in order to argue that Imai "takes into consideration both speed and compression ratio and other factors." Rep. 11-13. But Dr. Storer's testimony is unsupported because he never points to anything in Imai that discloses taking compression rate into consideration. The Board should reject Dr. Storer's attempt



to argue that compression rate is an important consideration in Imai while failing to point to anything from Imai describing or even *mentioning* the desirability of including encoders based on their compression rates.

The Reply also criticizes the POR's explanation of why Dr. Storer's suggested modification is inconsistent with Imai's purpose. It states, "the opinions Realtime points to describe one way of modifying the compression rate of an encoder, not Dr. Storer's opinion for how Imai teaches switching between encoders." Rep. 12-13. But Realtime's argument is that Dr. Storer's suggested modification—"adjusting the output rate of the compression encoder . . . particularly if the compression ratio of the encoder is fixed," Pet. 22-23—is inconsistent with the way Imai teaches switching between encoders: Imai teaches compressing the data *more* not faster or slower. POR 30-35. The POR argued that any attempt to modify the compression rate of the encoder while keeping the compression ratio fixed would be ineffective—regardless of how that is done. *Id.* Notably, the Reply does not dispute the ineffectiveness of Dr. Storer's suggested modification.

Finally, the Reply reiterates its argument that the prior art discloses limitation 1[B] merely because it teaches including multiple encoders, and it is "exceedingly unlikely" that those encoders will all have identical compression rates. Rep. 13-16. As explained in the POR, differences in compression rates that

arise as a side effect of including multiple encoders to address multiple data types, compression ratios, or output bitrates cannot meet limitation 1[B]. 17-24, 34-35, 39-40. As with the Petition, the Reply points to no indication from the prior art that Imai or Pauls would use encoders with different compression rates *because they are designed to have different compression rates*. Petitioner thus cannot show that the prior art discloses limitation 1[B].

**IV. The Reply fails to demonstrate that the Petition established a motivation to combine Imai and Pauls**

It is not sufficient to allege that the prior art *could* be combined; rather, the petition must show why it *would* be combined. *Personal Web*, 848 F.3d at 993-94 (“Obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”) (emphasis original; internal citations and quotations omitted).

In its Response, Patent Owner demonstrated that the Petition does not explain why a POSITA would use the particular encoders mentioned in Pauls when modifying Imai to compress video data. POR 41-50. The POR explained that the Petition’s purported motivation to combine—based on (1) Imai’s suggestion that its teachings could be combined with video encoders, (2) similarities between the references, and (3) the alleged simplicity of the modification—amounted only to a

reasons why a POSITA would “look towards” Pauls and not any reason why a POSITA would make the suggested combination: including Pauls’ particular encoders in Imai’s system. *Id.*

Petitioner’s Reply does not address those criticisms, and instead only repeats that (1) Imai indicates that its teachings are applicable to video, (2) Pauls is similar to Imai, and (3) Pauls discloses video encoders. Rep. 16-17. The Board should thus conclude that the Petition does not provide any reason why a POSITA *would* make the proposed combination.

Petitioner also attempts to distinguish *Personal Web* on the grounds that the combination there was more complicated than Petitioner’s. Rep. 19-20 (“Here, the combination simply substitutes one element from a similar technology . . .”). But *Personal Web*’s holding pertains to the definition of the motivation to combine in the obviousness inquiry; it is not limited to only complex combinations. *See* 848 F.3d at 993-94 (“Obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations . . .”) (emphasis original; internal citations and quotations omitted). Put simply, by alleging that a POSITA would only “look towards” Pauls, the Petition alleges only that a POSITA *could have* included Pauls’ encoders in Imai. A proper motivation to combine includes an explanation of why a POSITA *would have* done so. *Id.*

Ground 3 therefore fails for the additional reason that it contains no reason a POSITA *would* make the combination it proposes.

**V. The Petition does not address the tradeoffs inherent in its motivation to modify Pauls's encoders**

A mere motivation to *consider* the *possibility* of a particular combination is not adequate evidence of a motivation to *combine* the prior art in the manner necessary to arrive at the claimed invention. *Personal Web Tech. v. Apple*, 848 F.3d at 993-94 (“Obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”) (emphasis original; internal citations and quotations omitted).

A motivation to combine cannot be established where the combination would result in tradeoffs, and the petition fails to consider—much less evaluate—the countervailing harms or losses from the proposed tradeoff. *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 (Fed. Cir. 2000) (“Trade-offs often concern what is feasible, not what is, on balance, desirable. Motivation to combine requires the latter.”). Thus, “the benefits, both lost and gained, should be weighed against one another” before a motivation to combine can be found. *Id.* at 1349 n.8.

The POR explained that modifying Pauls' encoders to use an arithmetic mode or include an additional arithmetic encoder would entail costs in the form of

reduced speed and compatibility, and that the Petition provides no explanation for why a POSITA would make the alleged modifications despite those disadvantages. POR 54-57. The Reply provides no explanation of why a POSITA would make the modification in light of the costs. Instead, Petitioner argues that it has no burden to justify its motivation to combine because the caselaw cited in the POR is inapplicable. Rep. 17-19. Petitioner's interpretation of the caselaw is again incorrect.

*First*, the Reply argues that “*Winner* was decided under the TSM test of yore . . . and its analysis pertains to an obsolete approach to the obviousness inquiry” and that it imposes “the same sort of ‘rigid rule’ that improperly limits the questions of obviousness that the Supreme Court rejected in *KSR*.” Rep. 18. However, *KSR* explicitly stated that it was not calling into question all Federal Circuit caselaw under the TSM test. 550 U.S. at 422. *KSR* specifically listed conceptions of the TSM test that allowed implicit teachings to constitute a motivation to combine as examples of “broader conceptions[s] of the TSM test” that were not called into question. *Id.* (listing as examples “Our suggestion test is in actuality quite flexible and not only permits, but requires, consideration of common knowledge and common sense” and “There is flexibility in our obviousness jurisprudence because a motivation may be found implicitly in the prior art. We do not have a rigid test that requires an actual teaching to combine . .

.”). And the *Winner* Court applied such a broad conception of the TSM test:

“Evidence of a suggestion, teaching, or motivation to combine prior art references may flow, inter alia, from the references themselves, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved.” 202 F.3d at 1348. Thus, *KSR* does not limit *Winner*.

Moreover *Winner*'s conclusion that a motivation to combine should address tradeoffs is based on the notion that “Trade-offs often concern what is feasible, not what is, on balance, desirable. Motivation to combine requires the latter.” *Id.* at 1349. That understanding of motivation to combine is equivalent to the Federal Circuit's post-*KSR* understanding. *See, e.g., Personal Web*, 848 F.3d at 993-94 (Fed. Cir. 2017) (“Obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”) (emphasis original; internal citations and quotations omitted). Thus, *Winner* is entirely consistent with *KSR*.

***Second***, the Reply argues that “Realtime distorts [*Winner*]” because the Court's “call for ‘benefits, both lost and gained, should be weighed against one another’ is a caution not to ignore the benefits of making a combination rather than dictating a rigid balancing test.” Rep. 18. But Realtime does not argue that the benefits should be ignored. Rather, the POR explained that the Petition ignores the

*costs*. POR 55-57. *Winner* states that a proper motivation to combine should address “*both*.” 202 F.3d at 1349 n.8. (“Instead, the benefits, both lost and gained, should be weighed against one another.”). The Petition does not address the admitted costs of its modification, and the Reply does not argue otherwise.

The Reply also contends that *Apple v. Realtime Data* is inapplicable because the patent owner in that case “provided evidence . . . which contradicted the petitioner’s rationale for combination.” Rep. 19. But here too, Patent Owner has provided evidence—Petitioner’s own evidence—that contradicts its motivation to combine by pointing to substantial downsides in the form of reduced speed and compatibility. POR 55-57. In *Apple*, the petitioner sought to justify the downside of its suggested modification (the need to use more RAM) on the basis that the tradeoff would be “cost effective.” IPR2016-01737, Paper 57 at 58. The Board rejected the petitioner’s rationale because the justification of the tradeoff was proven inadequate. *Id.* at 58-59. Here, Petitioner is in a worse position than in *Apple* because it has not even *attempted* to justify the tradeoff. There is therefore no justification for Patent Owner to rebut because Petitioner never met its initial burden to explain why a POSITA actually would make the combination in light of the costs. Petitioner’s attempt to distinguish *Apple* thus fails as well.

The Board should thus reject the Petition’s motivation as unsupported in light of its failure to address the admitted costs of its suggested modifications.

**VI. The Reply's belated attempt to allege obviousness of Claim 20's limitations must be rejected**

A petition must state its theory of unpatentability on a claim by claim basis, with precision as to each claim. *See, e.g.*, 37 C.F.R. § 42.104(b)(4). Moreover, a reply may not introduce new arguments, evidence, or theories of invalidity that were not included in the petition. *See* 37 C.F.R. § 42.23(b) (“A reply may only respond to arguments raised in the corresponding opposition, patent owner preliminary response, or patent owner response.”); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,767 (Aug. 14, 2102) (“[A] reply that raises a new issue or belatedly presents evidence will not be considered and may be returned.”). Indeed, the Supreme Court’s decision in *SAS v. Iancu* makes clear that arguments not contained in the petition itself cannot provide a basis for unpatentability. *SAS Institute Inc. v. Iancu*, 138 S.Ct. 1348, 1355 (Apr. 24, 2018) (explaining that *inter partes* review is “guided by a petition describing ‘each claim challenged’ and ‘the grounds on which the challenge to each claim is based’” and that the petition “define[s] the contours of the proceeding”) (quoting 35 U.S.C. § 312(a)(3)).

As explained in the POR, the Petition does not allege obviousness of each of Claim 20’s limitations and must therefore be rejected as to the claims that depend from Claim 20. POR 58-60. In fact, the Petition erroneously stated that Claims 1 and 20 only differed in a single limitation. Pet. 61 (“*Claim 20 and Claim 2 include*



*all limitations of independent Claim 1* and have the additional requirement that ‘at least one of the plurality of different asymmetric data compression encoders is configured to utilize an arithmetic algorithm.’”) (emphasis added). The Petition therefore did not allege obviousness of Claim 20’s remaining limitations that differ from those of Claim 1, such as Claim 20’s requirement of “a plurality of *video* data compression encoders; wherein” “a first *video* data compression encoder . . . is configured to compress at a *higher compression ratio* than a second data compression encoder . . . .” *See* POR 58-60.

In a belated attempt to cure its failure to properly allege obviousness, the Reply now seeks to make its case by pointing to parts of the Petition and Dr. Storer’s declaration that allege obviousness of Claim 1. Rep. 20-22. Notably, the Reply does not point to any part of the Petition that alleges obviousness of the additional limitations of Claim 20, confirming that no such allegations of obviousness exist. With respect to its belated attempt to show that JPEG is a video encoder, the Reply *does not cite to the Petition at all*—it instead cites to evidence buried in various exhibits to try to make its case. Rep. 22 (citing Exs. 1003, 1025, and 1010). Petitioner’s attempt to introduce those arguments in its Reply are improper at this late stage.

Simply put, it is the petition that “define[s] the contours of the proceeding,” *SAS Institute*, 138 S.Ct. at 1355, and the instant Petition did not allege that the

additional limitations of Claim 20 were obvious. Petitioner thus cannot rely on new arguments in its Reply to obtain unpatentability here. *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.* 821 F.3d 1359, 1369 (“[T]he expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute.”). Accordingly, the Petition must fail with respect to the claims that depend from Claim 20.

**VII. The Reply confirms that the Petition does not explain *how* a POSITA would combine Chao with Imai and Pauls**

The POR explained that Ground 4 did not state *how* a Chao would be combined with Imai and Pauls because it does not indicate whether Chao would operate as the “first” or “second” encoder recited in each of the challenged claims or which encoders in the prior art would be included in the combination. POR 51-54. The Reply offers no further illumination as to how the combined system “would operate or read on” the claims as required to show obviousness. *ActiveVideo*, 694 F.3d at 1327-28. Accordingly, the Board should reject Ground 4 for that additional reason.

Instead, the Reply notes that “the claims do not require the arithmetic algorithm to be any particular encoder.” Rep. 23. But the claims *do* require the recited “first” and “second” encoders to have different characteristics apart from whether they are arithmetic; they are not interchangeable. POR 10-11 (explaining

requirements of encoders of Claim 1, from which Claims 2, 10, and 11 depend); Cl. 20[D] (requiring different characteristics with respect to compression ratio configuration). Thus, the Board cannot evaluate the combination without the information the Reply refuses to provide.

The Reply also argues that obviousness does not require a “physical substitution of elements” but rather a determination of “what the combined teaching of the references would have suggested” to a POSITA. Rep. 23. However, the Petition has not said “what the combined teachings of the references would have suggested” because it has not taken the necessary steps of saying how the resulting combination “would operate or read on” the claims. *ActiveVideo*, 694 F.3d at 1327-28. The unresolved question of which encoders in the claims would be fulfilled by Chao or some other modified encoder remains relevant to determining whether the resulting combination taught by the art—whatever it is—would read on the limitations of each specific encoder recited in the claims. The Board simply cannot make a determination of obviousness without that information and should therefore reject Ground 4 for this additional reason.

### **VIII. Conclusion**

For the reasons above, the Board should uphold the patentability of all challenged claims.

Respectfully submitted,

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Date: September 6, 2019

**CERTIFICATION OF WORD COUNT**

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S SUR-REPLY** specified in 37 C.F.R. § 42.24 have 5,593 words, in compliance with the 5,600 word limit set forth in 37 C.F.R. § 42.24(b)(1). This word count was prepared using Microsoft Word 365.

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**CERTIFICATION OF SERVICE**

The undersigned hereby certifies that the foregoing **PATENT OWNER'S SUR-REPLY** and related exhibits were served electronically via e-mail on September 6, 2019, on the following counsel of record for Petitioners:

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