

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BMW OF NORTH AMERICA, LLC AND MERCEDES-BENZ USA, LLC,
Petitioners

v.

Stragent, LLC,
Patent Owner

Case IPR2021-00417
U.S. Patent 10,248,477

STRAGENT, LLC'S PATENT OWNER SUR-REPLY

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I. DR. MILLER APPLIED THE CORRECT LAW

Petitioner erroneously asserts that Dr. Miller ignored and misapplied the test for obviousness, citing his testimony that he did not consider MPEP §2141.01(a). (Reply 4). Even if experts are ever required to be familiar with the MPEP, there was no reason for Dr. Miller to consider that section of the MPEP as it addresses only whether prior art should be considered analogous or in the same field of endeavor. The MPEP section is irrelevant because Dr. Miller expressly acknowledged that Miesterfeld and Wong were in the same field. (Ex.2001 ¶94).

The legal background of Dr. Miller's testimony is covered in MPEP §2143.01, "Suggestion or Motivation To Modify the References." Petitioner has not even addressed, much less demonstrated, that Dr. Miller did not follow the law set forth in that relevant section of the MPEP.

II. PETITIONER MISSTATES PATENT OWNER'S ARGUMENT

Petitioner misstates Patent Owner's argument as being that Miesterfeld and Wong are non-analogous or in different fields of endeavor than the '477 Patent claims. (Reply 3). To the contrary, Patent Owner acknowledged that "both Miesterfeld and Wong involve automotive systems." (Response 17). Patent Owner's argument was that Petitioner failed to demonstrate that a POSITA would have been motivated to combine the two references, even though they were both in the same field, because that combination would have changed, if not eviscerated,

Miesterfeld’s objectives and approach. Indeed, the full sentence from which Petitioner excerpted was “a POSITA would have had any motivation to combine Miesterfeld and Wong, and, in fact, the two references are not *truly* in the same technical field.” (Response 16).

III. PETITIONER MISSTATES THE LAW ON MOTIVATION

Petitioner asserts that “Stragent improperly focuses on purported differences between Miesterfeld and Wong—not whether each prior art is from the same field of endeavor claimed in the ‘477 patent.” (Reply 4). Petitioner’s statement of the law is wrong, because the well-established and unequivocal law is that “fundamental differences between the references are central to th[e] motivation to combine inquiry” *Adidas AG v. Nike, Inc.*, 963 F.3d 1355, 1359 (Fed. Cir. 2020). “There can be no motivation to modify the prior art where doing so would destroy the basic objective of the prior art.” *Chemours Co. FC, LLC v. Daikin Indus., Ltd.*, 4 F.4th 1370, 1376 (Fed. Cir. 2021) (quoting *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016)). A “change in a reference’s principle of operation is unlikely to motivate a person of ordinary skill to pursue a combination with that reference.” *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App’x 755, 759 (Fed. Cir. 2015). *See also In re Ratti*, 270 F.2d 810, 813 (CCPA 1959) (“This suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [reference] as well as a

change in the basic principles under which the [reference's] construction was designed to operate.”).

The governing law is summarized in the MPEP as follows:

If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.

And, further:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.

(MPEP §2143.01).

Thus the law requires that the Board and parties focus on precisely the issue that Petitioner argues the Board should ignore -- the differences between Miesterfeld and Wong.

IV. PETITIONER HAS NOT PROVEN MOTIVATION TO ADD WONG’S WINDOWS CE OPERATING SYSTEM TO MIESTERFELD

1. Mutual Incompatibility Between Miesterfeld and Wong

Starting with limitation 1[a], Petitioner’s entire case rests on its argument that a POSITA would have been motivated to combine Miesterfeld with Wong’s Windows CE operating system, and would make all the necessary changes to accommodate the CE OS. In its Response, Patent Owner demonstrated in great detail that there could be no motivation for such a combination as it would result in the opposite of Miesterfeld’s invention.

Yet, Petitioner argues that “Stragent’s Response provides no evidence other than conclusory and unsupported opinions from its expert, Dr. Miller.” (Reply 2). Petitioner does not do justice to Patent Owner’s showing. The following is a summary of the fundamental differences between the Miesterfeld and Wong, and, thus, the many reasons why their combination would destroy the basic objective of Miesterfeld and change its principle of operation. *Adidas AG, supra; Chemours, supra; MPEP §2143.01.*

First, the respective objectives of Miesterfeld and Wong are antithetical:

a. Miesterfeld’s sole objective was to allow “data exchange between vehicle data buses and consumer product data buses.” (9:46-49; Response 40). Miesterfeld’s system was to provide a “gateway for enabling data exchange between vehicle systems and third party systems,” and he discussed only providing access to such “third-party add-ons.” (1:33-2:19; 3:13-16; Exh.2001 ¶¶95-97) . Petitioner acknowledges that Miesterfeld’s purpose was to allow “data exchange between ... vehicle systems and third-party systems.” (Reply 5).

b. Wong is the opposite, being directed to communication between different automotive systems without any reference to third-party devices.

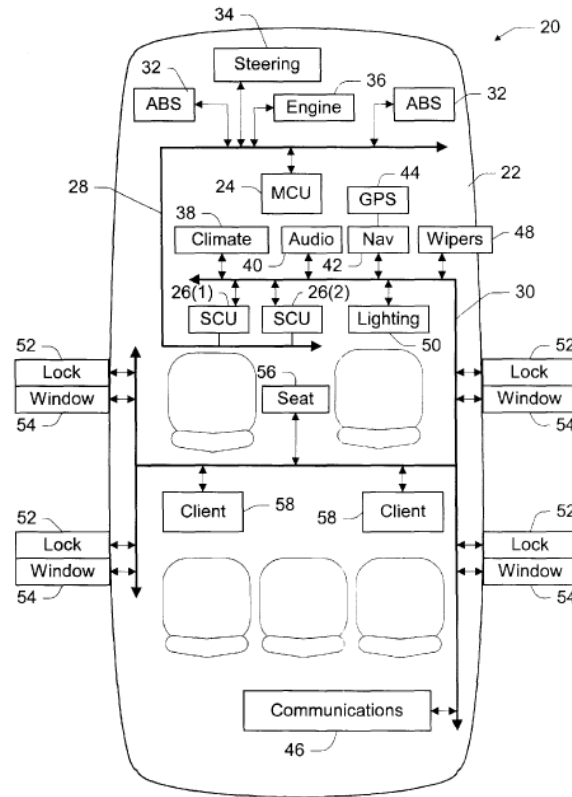


Fig. 1

Petitioner has not even argued, much less shown, that Wong permitted third-party devices to access the automotive networks.

c. Miesterfeld's "[ITS] gateway for enabling data exchange between vehicle systems and third party systems" included only two busses -- the ITS bus for the third-party "add-ons" and a VDB bus to connect to automotive systems. (3:13-16; Exh.2001 ¶¶ 73-74, 96, 102, 148-51, 154). Miesterfeld said nothing about data exchange between different automotive networks. Miesterfeld referred to his invention as the "ITS gateway" (2:66). Miesterfeld did not provide for any other busses.

d. To the opposite, Wong provided for communication between multiple cluster controllers involving multiple buses, but all the buses were automotive. Wong does not address buses for communication with third-party add-ons.

e. Given the risk presented by the third-party (ITS) bus, Miesterfeld mandated that ITS would have “limited access to the vehicle data bus so as to not interfere with operation of the vehicle.” (1:48-51; Response 40).

f. Directly contrary to Miesterfeld, Wong provided a system by which automotive systems communicated without any limitation.

g. Miesterfeld is directed to the exchange of data between the VDB and ITS data busses, albeit in limited form. (3:13-16; Exh.2001 ¶¶ 73-74, 96, 102, 148-51, 154).

h. Wong, on the other hand, does not disclose the exchange of any data. (Exh.2001 ¶¶ 91; Exh.1054/Exh.2010¹ at 130:19-131:23).

i. If Petitioner is correct that Miesterfeld discloses two networks using different protocols, then Wong is further distinguished because Wong

¹ As of the date of this filing, Petitioner has failed to correct its Exh.1054 with the sworn transcript of the deposition testimony of Dr. Jeffrey Miller. Thus, Patent Owner has included the sworn version of the deposition testimony as Exh.2010.

teaches that all the busses operate on a common protocol. (Exh.2001 ¶¶93; Wong at 5:32-42).

Given their different contradictory objectives, Miesterfeld's and Wong's implementations and systems are mutually incompatible:

j. Because Miesterfeld wanted to limit access between the third-party ITS and the automobile's VDB system, Miesterfeld implemented his invention on a simple, low-capacity, low-cost HIP7030A2 microcontroller which had only 176 Bytes of RAM and 2110 Bytes of User ROM, "dealing with operations at the bit level, where he is sequentially parsing each bit in each byte of a message." (Exh.2001 ¶¶8; Exh.2008). Miesterfeld chose not to implement various other technologies that were available. (Exh.2001 ¶98).

k. Contrastingly, Wong utilized a series of controllers, each of which was a highly-functional "general-purpose computing device." (2:62-63; 6:3; 6:10-22; Exh.2001 ¶¶99-100). Wong's implementation was the opposite of Miesterfeld's approach of simplicity, low-capacity and low cost. (Exh.2001 ¶¶99-100).

l. Given his objectives of limiting ITS' access and, thus, protecting the VDB from third-party interference, Miesterfeld had no need for, and did not disclose, any processor or operating system. (Exh.2001 ¶¶ 90, 98; Exh.2008; Response 19).

m. Contrastingly, each of Wong's controllers is a highly-functional "general-purpose computing device" that included a processor and an operating system such as Windows CE to support a wide variety of software applications and hardware peripherals. All these components were required to run Windows CE. (2:62-63; 6:3; 6:10-22).

n. Miesterfeld did not cluster devices or provide for separate cluster controllers for them, but all automotive devices were either on the VDB and the "third-party add-ons" were on the ITS.

o. Wong's interest lay a highly-functional "automobile information system that facilitates communication within clusters of components and among various clusters" with each cluster having a "controller that provides a platform for supporting many diverse components." (2:41-44).

p. Given his objectives of limiting ITS' access and, thus, protecting the VDB from third-party interference, Miesterfeld required and disclosed only volatile "random access memory (SPI RAM) 64." (4:3).

q. Given his objectives and implementations, Wong required and disclosed "non-volatile memory 104 (e.g., ROM, Flash, hard disk, etc.)" which would be required to implement the Windows CE OS. (6:4-6).

2. Petitioner's Reply Is Unsupported By Record

Petitioner attempts to get around the plain fact that Miesterfeld and Wong are poles apart by suggesting some commonality of objectives between Miesterfeld and Wong. (Reply 2-6). The effort fails because Petitioner's arguments contradict the undisputed record. Thus, Petitioner argues that "Miesterfeld and Wong[] shared goals of facilitating capability and data exchange between different vehicle systems and third-party systems in a vehicle network." (Reply 6). Petitioner errs because, first, there is no record that Wong contemplated, much less addressed, third-party systems. Petitioner further errs because Wong does not provide for exchange of data. Indeed, Dr. Miller testified, without any challenge, that Wong does not disclose exchanging data:

Q: And, in a simple way, can you tell us whether Wong, in your view, in looking at these cluster controllers and the buses, does Wong disclose a system where information from one network protocol is stored and then is shared with another network using a different protocol?

[Dr. Miller]: No. My understanding of how Wong works may be best explained through an example.

So if we have two cluster controllers where one of the modules attached to one of the controllers is a speed module, and another module attached to a different cluster controller is the audio module, the speed module would transmit to the cluster controller responsible for it the current speed. If the current speed was above, let's say, 50 miles per hour, that cluster controller would then send a signal to the cluster controller that's responsible for the audio module to let it know that the speed has exceeded 50 miles per hour. That cluster controller would then send a signal to the audio module, telling it to increase the

volume by some number of decibels. That's an example. Now, the speed was never received by the audio module. The speed was never stored by the cluster controller. But, rather, the cluster controller responsible for the speed module used that data to then transmit a different message to the cluster controller responsible for the audio, that then sent a completely different signal with different data to the audio module.

(Exh.1054/Exh.2010 at 130:19-131:23).

Petitioner further asserts that Dr. Miller “ignore[ed] Miesterfeld’s teachings regarding authorized access.” (Reply 6). But nothing in Dr. Miller’s testimony cited by Petitioner supports Petitioner’s argument that Dr. Miller failed to consider the entirety of Miesterfeld’s teachings. Petitioner has not pointed to anything in Dr. Miller’s Declaration that is unsupported by the cited references, and Petitioner has not cited anything in the record that Dr. Miller should have considered but failed.

The remainder of Petitioner’s Reply comprises citing some generic statements about the compatibility of Miesterfeld and Wong, but none addresses the only relevant issue of whether a POSITA would combine Miesterfeld with Wong’s Windows CE system, together with the significant changes in hardware and applications that would be required to add Windows CE to Miesterfeld. Petitioner’s generalities cannot carry Petitioner’s burden of proving invalidity. Thus, in *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312 (Fed. Cir. 2012) the Court considered the testimony of an expert that was not

markedly different from that of Petitioner’s expert. (id. at 1328). The Court concluded:

This testimony is generic and bears no relation to any specific combination of prior art elements. It also fails to explain why a person of ordinary skill in the art would have combined elements from specific references in the way the claimed invention does.

(*Id.*) See also *Qualcomm Inc. v. Apple Inc.*, 24 F.4th 1367, 1377 (Fed. Cir. 2022) (Fed. Cir. 2022) (“We see no reversible error in the Board’s finding that Apple failed to explain why a skilled artisan at the time of the invention would have considered a relatively stable trip point important enough to combine [the references]”).

3. No Motivation to Combine Miesterfeld and Wong

Thus, incorporating Wong’s Windows CE system would require Miesterfeld to abandon his low-capacity microcontroller and system designed to provide limited access by “third-party add-ons” with a general purpose computing device, together with a processor and non-volatile memory, running Windows CE. Petitioner’s argument is akin to suggesting that a POSITA would have been motivated to substitute a Raspberry PI with an Apple Mac Pro.

Ironically, Miesterfeld’s interest was in allowing limited exchange of data between the VDB and ITS, and Petitioner would implement Wong’s system which had never considered third-party access and did not provide for exchange of data. Thus, the proverbial square peg in a round-hole.

Miesterfeld's and Wong's objectives and implementations are poles apart.

Petitioner's entire argument is that a POSITA would be motivated to convert Miesterfeld's limited access ITS gateway to a full-fledged computing device because it would afford far more functionality. But there is nothing in the record that suggests that a POSITA would see any benefit of all the greater functionality given the additional cost, both monetary and complexity, or that a POSITA would choose Wong's system which did no capacity to handle third-party add-ons or to exchange data – the very functions of why Miesterfeld designed the ITS gateway.

In any event, Petitioner's combination is impermissible because it would “would destroy the basic objective’ of the prior art.” *Chemours, supra*. The combination is also impermissible because Petitioner has not demonstrated that a POSITA would be motivated to make the combination given the drastic change in Miesterfeld's “principle of operation.” *Plas-Pak, supra*. The combination is also impermissible because the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [Miesterfeld] as well as a change in the basic principles under which the [Miesterfeld's] construction was designed to operate.” *In re Ratti, supra*. The combination is also impermissible because the “proposed modification would render [Miesterfeld] being modified unsatisfactory for its intended purpose” and “would change [Miesterfeld's] principle of operation.” MPEP §2143.01.

V. OTHER LIMITATIONS

A. Limitations 1[d] and 1[e]

Petitioner confirms that these limitations require the combination of Miesterfeld and Wong as set forth at pp. 3-10, *supra*. (Reply 6). Patent Owner had argued that, even if a POSITA would have combined Miesterfeld with Wong's Windows CE, the inclusion of the Windows CE's memory management would independently "eviscerate Miesterfeld's goals and system." (Response, 24-27).

Petitioner argues that Patent Owner has not demonstrated that Miesterfeld "taught away" from the combination. (Reply 7-8). But Patent Owner never argued "teaching away." To the contrary, the law precludes a finding of motivation to combine because the combination destroys Miesterfeld's basic objective, changes Miesterfeld's principle of operation and requires a substantial reconstruction and redesign of the elements shown in Miesterfeld. *Chemours, supra*; *Plas-Pak, supra*; *In re Ratti, supra*; MPEP §2143.01. That is the governing law addressed by Patent Owner's Response. "Teaching away" is a strawman argument.

Petitioner speculates that the CE's memory manager would provide various generic benefits. (Reply 7-8). The problem, however, that the benefits carry the cost of completely restructuring Miesterfeld's system. (pp. 3-10, *supra*).

Petitioner has not demonstrated that Grattan's memory management would be a

benefit in Miesterfeld's specific system, or that a POSITA would have weighed those benefits sufficient to outweigh the costs of its implementation.

Petitioner further argues that Miesterfeld did not "discourage use of the claimed memory manager," citing purported support. (Reply 8). The argument suffers two fatal errors. First, Petitioner's citations prove the opposite of Petitioner's argument. For example, Petitioner cites Miesterfeld's statement that "Preferably, memory 30 is allocated in a predetermined fashion so that predetermined vehicle parameters *{sic}* occupy predetermined memory locations, referred to as mailboxes." (3:26-28). Yet, CE's document manager would do the opposite of the above-described Miesterfeld preference.

A second problem with Petitioner's argument is that Miesterfeld expressly preferred to have memory "allocated in a predetermined fashion so that predetermined vehicle parameters occupy predetermined memory locations." (3:26-28; Figures 1, 4-6). Other than using the hindsight of the '477 Patent, Petitioner has not shown anything in the prior art or the knowledge of a POSITA that could have motivated the POSITA to perform the drastic surgery required by Petitioner's argument and implement a system directly contrary to Miesterfeld's stated reference. Petitioner has "failed to explain why a skilled artisan at the time of the invention would have considered [CE's memory management] important enough to combine the references." *Qualcomm, supra*.

B. Limitation 1[f] followed by Limitations 1[g]-1[m]

Patent Owner incorporated the October 1, 2021 decisions of the Board that considered this limitation under current law in the context of identical limitations in similar claims in a patent in the same family and in response to exactly the same evidence as Petitioner cites here. (Ex.2001 ¶¶118-19; Exhs. 2002, 2003, 2004; Response 28-29). The Board had held that Petitioner’s combination of prior art did not support the limitation. Petitioner has not addressed the Board’s prior decisions, and, thus, has conceded Patent Owner’s argument that limitation 1[f] is entirely missing in the prior art.

Petitioner argues that Patent Owner failed to consider Wong and Grattan. But that prior art was cited to and considered by the Board in the prior decisions, and, thus, was inherently included in the Board’s decision which Patent Owner incorporated.

Miesterfeld teaches that “[d]ata exchange ... occurs through ... random access memory (SPI RAM) 64,” i.e., volatile memory. (3:59-63). Petitioner has purported to show the benefits of the limitation, but that is irrelevant. Miesterfeld specifically preferred SPI RAM memory allocated in a predetermined fashion so that predetermined vehicle parameters occupy predetermined memory locations, referred to as mailboxes. (3:59-63; 3:26-28). Petitioner has failed to explain why

a POSITA would have chosen to overrule Miesterfeld's express preference as to this particular limitation. *Qualcomm, supra*.

C. Limitation 1[h]

Petitioner appears to concede the accuracy of Dr. Miller's explanation of Miesterfeld's system relative to this limitation, but then argues that the SRAD testing to determine whether the network could access the SPI RAM constitutes "issu[ing] a storage resource request in connection with a storage resource." (Reply 11).

While the language of the limitation is broad, nothing in Petitioner's Reply supports the conclusion that testing to determine whether the memory is already being accessed by another process constitutes a "request."

D. Limitation 1[m]

Petitioner misstates that "It is not disputed ... that it would have been obvious to implement Miesterfeld's first and second physical networks with FlexRay, CAN, and LIN." (Reply 12). Patent Owner has specifically disputed that proposition. (Response 37-47).

Petitioner's Reply further errs in portraying Miesterfeld's ITS as an automotive network. FlexRay, CAN and LIN are automotive busses because they control the automobile's internal applications. ('477 Patent 2:60-3:27). Miesterfeld termed his invention the "ITS gateway" because its sole function was to use the

ITS to provide third-party add-ons with limited access to the VDB. (Ex.2002 ¶¶74, 96-98; Miesterfeld 2:66-67, 3:9-17, 3:50; Response 37-42). ITS was not equivalent to VDB. (Response 38).

Petitioner contradicts both the record facts and the law in arguing that there is no record “demonstrating why a POSITA would have been discouraged or dissuaded from implementing Miesterfeld’s ITS automotive data bus with another automotive bus like FlexRay, CAN, and LIN associated with a different device or system.” (Reply 16). FlexRay, CAN and LIN are not “consumer product data buses” that is ITS. (Miesterfeld 9:48-49). Thus, there is a fundamental difference between the services provided by VDB (or FlexRay, CAN and LIN) and ITS.

Petitioner also errs because the law requires that Petitioner prove a motivation to make the specific combination, and not merely that it is possible to combine.

Qualcomm, supra. Further, Petitioner cannot prove motivation given that substituting a “consumer product data buses” with FlexRay, CAN or LIN “would [impermissibly] change [Miesterfeld’s] principle of operation,” destroy Miesterfeld’s basic objective, changes Miesterfeld’s principle of operation and requires a substantial reconstruction and redesign of the elements shown in Miesterfeld. *Chemours, supra; Plas-Pak, supra; In re Ratti, supra; MPEP* §2143.01.

Petitioner's Reply includes other errors. Petitioner argues that Miesterfeld discloses the sharing of data between different protocols because Miesterfeld discloses various protocols for both the VDB and ITS data buses. (Reply 15). While it is true that various protocols are cited, Miesterfeld never suggests that his system is capable of sharing data between networks comprising different protocols and never explains how one does that. (Ex.2001 ¶¶76, 82, 141-45).

Petitioner argues that gateways were known to connect networks of different protocols, and the Dr. Miller so admitted. (Reply 15-16). But, as Dr. Miller testified without any challenge, a gateway merely connects different networks, but does not provide for the sharing of data between different protocols:

[Dr. Miller]: A gateway is not going to have a need to store data so that another network that's connected to it can request the data. The gateway receives data from one network and merely forwards it along to another network that's connected to it, where both networks could be operating with the same protocol or different protocols.

Q: Can you give us an example of the type of gateways that existed, let's say, in this 1997 to 2003 time period?

A: Sure. So this was a time when the internet was becoming more popular, and gateways were used to connect local-area networks to wide-area networks. So, for example, having a local network at a company and having multiple computers on that network able to communicate on a single line that was going out to the internet, whether that be over DSL, T1, T3, any of the technologies at the time that existed for going out to the internet.

(Ex.1054/Ex.2010 at 132:14-133:9).

Finally, Petitioner argues that the '477 Patent claims do not require the

interchange if data between at least three networks. That is incorrect. Limitation 1[n] requires “interfaces for communication with each of FlexRay, Controller Area Network, and Local Interconnect Network networks,” and limitation 1[m] requires the sharing of data with at least one network “selected from the group consisting of [FlexRay, CAN and LIN], utilizing a network protocol different from a protocol of the first physical network.” The clear requirement of limitation 1[m] is that the ECU must have the capability of sharing data amongst at least the three FlexRay, CAN and LIN networks. Petitioner has never addressed, and therefore failed to prove, that any combination of prior art supports this limitation for this reason alone.

E. Limitation 1[n]

Petitioner still has not identified any prior art with interfaces for three automotive networks, and certainly not for all three of the FlexRay, CAN and LIN networks. Thus, Petitioner requires an expansion of the existing prior art whereby a third network interface would be added to Miesterfeld.

In support of this expansion, Petitioner’s argument remains a generic “it would be obvious ... based on combined teachings of Miesterfeld, Wense, and other record evidence.”² (Reply 17). That is not enough to support motivation to

² It is unclear what the “other record evidence refers to. Petitioner did not cite Exhs. 1047 and 1052 as prior art, and, generally, had not presented or analyzed the references. (Response 48).

revise Miesterfeld to replace Miesterfeld's ITS with an automotive bus, and then add a third bus selected from FlexRay, CAN and LIN. *Qualcomm, supra*.

Petitioner's only specific argument is an attempt to rewrite Miesterfeld as "contemplating that a vehicle may have three or more systems needing to communicate with each other, and a vehicle may have all three of FlexRay, CAN, and LIN networks for controlling different groups of devices and vehicle systems." (Reply 18). None of Petitioner's citations support Petitioner's argument, and it is telling that Petitioner does not actually quote Miesterfeld. Petitioner could not cite Miesterfeld, because Miesterfeld actually teaches the opposite of Petitioner's argument because Miesterfeld says that all the automobile devices are on the VDB and says nothing about multiple automobile buses or networks:

A typical vehicle 12, as shown, includes a vehicle data bus (VDB) 14. VDB 14 provides a mechanism for data exchange between one or plurality of devices 16, 18, one or both of which write data to or read data from VDB 14. VDB 14, and devices, 16, 18 are typically assembled as part of the vehicle and sold with the vehicle and control vehicle operations such as engine operation, transmission operation, instrumentation operation, and the like.

(3:1-8).

In short, Petitioner still does not provide any analysis of the issue beyond "virtual hand-waiving" citing nothing more than that Miesterfeld disclosed the VDB and ITS interfaces, and Wense disclosed FlexRay, CAN and LIN. Petitioner's argument is legally insufficient because has not pointed to anything

that would motivate a POSITA to (i) restructure Miesterfeld to add a third interface, and (ii) repudiate Miesterfeld's specific interest in the consumer product ITS by choosing FlexRay, CAN and LIN for all three interfaces. Petitioner has not shown motivation to perform the major restricting of Miesterfeld that would be entailed by replacing Miesterfeld's ITS bus or add a third FlexRay, CAN and LIN bus. *Chemours, supra; Plas-Pak, supra; In re Ratti, supra*; MPEP §2143.01.

F. Claim 2

Patent Owner's sole argument as to Claim 2 was that the Petition did not consider the correct construction of the term "bulletin board." (Response 56).

In response, Petitioner cites the Institution Decision's construction of "bulletin board." But the issue raised by the parties regarding the construction of this term has never been previously raised and was not considered in the Institution Decision. Further, the Institution Decision is not governing. "It is well established that the Board is not bound by any findings made in its Institution Decision." *Haag-Streit AG v. Eidolon Optical, LLC*, 840 F. App'x 561, 568 (Fed. Cir. 2021) (quoting *TriVascular, supra*, 812 F.3d at 1068). See also, *Fanduel, Inc. v. Interactive Games LLC*, 966 F.3d 1334, 1340–41 (Fed. Cir. 2020) ("we have encouraged the Board to change its view of the merits after further development of the record, ... if convinced its initial inclinations were wrong.") (quoting *TriVascular, supra*).

Petitioner largely ignores the Patent Owner’s argument in support of its claim construction. For example, Petitioner insists that the bulletin board has to be a database, but fail to provide any evidence contrary to Patent Owner’s showing that (i) the plain and ordinary meaning of “bulletin board” does not require a database; (ii) the specification refers to a “data structure”; and (iii) the ‘477 specification merely says that the bulletin board “*may*” be a database. (Response 9-11).

Petitioner’s only argument against construing a bulletin board as a data structure rather than a database is that the Patent Owner’s construction reads out “stores information” from the claims. (Reply at 21). Petitioner argument fails because Patent Owner’s construction refers to access to the “storage resource” which by definition stores information.

Miesterfeld may disclose a bulletin board as construed by Patent Owner, but the construction in the Institution Decision is, respectfully, incorrect and required Patent Owner to address the issue.

G. Claim 3

Petitioner’s Reply distorts Claim 3. Claim 3 reads: “The system of claim 2, wherein a complexity of the bulletin board grows linearly with a number of networks.” The claim requires that complexity grow linearly whether the system includes two, three or twenty networks. Petitioner’s argument that claim 1 requires sharing of data only between two networks is irrelevant.

Petitioner argues that Patent Owner has not presented “credible evidence” in support of its argument that Miesterfeld does not scale linearly. But the record is unchallenged that Miesterfeld could not scale linearly. (Exh.2001 ¶¶ 199-203; Response 57-58).

Petitioner’s argument is that Miesterfeld discloses a bulletin board, and that the ‘477 Patent teaches that the claim 3 limitation is an inherent feature of a bulletin board. (Reply 22). That is not correct. The proper construction of “bulletin board” is that it is “a data structure that may be accessed by a process of any network having access to the storage resource of the electronic control unit.” There is nothing in that construction that inherently incorporates claim 3’s limitation. The ‘477 Patent states that a “critically important feature of the bulletin board approach is that the complexity of the bulletin board grows linearly with the number of networks (as opposed to as $N(N-1)$ for the gateway approach).” (7:1-7). The inventor did not say that every bulletin board (as properly construed) would automatically meet the claim 3 limitation, but only that “the bulletin board” shown in the ‘477 Patent would meet the limitation.

Petitioner has not even attempted to demonstrate that adding a third or additional networks to Miesterfeld would meet Claim 3. Nothing in the record supports that a POSITA would be motivated to make this series of changes to the prior art. *Qualcomm, supra*.

H. Claim 4

Claim 4 (as well as Claims 11, 15, 22 and 26) include the limitation “a diagnostic mode that allows inspection of the system, while the ECU is running.” Petitioner relies solely on Bolling to meet this “diagnostic” limitation. But Bolling does not address diagnostics at all, and, indeed, Bolling never uses the word “diagnostics” or any equivalent thereof. To get around the absence of any prior art, Petitioner first challenges Patent Owner’s construction of term to mean inspection “of the health” of a system. (Reply 23). But nothing turns on whether the word “health” is included in the construction so long as it is clear that a diagnostic program determines whether a system is operating properly. (Exh.2001 ¶58; Exh.2007).

Petitioner’s main argument is that Bolling’s reference to “debugging” actually includes the disclosure of “a diagnostic mode that allows inspection of the system, while the electronic control unit is running.” Petitioner’s argument fails because it ignores that indisputable record that the “diagnostics” and “debugging” are different modes with “diagnostics.” First, Claims 11, 22 and 28 each require that the system include both “code for the ECU to run in a diagnostic mode that allows inspection of the system, while the electronic control unit is running” and, separately, “code to run in a debugging mode.” When claims include limitations to two separate elements, they should be construed as two distinguishable

components.

Second, as Dr. Miller testified and as shown in the record, technical dictionaries distinguish the two terms. (Exh.2001 ¶¶59; Exh.2007). Diagnostics determines whether a system is operating properly – i.e., determines the health of a system. (*Id.*) “Debugging” means to fix errors, and usual refers to correcting errors in a code. (*Id.*) Dr. Miller distinguished the two diagnostic and debugging modes. (Exh.2001 ¶¶58-63, 211-12). Additionally, after Patent Owner filed its Response, Dr. Miller testified that:

Debugging is a term used by programmers to fix bugs in a system. A bug is something in a system that is causing it to behave differently than expected. Debugging is the process that programmers use for fixing that operation.

And to be able to identify a bug and then fix it, you have to be able to run the program, see what’s wrong with it, make a potential fix, and then test it to see if that’s going to fix the bug.

(Exh.1054/Exh.2010 at 64:13-21).

Thus, the unchallenged record is that “diagnostics” and “debugging” are related, but clearly different, modes.

With the record contradicting its argument, Petitioner resorts to simply adding the words “i.e., diagnose” after quoting Bolling’s references to debugging. (Reply 23).

Petitioner next argues that “the ‘477 patent uses the term ‘diagnostic mode’ as a characterization of or to describe a function of the ‘emergency or debug

mode.’ 11:36-39.” (Reply 24). That is not what the specification says. While the specification could have been better phrased, the specification distinguishes the ““emergency or debug” mode and the “diagnostic mode.” There is nothing in the intrinsic record that suggests that the inventors were acting as lexicographers to redefine the terms “diagnostics” and “debugging” as those terms were used by persons skilled in the art.

I. Claim 5

Petitioner concedes that Bolling does not disclose Claim 5’s requirement that the *ECU run* in a debugging mode. It asserts that, in Petitioner’s world, a POSITA would have been motivated to (i) substitute Miesterfeld’s low-capacity microcontroller with a microprocessor capable of running Windows CE, (ii) add non-volatile memory, (iii) choose and install Windows CE, and then (iv) choose to run debugging while the ECU was running. Leaving to one side the lack of motivation for steps (i)-(iii), Petitioner still has not pointed to anything that supports the leap from Bolling’s discussion of debugging the CE program to running debugging while the ECU is running.

J. Claim 28

Petitioner ignored in its Petition and again in its Reply the difference in the language between claim 28 and all the other claims previously considered.

(Response 64). Petitioner has not presented any basis for the obviousness of this particular limitation.

VI. CONCLUSION

Patent Owner respectfully requests that Petitioner's challenges to the claims of the '477 Patent be denied in their entirety.

Dated: February 28, 2022

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that there are 5,600 words in this paper, excluding the portions exempted by 37 C.F.R. § 42.24(c). Accordingly, this Paper complies with the requirements of 37 C.F.R. § 42.24. This certification relies on the word count of the word-processing system used to prepare this paper.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. 42.6(e) and by the agreement of counsel for Petitioner, I certify that on February 28, 2022, I served a complete electronic copy of the foregoing on the Petitioner's lead and backup counsel at the following addresses:

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