

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BMW of North America, LLC,
Petitioner

v.

Michigan Motor Technologies LLC,
Patent Owner

Case IPR2023-01031
Patent No. 8,909,482

PATENT OWNER'S PRELIMINARY RESPONSE

Under 35 U.S.C. § 42.107

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2001	August 16, 2023, email from Neil A. Benchell to Brian Biggs
2002	November 2, 2023, email from Neil A. Benchell to Brian Biggs
2003	November 16, 2023, email from Brian Biggs to Jason Wejnert and Neil A. Benchell

Through the undersigned Counsel, Patent Owner, Michigan Motor Technologies LLC (“MMT”), submits the following Patent Owner Preliminary Response pursuant to 37 C.F.R. § 42.107(a). *See also* 37 C.F.R. § 42.107(b).

I. INTRODUCTION

Petitioners Mercedes-Benz USA, LLC¹ and BMW of North America, LLC. (“Petitioners”) filed a Petition for *Inter Partes* Review of U.S. Patent No. 8,909,482 (“the ’482 patent”) on June 6, 2023. (IPR2023-01031, Paper No. 2) (“Petition” or “Pet.”).) Patent Owner, MMT, respectfully requests that the Board deny the Petition because the ’482 has been invalidated as ineligible under 35 U.S.C. § 101 in two concurrent district court litigations, first in *Michigan Motor Technologies LLC, v Bayerische Motoren Werke AG*, and then in *BMW of North America, LLC*, Civil Action No. 1:22-cv-3804-SCS-MV on July 21, 2023. Patent Owner MMT is in discussions with Petitioner BMW NA to dismiss the pending lawsuit, which includes the ’482 Patent.

Notwithstanding, MMT has also offered to BMW NA a Covenant Not to Sue on the ’482 Patent (along with the two other patents found invalid under 35 U.S.C. § 101 by the district court and the subject of IPR petitions by BMW NA²) in return for dismissing this IPR Petition and the two other IPR petitions. BMW NA offered

¹ Mercedes-Benz USA, LLC has moved to withdraw from the IPR after a settlement with MMT. (Paper 7)

² IPR2023-01224 and IPR 2023-01234

this proposal previously to MMT but then recently declined when raised again by MMT, despite allowing the PTAB to better focus its resources on cases proper for its consideration. For at least these reasons, the Board should not expend resources on instituting a trial on the '482 Patent when it is unenforceable against Petitioner or any other parties.

In addition, Petitioner failed to show that there is a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Petitioner has not demonstrated a reasonable likelihood that any claim of the '482 patent would be obvious in view of the cited *Luff* (Exhibit 1005), *Amaratunga* (Exhibit 1006), *Seem* (Exhibit 1007), *Zuta* (Exhibit 1008) or *Breton* (Exhibit 1009) references. Indeed, the '482 patent was previously the subject of an IPR petition in 2020, filed by Volkswagen Group of America, Inc. (IPR2020-00894 or the "Volkswagen IPR"), using the same references *Luff*, *Zuta* and *Breton* in the instant Petition and *that* Petition was denied institution (*Id.*, Paper 11). Nothing has changed since 2020 for the Board to render a different decision.

For all the above reasons, the Board should deny the Petition for *inter partes* review.

II. APPLICABLE LEGAL PRINCIPLES

"[T]he decision whether to institute an *inter partes* review is discretionary." *Unified Patents Inc. v. C-Cation Techs., LLC*, IPR2015-01045, Paper 15 at 3 (PTAB Oct. 7, 2015) (citing 37 C.F.R. § 42.108 (a)). Petitioner has the burden to show that

it is likely to prevail as to at least one claim of the '680 patent. 35 U.S.C. § 314; *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348 (2018).

To make a prima facie showing of obviousness under 35 U.S.C. § 103, the Petition must, among other requirements, fulfill the requirements set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966), including demonstrating that the cited references disclose each element of a challenged claim. *In re Magnum Oil Tools Int'l.*, 829 F.3d 1364, 1376 (Fed. Cir. 2016); *see also Apple Inc. v. Contentguard Holdings, Inc.*, IPR2015-00442, Paper 9 at 12-13 (PTAB July 13, 2015).

Petitioner also has the burden to show there would have been some motivation to combine the asserted prior art, and that the proposed combination would render the patented claims obvious. “Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination.” *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) (internal citation omitted); *see also In re Magnum Oil Tools Int'l.*, 829 F.3d at 1376. Even if individual modifications or choices were obvious, a petition must explain why making all of the changes at once would be obvious. *Apple Inc. v. Contentguard*, Paper 9 at 16-17 (“[T]he mere fact that individual changes might have been obvious does not make doing all of the changes at once obvious.”).

The Federal Circuit has found that, even for an obviousness challenge based on a single reference in view of the knowledge and skill of a POSITA, there must be a motivation to make the combination and a reasonable expectation that such a

combination would be successful, otherwise a skilled artisan would not arrive at the claimed combination. *In re Stepan Co.*, 868 F.3d 1342, 1345-46 (Fed. Cir. 2017). In other words, when a gap in a single prior art reference requires filling with, for example, the knowledge of one of ordinary skill, there must be a further showing that the skilled artisan would have arrived at the claimed invention.

The lack of a technological obstacle to combining references, in and of itself, does not justify a finding of obviousness. See *In re Omeprazole Patent Litig. v. Apotex Corp.*, 536 F.3d 1361, 1380-81 (Fed. Cir. 2008). A reason for combining disparate prior art references is critical and should be made explicit. *InTouch Techs., Inc. v. VGo Communs., Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (internal citation omitted).

Hindsight analysis is inappropriate. Obviousness must be measured “*at the time the invention was made.*” *Ortho-McNeil Pharm. v. Mylan Labs*, 520 F.3d 1358, 1364 (Fed. Cir. 2008). A petition must demonstrate a rationale to combine prior art references without relying on the patent disclosure itself. *Apple Inc. v. Contentguard*, Paper 9 at 15, 17; see also *P&G v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 995 (Fed. Cir. 2009). The Petitioner must not use the patent as a roadmap. *In re NTP, Inc.*, 654 F.3d 1279, 1299 (Fed. Cir. 2011) (internal citation omitted); see also *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Moreover, the petition should not be instituted under 35 U.S.C. § 325(d). 35 U.S.C. § 325(d) states that, in determining whether to institute an IPR, “the [PTAB]

Director may take into account whether, and reject the [IPR] petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” The Director's determination to institute or deny an IPR is nonappealable. 35 U.S.C. § 314(a).

III. TECHNOLOGY BACKGROUND

The technical field of the '482 patent encompasses devices for measuring the power consumption and performance as related to ecological parameters. the '482 patent

A. Overview of the '482 Patent

The '482 patent is directed to measuring power consumption and performance relative to the environment. (Exhibit 1001 at Abstract.) In the context of the '482 patent, the “environment” contemplates the environment of a “power-consuming unit” which can be a multitude of things, including: a house, hotel, sports center, residence, office buildings, and a motor vehicle. (*Id.* at 3:3-12.) The '482 patent teaches a device and method of calculating ecological parameters from power consumption and waste production data. (*Id.* at 1:41-44.) The novelty of the '482 patent can be found in its disclosure of quantification of environmental costs associated with consumption. (*Id.* at 5:31-36.)

As indicated in the specification, “[i]n preferred variants, the device can comprise an input module of a data bus of a domotic (sic) network,” thereby indicating that the claimed invention is directed to automation and smart

environments where the ecological parameters can be used to regulate the power-consuming environment. (*Id.* at 2:12-14, Claim 3.)

Petitioners broadly characterize the '482 patents' invention as a method to "generate a 'parameter' purportedly representing the environmental impact of commonly used resources, e.g., electricity in the home.," but this characterization is misleading and an oversimplification of the invention. (Paper 2 at 6.)

1. '482 Patent Specification

Rather than simply teach a method of analyzing resources consumed, the '482 patent teaches a device for measuring power consumption and performance with respect to the environment of a power consuming unit (Ex. 1001 at Claim 1) and a method of determining an ecological parameter by a processor comprising power consumption data, waster production data, and a comparable ecological parameter or "ecocoms" with the ecocom percentage being outputted as a corresponding value on a display. (*Id.* at Claim 9, 6:9-11.)

The system disclosed in the '482 patent is described as "a new measuring device of power consumptions which calculates ecological parameters from the measured power consumptions and from data of waste production." (*Id.* at 1:53-56.) A "power consuming unit" can be many different manifestations including a house, a community, and a motor vehicle. (*Id.* at 3:3-12.) The measure of respectful performance or behavior with the environment of the power consuming unit considers power flow required by the user for their comfort level and consumptions

and wastes set forth by current regulations (e.g. ISO standards). (*Id.* at 3:3-21.) This data is used to calculate an ecological parameter based on the power consumption of the power consuming unit and its environment. (*Id.*)

2. Challenged Claims of the '482 Patent

The Petitioner challenges claims 1-2 and 4-7 and 9-13 of the '482 patent.

The '482 patent has two independent claims (claims 1 and 9) and fourteen dependent claims (claims 2-6, 8-12, and 14-18). (*Id.* at 6:36-8:37.)

Claim 1 recites:

1. A device for measuring power consumption and performance with respect to the environment of a power-consuming unit comprising

a data introduction module, which receives at least one power consumption value, measured by a measurement apparatus of the power-consuming unit;

an input device for inputting waste production data;

a display screen; and

a computer with a processor and a memory device having therein a plurality of instructions that, when executed by the processor, cause the processor to

(a) receive the at least one power consumption value from the data introduction module,

(b) receive the waste production data,

(c) calculate an ecological parameter based on the at least one power consumption value and the waste production data, and

(d) operate the display screen to display the calculated ecological parameter, wherein the calculated ecological parameter is an adjusted mean of the sum of the deviations of the at least one power consumption value with respect to

a reference value corresponding to the at least one power consumption value.

Claims 2 and 4-7 depend from claim 1 and recite additional features of the invention. (Ex. 1001 at 6:62 -7:28.)

Claim 9 recites:

9. A method of determining an ecological parameter by processor, comprising:

receiving a first power consumption value of a power consuming unit,

receiving a waste production data value,

determining an ecological parameter based on the first power consumption value and the waste production data value, and

outputting the determined ecological parameter for display on a display screen.

Dependent claims 10-13 depend from claim 9 and recite additional features of the invention. (*Id.* at 7:29-8:37.)

B. Person of Ordinary Skill in the Art

The level of ordinary skill in the art applicable to the '482 patent around the time of the invention in 2008 is a person with (1) a B.S. in mechanical engineering or a closely related field with three or more years of experience in either programmable engine control systems or (2) at least a M.S. in mechanical engineering.

IV. CLAIM CONSTRUCTION

In an *inter partes* review proceeding, “a claim of a patent . . . shall be construed

using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b).

Petitioner provided its proposed claim construction for “the calculated ecological parameter is an adjusted mean of the sum of the deviations of the at least one power consumption value with respect to the at least one power consumption value” (claim 1) and “means for introducing values of waste production” (claim 2). (Paper 2 at 12-14.)

Patent owner proposes the claim terms be given their plain and ordinary meaning.

Patent owner reserves the right to construe other terms of the '482 patent throughout this proceeding, if the petition is granted and in pending district court litigation pending against Petitioner and its parent company.

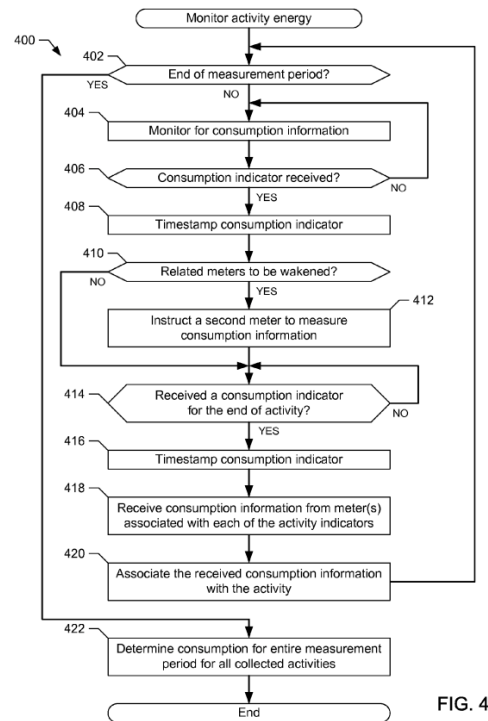
V. OVERVIEW OF CITED PRIOR ART

A. Luff

In all five Counts of the Petition, the Petitioner relies on *Systems, Methods, and Apparatus to Generate an Energy Consumption Index*, U.S. Patent No. 8,170,866 (“*Luff*”) as the primary reference.

Luff generally relates to the generation of an “energy consumption index” (Ex.

1005 at Abstract.) The energy consumption index comprises data obtained based on measurements of resources consumed by a person or persons at home, outside of the home, and while making purchases. (*Id.* at 31:46-64.) The collected data is indexed. (*Id.* at 1:52-58.) The same is depicted in Figure 4:



(*Id.* at Fig. 4.)

The data indexing disclosed in *Luff* is elementary in comparison to the invention disclosed in the '482 patent. In calculating ecological parameters or “ecocoms”, the data associated with power consumer of the power consuming unit is manipulated and then analyzed to produce an ecocom expressed as a percentage. See Ex. 1001 at Claim 1 (“the calculated ecological parameter is an adjusted mean of the sum of the deviations of the at least one power consumption value with respect to a reference value corresponding to the at least one power consumption value”).

The analysis of the '482 patent uses the algorithm below in arriving at the ecocom percentage.

$$Ecocoms(\%) = 1/n \sum_{i=1}^n \left(Cpd \left(1 - \frac{Ei}{p \cdot Ct} \right) \right) \times 100$$

wherein “Ei” is a power quantity consumed in a time period,

“Ct” is a predetermined standard quantity of power consumed in the time period,

“Cpd” is a coefficient corresponding to the predetermined standard quantity of power consumed in the time period,

“n” is a sum of a number of measured power sources and waste variables, and

“p” is a number of users of the measured power sources and waste variables.

(Ex. 1001 at 5:28-6:30, Claim 16.)

The ecocom analysis claimed in the '482 patent goes far beyond data indexing. (*Id.*) Further, one of the preferred embodiments of the specification of the '482 patent comprises a domestic network of a smart home. (*Id.* at 2:12-14) The inventor's contemplation that the invention of the '482 patent could be used in a domestic network demonstrates that the ecocom percentage can be used for artificial intelligence, which certainly requires far more than the data indexing claimed by *Luff*.

B. Amaratunga

Petitioner cites U.S. Patent Application Publication No. 2003/0061091 by Amaratunga et al. (“*Amaratunga*”) as a secondary reference in all five of its Counts. (See generally Petition.)

Amaratunga is generally directed to “systems and methods for making prediction on energy consumption of energy-consuming systems or sites” and discloses “remotely acquiring data from energy-consuming systems or sites, building a model for energy consumption of an energy-consuming system or site, and providing remote access to prediction of energy consumption of the energy-consuming system or site.” (Ex. 1006, ¶ [0002].)

Amaratunga is generally directed to “energy-consuming site[s] (hereinafter called “energy-consumption predicting system”), such as a manufacturing plant or a facility that uses energy.” (*Id.* at ¶ [0016].) The “waste production” information collected in *Amaratunga* merely amount to reporting “by-products and waste amounts for energy-consuming site 100 [which] may similarly influence the energy amounts used. The by-products and waste amount data are provided by a by-product and waste information unit 230 that can measure by-products and waste amounts.” (*Id.* at ¶ [0035].) This passage amounts to the only substantive disclosure in *Amaratunga* which may be considered “waste production data.” As in *Luff*, a POSA would not look to *Amaratunga* to discern any disclosure of details of “waste production data” recited in the claims of the ’482 patent.

C. Seem

Petitioner cites to U.S. Patent Application Publication No. 2003/0028350 by Seem (“*Seem*”) as a secondary reference in three of its Counts. (*See generally* Petition.)

Seem is generally directed to “managing consumption of utilities, such as electricity, natural gas and water; and more particularly to detecting the occurrence of abnormal usage.” (Ex. 1007, ¶ [0004].) *Seem* determines “[a]bnormal utility usage by a building or a particular apparatus in the building . . . by repeatedly measuring the level of use of the utility thereby producing a plurality of utility measurements. A Generalized Extreme Studentized Deviate (GESD) statistical procedure is applied to the plurality of utility measurements to identify any measurement outliers.” (*Id.*, [0004].) As the cited disclosure in *Seem* implies, *Seem* is directed to determining abnormalities of usage in utilities in a building, not in determining an “ecological parameter based on the at least one power consumption value and the waste production data” as recited in the claims of the ’482 patent. *Seem*, as wielded by Petitioners, merely supplies a mathematical equation of a sum of squared deviations related to utility usage, (*id.*, ¶ [0004]), but nothing more than that related to calculation of an “ecological parameter.” A POSA would not look to *Seem* to supply the limitations missing in the other asserted references in the Petition.

D. Zuta

Petitioner cites U.S. Patent Application No. 2007/0262855 (“*Zuta*”) as a secondary reference in three of its five Counts. (*See generally* Petition.)

Zuta is generally directed to a “fuel consumption measuring system” and discloses a system that makes “operative conclusions about the car and its environment, the quality of fuel used, the driver’s habits.” (Ex. 1010 at 2, ln. [0051].) The environmental data measured by *Zuta* consists of “environmental conditions such as temperature, season winter/summer, rain/snow, etc.” (*Id.* at 6, ln. [0172].)

The “environment” in the ’482 patent is the “environment of a power-consuming unit.” (Ex. 1001 at Claim 1.) The inventive concept of the ’482 patent measures respectful performance or behavior “with the environment” of the “power-consuming unit,” meaning the environment in which the “power-consuming unit” exists. (*Id.* at 1:1:24; 3:3:12.) *Zuta*, on the other hand, discloses a measurement system wherein environmental factors are considered as one of the many factors affecting fuel consumption. (Ex. 1010 at 6, ln. [0151 - 0172].)

The ’482 patent does not consider these factors in calculating its “ecological parameter.” See e.g., Ex. 1001 at 6:9-21, Claim 16. The ’482 patent discloses a measurement of power consumption and power performance based on the following algorithm:

$$Ecocoms(\%) = 1/n \sum_{i=1}^n \left(C_p dx \left(1 - \frac{E_i}{p \cdot C_t} \right) \right) \times 100$$

wherein “E_i” is a power quantity consumed in a time period,

“Ct” is a predetermined standard quantity of power consumed in the time period,

“Cpd” is a coefficient corresponding to the predetermined standard quantity of power consumed in the time period,

“n” is a sum of a number of measured power sources and waste variables, and

“p” is a number of users of the measured power sources and waste variables.

(Ex. 1001 at Claim 16.)

Petitioner cites *Zuta* in support of its premise that “compar[ing] resources consumed to benchmark values for each respective resource, and use the resulting comparison to assess environmental performance” was known at the time of the invention. (Paper 2 at 7.) This assertion is moot as the specification of the ’482 patent discloses the same:

A lot of kinds of programmable logic controllers (PLC) are known, in which, from state variables, the outputs of a system are determined (e.g. electrical or pneumatic, etc.) or another kinds of devices that, from inputs, calculate the values of parameters of interest. Examples of these devices can be the known analysers of the electric mains that, from voltage, current intensity and imbalance signals, calculate the electric power consumed by an installation.

(Ex. 1001 at 1:33-49.)

If the invention of the ’482 patent is properly characterized as an “apparatus that calculates ecological parameters or magnitudes . . . from power consumption and waste production installations” where “parameters” or “magnitudes” are defined as “deviation from an optimal work point, defined by an authority,” then it is evident

that *Zuta*, alone, or in combination with any other reference, cannot render claims 6-7 or 12-13 obvious. See Ex. 1001 at 1:41-49.

Zuta discloses the FuelEye™ system, which measure fuel consumption of a vehicle, stores the data as related to locations traveled by the car and displays the cost of fuel consumed. (Ex. 1010 at 2, ln. [0046-0047].) The alleged invention disclosed in *Zuta* is shown in Figures 13 and 14.

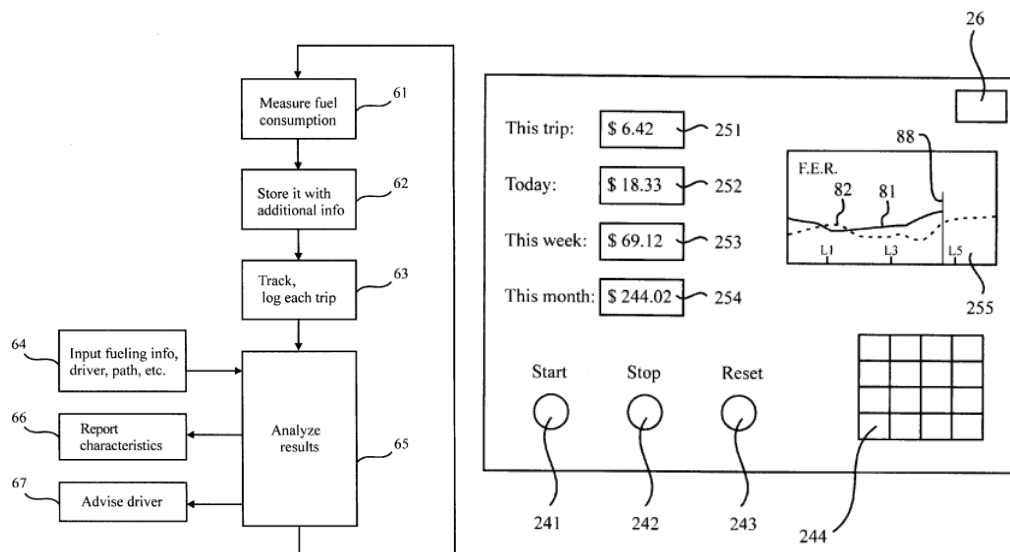


FIG. 13

FIG. 14

(Ex. 1010 at Fig. 13, 14.)

Like the Programmable Logic Controllers (PLC) known at the time of the invention, *Zuta* uses inputs (fueling info, driver path) to calculate values of parameters of interest (the cost of fuel consumption). (*Id.*) As stated in the specification, the invention taught by the '482 patent was an improvement over such PLCs. (Ex. 1001 at 1:33-50.) As such, devices like that which is disclosed in *Zuta*, have already been considered and found not to render the '482 patent obvious or

unpatentable.

E. Breton

Petitioner cite *Real-Time On-Road Vehicle Exhaust Gas Modular Flowmeter and Emissions Reporting System*, U.S. Patent No. 6,148,656 (“Breton”) as an additional reference to support their position that claim 7 should be rendered obvious. (Paper 2 at 6.)

Breton discloses on on-board vehicle emissions testing system. (Ex. 1007 at Abstract.) The alleged Breton invention “is a portable exhaust emissions measurement system for vehicles . . . which continuously measures, displays, and records the quantity of gaseous emissions.” (*Id.* at 1:9-13.) The object of the invention in *Breton* is directed to “provid[ing] a mobile, on-board emissions testing system which is transferrable between different vehicles.” (*Id.* at 2:61-63.) Like *Luff*, *Breton* calculates “reporting” of data collected, and little more. See e.g. *Id.* at claim 1.

VI. DISCRETIONARY FACTORS

A. The Petition Should Be Rejected Under the *Fintiv* Factors

The *Fintiv* factors weigh in favor of discretionary denial. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). The ’482 has been invalidated as ineligible under 35 U.S.C. § 101 by two district courts, in concurrent litigations, first in *Michigan Motor Technologies LLC, v Bayerische Motoren Werke AG*, and then in *BMW of North America, LLC* Civil Action No. 1:22-cv-3804-SCS-MV on July

21, 2023. Patent Owner MMT is in discussions with Petitioner BMW NA to dismiss the pending lawsuit, which includes the '482 Patent.

Moreover, given that the District Court has already invalidated the patent, MMT offered a covenant not to sue BMW NA on the '482 Patent in return for dismissing this IPR Petition. In fact, it was BMW NA's suggestion that it would dismiss this IPR Petition in exchange for such a covenant. Having agreed to this suggestion in August, MMT immediately notified BMW NA for confirmation but received no response. (See August 16, 2023, email from Neil A. Benchell to Brian Biggs, attached hereto as Exhibit 2001.)

MMT again asked whether BMW NA would agree to dismiss this IPR as it suggested on November 2, 2023, again with no response. (See November 2, 2023, email from Neil A. Benchell to Brian Biggs, attached hereto as Exhibit 2002.) It was only after MMT was forced to contact BMW NA's local counsel for the underlying litigation, explain again that MMT agreed with BMW NA's suggested course of action, and was still waiting months later for BMW NA's response, that BMW NA finally declined to agree to dismiss this IPR in view of a covenant not to sue. (See November 16, 2023, email from Brian Biggs to Jason Wejnert and Neil A. Benchell, attached hereto as Exhibit 2003.)

Thus, BMW NA proposed a course of act, then declined to follow that course. BMW NA chose not to accept such a covenant not to sue, despite allowing the PTAB to better focus its resources on cases proper for its consideration.

A settlement and dismissal of the related district court action is expected long before a Final Written Decision is expected, in February 2025. (Pet. at 28.)

Discretionary denial of the Petition would serve judicial economy in this matter and avoid the Board expending resources in continuing the process at this point in evaluating an expired, invalid patent. Therefore, this factor weighs in favor of discretionary denial under *Fintiv*.

B. The Petition Should Be Rejected Under §325(D) Because Cited References Were Presented in a Prior IPR And Patent Prosecution

The Petition should not be instituted under 35 U.S.C. § 325(d). 35 U.S.C. § 325(d) states that, in determining whether to institute an IPR, “the [PTAB] Director may take into account whether, and reject the [IPR] petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” The Director's determination to institute or deny an IPR is nonappealable. 35 U.S.C. 314(a).

In *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (Feb. 13, 2020) (designated precedential on March 24, 2020), the PTAB established a “two-part framework” for determining whether § 325(d) applies: “(1) whether the same or substantially the same art previously was presented to the [Patent] Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the [IPR] petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.”

According to *Advanced Bionics*, “[i]f a condition in the first part of the

framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review. If reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.”

Whether previously presented art or argument is “substantially the same” as that asserted in the IPR petition can be evaluated using “factors (a), (b) and (d)” from the PTAB's prior precedential decision *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (Dec. 15, 2017), i.e., (a) the similarities and material differences between the asserted art and the prior art involved during examination; (b) the cumulative nature of the asserted art and the prior art evaluated during examination; and (d) the extent of the overlap between the arguments made during examination and the manner in which petitioner relies on the prior art.

Here, Petitioner has asserted the same primary reference, *Luff*, as in the Volkswagen IPR, as well as the same combining references *Zuta* and *Breton*. The two newly introduced asserted references, *Amaratunga* and *Seem*, are substantially similar and cumulative of the references asserted in the denied Volkswagen IPR. Moreover, Petitioner has failed to demonstrate that the Office erred in a manner material to the patentability of challenged claims.

**VII. THE PETITION SHOULD BE REJECTED UNDER § 314(A)
BECAUSE PETITIONER IS UNLIKELY TO PREVAIL WITH**

RESPECT TO ANY CHALLENGED CLAIM

The Board should decline review under 35 U.S.C. § 314(a) because as set forth below, there is no likelihood that Petitioner will prevail with respect to any challenged claim.

A. All Grounds of the Petition Fails As the Challenged Claims 1-2, 4-5 and 9-13 Are Not Rendered Obvious by *Luff* Alone or In Combination with Any Other Reference

Luff alone fails to disclose “calculated ecological parameter is an adjusted mean of the sum of the deviations of the at least one power consumption value with respect to a reference value corresponding to the at least one power consumption value.” Likewise, *Luff* in combination with *Amratunga*, *Seem*, or *Bretton* fail to disclose this claim element. Without such disclosure, all Grounds for Challenge asserted by the Petitioner fail.

Luff is directed to generation of an “energy consumption index” (Ex. 1005 at Abstract.)

As for *Amaratunga*, the “waste production” information collected in *Amaratunga* merely amount to reporting “by-products and waste amounts for energy-consuming site 100 [which] may similarly influence the energy amounts used. The by-products and waste amount data are provided by a by-product and waste information unit 230 that can measure by-products and waste amounts.” (Exhibit 1006, ¶ [0035].) As discussed above, this passage amounts to the only substantive disclosure in *Amaratunga* which may be considered “waste production

data.” As in *Luff*, a POSA would not look to *Amaratunga* to discern any disclosure of details of “waste production data” recited in the claims of the ’482 patent. Therefore, a POSA would not combine *Luff* and *Amaratunga* to render obvious claim 1, and therefore claims 2 and 4-5 reciting “calculate an ecological parameter based on the at least one power consumption value and the waste production data.”

As for *Seem*, and as discussed above, *Seem* is directed to determining abnormalities of usage in utilities in a building, not in determining an “ecological parameter based on the at least one power consumption value and the waste production data” as recited in claims 1-2 and 4-5 of the ’482 patent. *Seem*, as wielded by Petitioner, merely supplies a mathematical equation of a sum of squared deviations related to utility usage, (*id.* at ¶ [0004]), but nothing more than that related to calculation of an “ecological parameter.” A POSA would not look to *Seem* to supply the limitations missing in *Luff* and *Amaratunga*.

The faulty logic used by the Petitioner to combine *Luff*, *Amaratunga* and *Seem* by looking with impermissible hindsight to find the claim limitations in the references asserted in Ground1 does not avail Petitioner, where a POSA would not look to the asserted references to combine to render obvious the claims of the ’482 patent and its measuring device of power consumption expressed as an ecological parameter or ecocom from measured power consumption value and waste production data “wherein the calculated ecological parameter is an adjusted mean of the sum of the deviations of the at least one power consumption value with respect to a reference

value corresponding to the at least one power consumption value.” (Ex. 1001 at Abstract, 1:33-49, 5:15-6:22.)

In view of the aforementioned, *Luff* alone, or in combination with any other reference would not have rendered any claim of the '482 patent obvious.

B. Ground 2 of the Petition Fails: Claim 6 Is Not Rendered Obvious by Combining *Luff*, *Amaratunga*, *Seem* and *Zuta*

Claim 6 is not rendered obvious by combining the teachings of *Luff*, *Amaratunga*, *Seem* and *Zuta*. Claim 6 recites “the fuel flow input and the waste production data are used to calculate the ecological parameter corresponding to the automobile”. (Ex. 1001 at 7:19-21.)

As stated above, the combination of *Luff*, *Amaratunga* and *Seem* together do not render any claims of the '482 patent obvious. *Zuta* does not cure the defect in regard to claim 6. *Zuta*'s fuel consumption measuring system may disclose a flow meter, but it still fails to disclose an apparatus or means to “calculate the ecological parameter.”

The environmental data measured by *Zuta* consists of “environmental conditions such as temperature, season winter/summer, rain/snow, etc.” (*Id.* at 6, ln. [0172].) *Zuta* discloses a measurement system wherein environmental factors are considered as one of the many factors affecting fuel consumption. (Ex. 1010 at 6, ln. [0151 - 0172].)

The '482 patent does not take into account the “environmental conditions”

disclosed by *Zuta* and asserted by Petitioner. Therefore, A POSA would not look to *Zuta* to supply the limitations missing in *Luff* and *Amaratunga*. In view of the aforementioned, *Luff* alone, or in combination with *Amaratunga* and *Zuta* would not have rendered claim 6 of the '482 patent obvious.

C. Grounds 3, 4, and 5 of the Petition Fail: Claims 7 and 9-13 Are Not Rendered Obvious

Claims 7 and 9-13 of the '482 Patent have not been rendered obvious by *Luff*, *Seem*, *Zuta*, and *Breton*.

As for claim 7, Petitioner does not demonstrate disclosure of the claim element “the calculated ecological parameter is an adjusted mean of the sum of the deviations of the at least one power consumption value with respect to a reference value corresponding to the at least one power consumption value.” (Ex. 1001 Claim 1.)

Breton discloses on on-board vehicle emissions testing system. (Ex. 1009 at Abstract.) The alleged *Breton* invention “is a portable exhaust emissions measurement system for vehicles . . . which continuously measures, displays, and records the quantity of gaseous emissions.” (Id. at 1:9-13.) The object of the invention in *Breton* is directed to “provid[ing] a mobile, on-board emissions testing system which is transferrable between different vehicles.” (Id. at 2:61-63.) Like *Luff*, *Breton* calculates “reporting” of data collected, and little more. A POSA would not look to *Bretton* to supply the limitations missing in *Luff* and *Amaratunga*. In view of

the aforementioned, *Luff* alone, or in combination with any other reference would not have rendered claim 7 of the '482 patent obvious.

As for claim 9, and as discussed above, the combination of *Luff* with any other reference does not disclose “an ecological parameter based on the first power consumption value and the waste production data value” recited in claims 9-13. Breton does not even mention the term “waste” or “waste production” in its disclosure. As in *Luff*, a POSA would not look to *Breton* to discern any disclosure of details of “waste production data” recited in the claims of the '482 patent. Therefore, a POSA would not combine *Luff*, *Amaratunga* and *Breton* to render obvious claim 9, and therefore claims 10-13 reciting “determining an ecological parameter based on the first power consumption value and the waste production data value.”

Accordingly, there would have been no motivation for a POSITA to combine *Luff* with *Amaratunga*, *Zuta*, or *Breton* to arrive at the challenged claims of the '482 patent.

VIII. CONCLUSION

For the foregoing reasons, the Petition to institute *inter partes* review of any claim of the '482 patent should be denied.

Dated: November 21, 2023

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IPR2023-01031

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count under §42.24(a)(1) for the foregoing Patent Owner's Preliminary Response totals 5,598 words. This certification relies on the word count of the word-processing system used to prepare this paper.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on November 21, 2023, I caused a true and correct copy of the foregoing materials to be served via the Patent Office electronic filing system, and electronic service via email to the following attorneys of record pursuant to Petitioner's consent.

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