

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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VOLKSWAGEN GROUP OF AMERICA, INC.,  
Petitioner,

v.

VELOCITY PATENT LLC,  
Patent Owner.

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Case IPR2015-00276  
Patent 5,954,781

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Before GLENN J. PERRY, RAMA G. ELLURU, and PETER P. CHEN,  
*Administrative Patent Judges.*

CHEN, *Administrative Patent Judge.*

DECISION  
Denying Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

## I. INTRODUCTION

Volkswagen Group of America, Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17–32 of U.S. Patent No. 5,954,781 (Ex. 1001, “the ’781 patent”). Paper 2 (“Pet.”). Velocity Patent LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have statutory authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

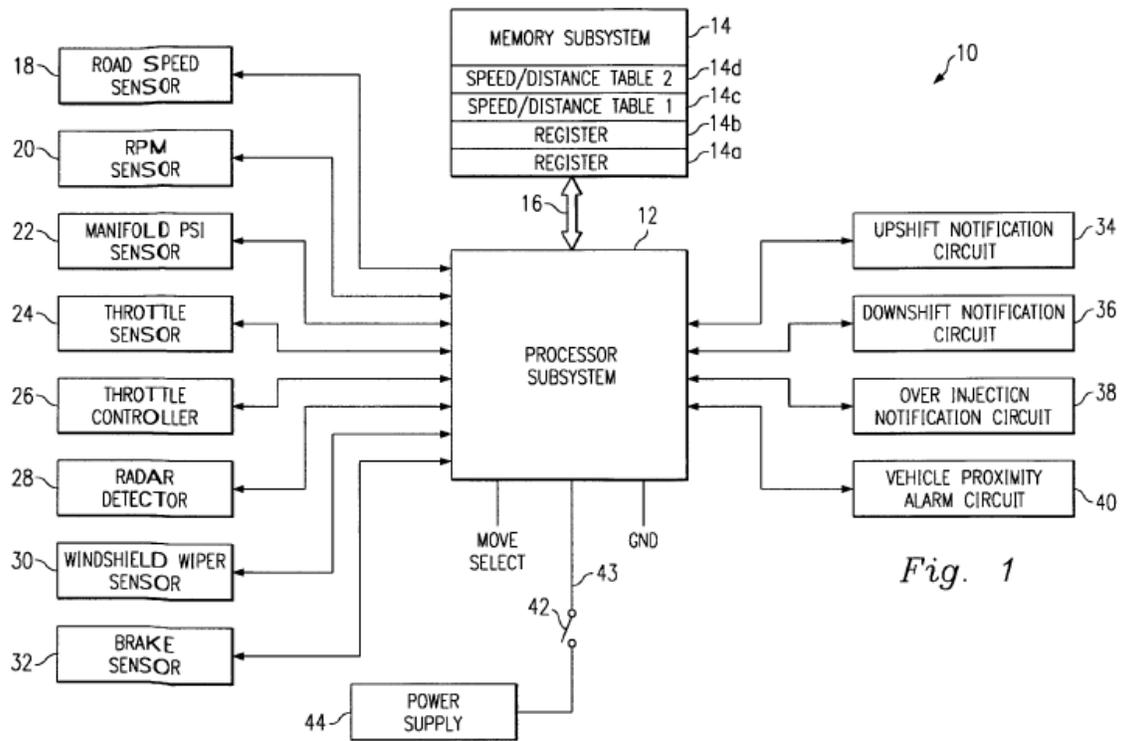
Upon consideration of the Petition, we are not persuaded Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of any of the challenged claims of the ’781 patent. Accordingly, we do not institute an *inter partes* review of the ’781 patent.

### A. *Related Proceedings*

Patent Owner filed a Complaint against a subsidiary of Petitioner, and a company under whose name Petitioner does business, in the U.S. District Court for the Northern District of Illinois, alleging infringement of the ’781 patent. *Velocity Patent LLC v. Audi of America, Inc.*, Case No. 1:13-cv-08418-JWD (N.D. Ill.). Pet. 1. Patent Owner has filed other lawsuits in the Northern District of Illinois alleging infringement of the ’781 patent by other parties. Pet. 5–6; Paper 5, 1. On May 22, 2014, Petitioner filed a request for *ex parte* reexamination of the ’781 patent, which is pending as Control No. 90/013,252 (the “Reexamination”). *Id.*

*B. The '781 Patent*

The '781 patent is titled, "Method and Apparatus for Optimizing Vehicle Operation." The subject matter of the challenged claims of the '781 patent relates generally to a system which notifies the driver of recommended corrections in vehicle operation and, under certain conditions, automatically initiates corrective action. Ex. 1001, 1:5–10. Figure 1 of the '781 patent is reproduced below.



*Fig. 1*

Figure 1 is a block diagram of the '781 system. Ex. 1001, 5:42–44. System 10 includes processor subsystem 12 (“for example, a microprocessor”), and memory subsystem 14 connected by bus 16 to processor subsystem 12. *Id.* at 5:54–58. State sensors and level sensors, including road speed sensor 18, rpm sensor 20, manifold pressure sensor 22, throttle sensor 24, windshield wiper sensor 30, and brake sensor 32, collectively monitor the operation of

the vehicle and are coupled to processor subsystem 12. *Id.* at 2:12–16, 5:65–6:7. System 10 also includes upshift notification circuit 34, downshift notification circuit 36, overinjection notification circuit 38, and vehicle proximity alarm circuit 40, coupled to processor subsystem 12, all of which may be configured to provide visual or audible notifications to the driver of the vehicle. *Id.* at 7:9–25.

Processor subsystem 12 periodically polls and receives data from the series of sensors to determine when to activate the fuel overinjection notification circuit or other notification circuits, and issue notifications. *Id.* at Abstract, 2:17–20, 5:65–6:7, 6:42–46, 12:64–13:20. *See* Pet. 2–5; Prelim. Resp. 4–10. The '781 patent also describes automatic initiation of corrective action, for example throttle reduction by throttle controller 26, if the vehicle is operated unsafely. Ex. 1001, Abstract, 4:3–11, 7:5–6, 7:49–53, 10:15–29.

### *C. Illustrative Claim*

Claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 17–32 are the subject of the petition. Claims 1, 7, 13, 17, 23, 26, 28, and 31 are independent. Independent claim 1 is illustrative of the challenged claims and is reproduced as follows.

1. Apparatus for optimizing operation of a vehicle, comprising:

a plurality of sensors coupled to a vehicle having an engine, said plurality of sensors, which collectively monitor operation of said vehicle, including a road speed sensor, an engine speed sensor, a manifold pressure sensor and a throttle position sensor;

a processor subsystem, coupled to each one of said plurality of sensors, to receive data therefrom;

a memory subsystem, coupled to said processor subsystem, said memory subsystem storing therein a manifold pressure set point, an RPM set point, and present and prior levels for each one of said plurality of sensors;

a fuel overinjection notification circuit coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle;

an upshift notification circuit coupled to said processor subsystem, said upshift notification circuit issuing a notification that said engine of said vehicle is being operated at an excessive speed;

said processor subsystem determining, based upon data received from said plurality of sensors, when to activate said fuel overinjection circuit and when to activate said upshift notification circuit.

*D. Prior Art Relied Upon*

Petitioner relies upon the following five references.

<b>Reference</b>	<b>Title</b>	<b>Date</b>	<b>Ex. No.</b>
Jurgen	Automotive Electronics Handbook	1995	Ex. 1002
Smith	U.S. Patent No. 4,398,174	Issued Aug. 9, 1983	Ex. 1003
Habu	U.S. Patent No. 4,559,599	Issued Dec. 17, 1985	Ex. 1004
Davidian	U.S. Patent No. 5,357,438	Issued Oct. 18, 1994	Ex. 1005
Tonkin	PCT No. WO 96/02853	Published Feb. 1, 1996	Ex. 1006

*E. The Asserted Grounds*

Petitioner contends the challenged claims are unpatentable based on the following four grounds.

<b>Reference(s)</b>	<b>Basis</b>	<b>Claims Challenged</b>
Jurgen, Smith, and Habu	§ 103	1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 28–30
Jurgen, Smith, Habu, and Davidian	§ 103	17–27
Davidian	§ 102	31
Davidian and Tonkin	§ 103	32

**II. ANALYSIS**

*A. Claim Construction*

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). *See In re Cuozzo Speed Techs.*, 778 F.3d 1271, 1282 (Fed. Cir. 2015) (holding that broadest reasonable interpretation standard “was properly adopted by PTO regulation” for IPR proceedings). Claim terms generally are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner proposes a construction for a single term, “fuel overinjection notification circuit,” stating that the term means a circuit that

“provides the driver with . . . an alert that his or her driving is fuel inefficient.” Pet. 8. Patent Owner proposes that this term means “a circuit that provides a driver with a notification that his or her driving is fuel efficient or inefficient.” Prelim. Resp. 11.

The independent claims of the ’781 patent recite that the fuel overinjection notification circuit is “coupled to said processor subsystem, said fuel overinjection notification circuit issuing a notification that excessive fuel is being supplied to said engine of said vehicle.” *See, e.g.*, Ex. 1001, 14:1–4. This description of the fuel overinjection notification circuit also appears in part throughout the specification, *see, e.g., id.* at Abstract, 2:15–19, 3:10–15, 4:15–18, 7:18–19. We cannot discern how the constructions proffered by Petitioner or Patent Owner add any clarity to the term, the meaning of which is discernible from the context of the claims and specification. Therefore, for purposes of this Decision, we conclude that no explicit construction is necessary for this term. We also determine that no explicit construction is necessary for the other terms proposed by Patent Owner.

*B. 35 U.S.C. § 325(d)*

Patent Owner argues that we should exercise our discretion to deny review of the challenged claims pursuant to 35 U.S.C. § 325(d). Prelim. Resp. 13–18. Section 325(d) provides that in “determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.” Patent Owner argues that the Petition should be denied under § 325(d) because “Petitioner discloses substantially the

same references presented in Reexamination,” and “Petitioner presents substantially similar arguments as it did in Reexamination.” Prelim. Resp. 15–16. We decline to exercise our discretion to reject the Petition under § 325(d) because the prior art and arguments presented by Petitioner are not substantially similar to those presented in the pending Reexamination.

In particular, Petitioner argues that the Smith reference, asserted here but not in the Reexamination, teaches one or more limitations of twenty-four of the twenty-six challenged claims. Pet. 9–54. Smith discloses a fuel consumption signaling system including “an alarm circuit connected in series with an indicator circuit including an indicator light connected in parallel with a vacuum operated switch pneumatically connected to the engine manifold.” Ex. 1003, Abstract. Although Smith was listed by Patent Owner in an Information Disclosure Statement filed in the Reexamination, it was not argued by Petitioner in the Reexamination, or substantively addressed or even cited by the Examiner. Indeed, Patent Owner concedes “the Examiner noted that ‘it should be assumed that only the most cursory review of the cited documents consistent with [MPEP] guidelines has been performed.’ (Ex. 1011 at 25.)” Prelim. Resp. 15–16 and n. 8. Because Smith was not meaningfully considered in the Reexamination, we do not exercise our discretion to deny review under § 325(d).

*C. Claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 28–30: Asserted Obviousness over Jurgen, Smith, and Habu*

Petitioner contends claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 28–30 are unpatentable under 35 U.S.C. § 103(a) as obvious over Jurgen, Smith, and Habu. Pet. 9–33. Claims 1, 7, 13, and 28 are independent. Claims 2, 4,

and 5 depend from claim 1, claims 8, 10, and 12 depend from claim 7, claim 15 depends from claim 13, and claims 29 and 30 depend from claim 28.

*Jurgen (Exhibit 1002)*

Jurgen, titled “Automotive Electronics Handbook,” is a compilation of chapters by various authors describing implementations of electronic components in vehicles. Prelim. Resp. 30; Ex. 1002, vii–xvi. Petitioner cites to chapters of Jurgen describing sensors, automotive microcontrollers, engine control, transmission control, cruise control, and on-board and off-board diagnostics. Pet. 12–51; Ex. 1002, vii–xvi.

*Habu (Ex. 1004)*

Habu, titled “Optimum Shift Position Indication Using Successive Two-Dimensional Data Maps,” describes a shift indication apparatus for indicating shift position in vehicles equipped with manual transmission, in order to maintain optimum fuel consumption. Ex. 1004, Abstract, 1:33–39. Habu discloses an apparatus with sensors for engine rotation, throttle valve, and shift position, a microcomputer with memory for storing engine speed data, and an indicator for indicating preferable shift positions for a driver, “so as to enable the economical running of the car to be realized.” *Id.*, Abstract, Fig. 1, 2:23–36.

*Smith (Ex. 1003)*

Smith, titled “Fuel Consumption Signalling System,” describes a system for signaling both efficient and inefficient fuel consumption conditions, using an alarm circuit connected in series with an indicator circuit. Ex. 1003, Abstract, Fig. 1, 2:32–36, 3:58–60. If the engine of a vehicle operates inefficiently (“a fuel wasteful fashion”), the alarm circuit illuminates an alarm light and also activates an audio alarm if the inefficient

fuel consumption condition lasts beyond a preset amount of time. *Id.* at 2:49–58, 5:23–27.

Analysis

Petitioner contends that the combination of Jorgen, Smith, and Habu teaches or suggests the limitations of claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 28–30. Pet. 9–33.

Patent Owner argues that Petitioner does not attempt to “explain why an ordinary artisan would modify Smith to incorporate processor control into Smith’s system,” Prelim. Resp. 48, and argues further that one of ordinary skill in the art would not combine Jorgen, Smith, and Habu, *id.* at 32–41. An invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007). For example, for the limitation of independent claims 1, 7, 13, and 28, reciting “a fuel overinjection notification circuit coupled to said processor subsystem,” Petitioner cites Smith’s disclosure of “an alarm circuit connected in series with an indicator circuit including an indicator light connected in parallel with a vacuum operated switch pneumatically connected to the engine manifold,” where the alarm circuit “is not actuated until the engine is operated in a fuel wasteful fashion.” Pet. 9–10, 16–17; Ex. 1003, Abstract, 5:23–27. Smith does not teach or suggest a “processor subsystem” (which the ’781 patent describes as “for example, a microprocessor,” Ex. 1001, 5:54–55), or any digital components, but Petitioner contends that Jorgen discloses a microcontroller, and Habu discloses a microcomputer. Pet. 10, 13–14; Ex. 1002, 12.1, 22.6, 14.3; Ex. 1004, Fig. 1, 2:33–42.

A determination of unpatentability on a ground of obviousness, however, must also include “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). The obviousness evaluation “should be made explicit,” and it “can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.* Petitioner, which did not supply expert testimony to support its assertions, attempts through argument of counsel to provide a rationale for combining Jurgen, Smith, and Habu, citing to some excerpts from Jurgen, Smith, and Habu. Pet. 11–12. Petitioner argues these excerpts state motivations to combine, as follows:

[T]o provide the needed accuracy and adaptability in order to minimize exhaust emissions and fuel consumption, provide optimal driveability for all operating conditions, minimize evaporative emissions, and provide system diagnosis when malfunctions occur.

Pet. 11 (quoting Ex. 1002, 12.1).

[T]o “provide optimal driveability for all operating conditions.”

Pet. 11 (quoting Ex. 1002, 12.1).

[T]o “provide[] the fuel metering and ignition timing precision to minimize fuel consumption.[”]

Pet. 11 (quoting Ex. 1002, 12.4).

[T]o encourage “fuel efficient driving techniques.”

Pet. 11 (quoting Ex. 1003, 1:22–24).

[T]o “obtain preferable shift positions relating to optimum fuel consumption rate in accordance with . . . data detected.”

Pet. 11 (quoting Ex. 1004, Abstract). Citing to the Board’s decision in *Cisco Systems, Inc. v. Constellation Techs. LLC*, Case IPR2014-01179 (PTAB Feb. 4, 2015) (Paper 7) (“Cisco”), Patent Owner contends that “[r]ote recitation of some of the respective goals of Jurgen, Smith and Habu does not explain a motivation to combine them to create the inventions of the ’781 Patent.” Prelim. Resp. 35. Patent Owner further contends:

Petitioner does not explain how any of the listed motivation(s) would individually or collectively lead to a combination teaching the challenged ’781 Patent’s inventions. Instead, Petitioner summarily states: “like the ’781 [P]atent, Jurgen, Smith, and Habu are concerned with, for example, improving fuel efficiency.” (Pet. at 12.) This “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.*” *Cisco*, IPR2014-01179, Paper 7 at 16 (quoting *ActiveVideo Networks, Inc. v. Verizon Commc’ns, Inc.*, 694 F.3d 1312 (Fed. Cir. 2012) (emphasis in original)).

Prelim. Resp. 36 (footnote omitted). Patent Owner adds:

It is the norm for a patent or other literature to note that it is directed to improving some issue in an art. Typically, there are many patents directed at improving on that same issue. It does not necessarily follow, as Petitioner suggests, that one of skill in the art would combine each prior art reference containing boilerplate statements concerning a desire to improve on a particular technical issue. *See Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1373 (Fed. Cir. 2008) (“[K]nowledge of a problem and motivation to solve it are entirely different from motivation to combine particular references to reach the particular claimed method.”).

Prelim. Resp. 36–37.

We agree with Patent Owner that Petitioner's rationale for combining Jurgen, Smith, and Habu is premised on a handful of conclusory assertions by counsel, unsupported by testimony of an expert witness. Rather than articulated reasoning with rational underpinnings as to why one of ordinary skill in the art would have looked to Smith's indicator light connected in parallel with a vacuum operated switch pneumatically connected to the engine manifold, in considering how to implement a fuel overinjection notification circuit coupled to a processor subsystem, Petitioner has provided only a few sentences of conclusory contentions. Absent from Petitioner's argument is any explanation of how the teachings of Jurgen, Smith, and Habu might be combined to arrive at the claimed invention, e.g., by combining and applying specific teachings of Smith with Jurgen and Habu to account for all the features of the challenged claims. *See KSR*, 550 U.S. at 418.

Petitioner's quoted snippets from Jurgen, Smith, and Habu about improving fuel efficiency are generic and bear no relation to any specific combination of prior art elements. Specifically, Petitioner "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.*" *ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012). Thus, we are not persuaded that the Petition demonstrates a reasonable likelihood that Petitioner would prevail in establishing unpatentability of independent claims 1, 7, 13, and 28, and of dependent claims 2, 4, 5, 8, 10, 12, 15, 29, and 30.

*D. Claims 17–27: Asserted Obviousness over Jurgen, Smith, Habu, and Davidian*

Claims 17–27 “are similar to the above claims,” Pet. 33, but recite additional limitations of a radar sensor and vehicle proximity alarm, which Petitioner asserts are taught by Davidian. Pet. 33; Ex. 1001, 17:34–20:37. Claims 17, 23, and 26 are independent, and claims 18–22 depend from claim 17, claims 24 and 25 depend from claim 23, and claim 27 depends from claim 26. For a rationale to combine Jurgen, Smith, Habu, and Davidian, Petitioner reiterates the same excerpts cited for claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 28–30, and cites an excerpt from Davidian for adding an anti-collision system for vehicles. Pet. 34. We determine that, as explained above, Petitioner fails to provide articulated reasoning with rational underpinning for combining Jurgen, Smith, Habu, and Davidian. *See KSR*, 550 U.S. at 418. We, therefore, are not persuaded that the Petition demonstrates a reasonable likelihood that Petitioner would prevail in establishing unpatentability of independent claims 17, 23, and 26, and of dependent claims 18–22, 24, 25, and 27.

*E. Dependent claims 2, 4, 5, 8, 10, 12, 15, 21, 24, 25, and 27*

Petitioner has not proposed constructions for any of the means-plus-function limitations recited in dependent claims 2, 4, 5, 8, 10, 12, 15, 21, 24, 25, and 27. We determine that Petitioner has not met its burden to demonstrate a reasonable likelihood that the challenged dependent claims are unpatentable because it has not provided constructions for the means-plus-function limitations. *See* 37 C.F.R. § 42.104(b)(3) (“[w]here the claim to be construed contains a means-plus-function or step-plus-function

limitation as permitted under 35 U.S.C. § 112(f), the construction of the claim must identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function”).

Without a proper claim construction of the means-plus-function limitations, we cannot discern the scope of these dependent claims in order to determine whether they are unpatentable over the asserted references. We decline to construe the means-plus-function limitations *ab initio* where Petitioner has not provided argument as to the scope of these claims.

For example, dependent claim 2 recites “means for determining when road speed for said vehicle is increasing,” “means for determining when throttle position for said vehicle is increasing,” and “means for comparing manifold pressure to said manifold pressure set point.” Ex. 1001, 14:16–21. We decline to speculate on the specific disclosure in the ’781 patent describing structure corresponding to the means-plus-function limitations recited in claim 2 and in the other dependent claims with means-plus-function limitations.

Moreover, because Petitioner has failed to identify sufficient structure for a claim construction of the means-plus-function limitations, Petitioner necessarily also has failed to specify where such structure is found in Jurgen, Smith, Habu, and Davidian, pursuant to 37 C.F.R. § 42.104(b)(4). Accordingly, for these reasons we decline to institute trial on dependent claims 2, 4, 5, 8, 10, 12, 15, 21, 24, 25, and 27, in addition to the bases described above in II.C. and II.D.

*F. Claims 31 and 32: Asserted Anticipation by Davidian (claim 31) and Obviousness over Davidian and Tonkin (claim 32)*

We also decline to institute a trial on independent claim 31 and dependent claim 32, which were disclaimed by Patent Owner in the Reexamination and cancelled by the Board in another *inter partes* review proceeding involving the '781 Patent, *Mercedes-Benz USA LLC and Mercedes-Benz U.S. International, Inc. v. Velocity Patent LLC*, Case IPR2014-01247 (PTAB). In particular, in the Reexamination, Patent Owner recorded a statutory disclaimer of claims 31 and 32. *See Mercedes-Benz USA LLC and Mercedes-Benz U.S. International, Inc. v. Velocity Patent LLC*, Ex. 2001. Pursuant to Patent Owner's request for adverse judgment, *id.* Paper 19, the Board granted Patent Owner's request to cancel claims 31 and 32. *Id.*, Paper 20. As a result, Petitioner's challenges to these two cancelled claims are moot. *See* Prelim. Resp. 60.

### III. CONCLUSION

For the foregoing reasons, we are not persuaded the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail in establishing unpatentability of claims 1, 2, 4, 5, 7, 8, 10, 12, 13, 15, and 28–30 as obvious over Jurgen, Smith, and Habu, of claims 17–27 as obvious over Jurgen, Smith, Habu, and Davidian, of claim 31 as anticipated by Davidian, and of claim 32 as obvious over Davidian and Tonkin.

### IV. ORDER

Accordingly, it is

ORDERED that the Petition is *denied* and no trial is instituted.

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