UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

iQAR, INC. F/K/A INVENTLY AUTOMOTIVE, INC.,
Patent Owner

Case IPR2024-00630
Patent 10,850,616

PATENT OWNER'S PRELIMINARY RESPONSE

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I. INTRODUCTION

Patent Owner iQar, Inc. submits this preliminary response to Tesla, Inc.'s Petition for *Inter Partes* Review (Paper 1, the "Petition") of U.S. Patent No. 10,850,616 ("the '616 Patent").

The Petition has not established a reasonable likelihood of success in connection with any challenged claim. The alleged prior art in each ground of the Petition is U.S. Patent No. 8,712,650 ("Koebler650"). Koebler650 is the patent that issued from U.S. Application No. 13/066,189 (the "'189 application"). The '616 Patent is a continuation of—and claims priority to Koebler650—and thus Koebler650 is not prior art.[1] Petitioner, however, argues that Koebler650 does not provide sufficient written description for the claimed "current conditions" and, thus, according to Petitioner, is prior art. Stated in another way, the Petition raises a single issue: whether Koebler650 provides written description support for the claimed current conditions. This does not merit IPR.

First, the Board should exercise its discretion under 35 U.S.C. § 325(d) and deny institution because, during prosecution of the '616 Patent, the Examiner

[1] Although priority is claimed to the underlying '189 application of the issued Koebler650, for simplicity, the Response will refer to the priority application as "Koebler650" throughout.

specifically addressed written description. While he rejected two dependent claims on that basis (which were subsequently cancelled), he did not determine that the independent claims lack written description. In fact, the limitations that Petitioner says are undisclosed in Koebler650 *were specifically added by the Examiner through an Examiner's amendment*. *Apple, Inc. v. Seven Networks, LLC*, No. IPR2020-00425, 2020 WL 5223099, at *7 (P.T.A.B. Sept. 1, 2020) (finding that Petitioner failed to overcome the Examiner's finding of sufficient support for the claim amendments made via Examiner's amendment in the record).

Petitioner presents no new evidence and is simply asking the Board to second-guess this issue—which was fully considered and addressed by the Examiner—to reach a different conclusion. The fact that Petitioner disagrees with the Examiner cannot meet Petitioner's burden to show a material error because, if it did, then there would never be a discretionary denial.

Second, were the Board to reexamine this question, Koebler650 provides adequate written description for the challenged claims. The challenged independent claims reference 21 different "current conditions," though only "at least one of them" is required. The Petition expressly acknowledges that at least eleven of these current conditions are literally disclosed in Koebler650 (Petition, 10) (and thus there is undisputed written description support) but argues that ten other similar conditions lack written description support. Petitioner is wrong.

The crux of Petitioner's argument is that Koebler650 does not provide *literal* support for the ten current conditions. But this is not the test for adequate written description support. *In re Kaslow*, 707 F.2d 1366, 217 US PQ 1089 (Fed. Cir. 1983) ("The test ... is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.").

Even further, Koebler650's written description cannot be limited to a specific set of enumerated conditions because Koebler650 expressly discloses other embodiments. *ScriptPro LLC v. Innovation Associates, Inc.*, 833 F.3d 1336, 1341 (Fed. Cir. 2016) (confirming "a specification's focus on one particular embodiment or purpose cannot limit the described invention where the specification expressly contemplates other embodiments or purposes."). The applicant's statements during prosecution of the '616 Patent similarly did not limit the application's written description.

The Petition therefore attempts to thread the needle that the parent Koebler650 of the '616 Patent (1) anticipates and/or renders obvious to a POSITA the challenged claims (Petition at 20-56) but (2) lacks written description "even under the most generous read (disjunctive read)" (Petition at 20). In other words, the Petitioner argues both that the parent application teaches a skilled artisan each

and every element of the challenged claims *and* that the parent application fails to show the inventors were in possession of their invention. But because Petitioner fails to prove that the claimed—allegedly unsupported—"current conditions" pertain to a different invention than the supported conditions, Koebler650 provides adequate § 112 written description for the challenged claims and cannot be intervening prior art.

Institution should be denied because the Petition's arguments are facially deficient in at least these ways.

II. THE '616 PATENT

The '616 Patent describes devices, systems, and methods for managing the power consumption of an automotive vehicle, and thereby for optimizing the power consumption of the vehicle. TESLA-1001, 2:19-22. The '616 Patent explains that accurate control of fuel consumption may optimize the energy efficiency of a car. *Id*., 1:25-27. Prior to its invention, however, drivers sought to manage fuel consumption in imprecise ways (*e.g.*, slowing down, braking lightly, and carrying lighter loads), which did not effectively improve the energy efficiency of most cars. *Id*., 1:20-25.

The '616 Patent notes that many parameters can impact the optimal power consumption of a vehicle including external factors (*e.g.*, forces and conditions that act on the vehicle), internal conditions (*e.g.*, the status of the vehicle and

component parts), operator commands (*e.g.*, control commands from the operator preparing to or driving the vehicle), and operational parameters (*e.g.*, performance / historical capabilities of the vehicle based on make and model). *Id*., 1:54-63.

The ’616 Patent describes a solution to better manage a vehicle’s power consumption, wherein a power management logic can calculate an applied power for the vehicle engine based on information provided from the external environment of the vehicle, the operational status of the vehicle, one or more command inputs from the driver, and one or more operational parameters of the vehicle. *Id*., 2:22-28. Fundamental to the ’616 Patent’s power management logic is the ability to derive data or receive it from known data inputs (*e.g.*, sensors, telemetries, and so on) or user commands. *Id*., 2:28-31.

Once the applied power is determined by the power management logic, it can be used to control the vehicle’s engine, such as by a motor control mechanism to control the application of power to the vehicle engine as the vehicle travels along a route. *Id*., 2:36-42. The step of calculating the applied power can include determining a route, segmenting the route into one or more segment destinations, calculating an energy efficient speed for the vehicle to travel to the segment destination, determining an optimized speed for the vehicle to travel to the segment destination, and calculating the applied power from the optimized speed for all the

segments. *Id*., 5:21-28. Thus, over an entire route, the most energy efficient speed at which to drive may be continuously calculated to optimize the power supplied and used by the vehicle. *Id*., 5:31-32.

III. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner—in its expert declaration—argues that a person of ordinary skill in the art ("POSITA") relating to the subject matter of the '616 Patent would have had a bachelor's degree in electrical engineering, computer engineering, mechanical engineering, civil engineering (transportation systems), physics, or a related field, and at least four years of experience (or the academic equivalent) in the field of transportation systems. TESLA-1003 at ¶ 28.

For purposes of this Preliminary Response, Patent Owner does not believe it necessary to dispute the level of ordinary skill in the art.

IV. CLAIM CONSTRUCTION

Despite making much of the phrase "at least one of … and" to require either a disjunctive or conjunctive grouping, Petitioner argues that no claim constructions are necessary because claim terms need only be construed if necessary to resolve the controversy. Petition at 4-10 (citations omitted). For purposes of this Preliminary Response, Patent Owner does not believe that any specialized constructions are necessary and reserves the right to respond to Petitioner's

additional arguments. Nevertheless, Petitioner fails to establish a reasonable likelihood of prevailing under any claim interpretation.

V. THE ASSERTED GROUNDS AND REFERENCES

The Petition seeks institution on the following Grounds, asserting obviousness under both 35 U.S.C. § 102 / 103:

Ground	Claim(s)	References
1	1-16	§ 102 / 103: Koebler650
2	1-16	§ 103: Koebler650, Kabel, Lagerstedt, Okano, Kirkwood, Breed

As discussed in detail below, Petitioner fails to establish a reasonable likelihood of prevailing with respect to independent claims 1, 15, and 16 for a number of independently sufficient reasons. Both Grounds in the Petition are premised on the alleged lack of written description provided by Koebler650 for the challenged claims. Because Ground 2 is only supplementing Koebler650 with secondary references to teach allegedly unsupported conditions of the challenged claims, it fails for the same reasons as Ground 1 – specifically, Koebler650 is not prior art. Therefore, it is not necessary to discuss the secondary references that relate only to Ground 2 for purposes of this Preliminary Response.

A. Overview of Koebler650

Aside from a priority claim, the Petition acknowledges that Koebler650 and the ’616 Patent share the same specification and is directed to the same underlying invention. Petition, 21. As discussed below, Koebler650 provides adequate written description for the challenged claims and cannot be intervening prior art thereof.

VI. INSTITUTION SHOULD BE DENIED BECAUSE THE PETITION RELIES ON ARGUMENTS PREVIOUSLY CONSIDERED WITHOUT SHOWING MATERIAL ERROR

The Board should exercise its discretion to deny the Petition under 35 U.S.C. § 325(d) because Petitioner fails to justify why the Board should reconsider arguments that were previously considered by the Office. Under 35 U.S.C. § 325(d), denial of institution of an IPR is proper if the petitioner challenges the patent on matters previously considered by the Office. *Advanced Bionics, LLC v. Med-EL Elektromedizinische Gerate GMBH*, IPR2019-01469, 2020 WL 740292, at 2 (PTAB Feb. 13, 2020) (precedential). Specifically, under the *Advanced Bionics* framework, denial is appropriate where: (1) the petitioner presents the same, or substantially the same, prior art or arguments previously presented to the Office, and (2) petitioner fails to demonstrate that the Office erred in a manner material to the patentability of the challenged claims. *Id*.

Here, Petitioner fails to demonstrate *any* error—and certainly no *material* error—during the examination of the ’616 Patent, despite relying on the very reference cited on the face of the ’616 Patent that the Office necessarily considered when allowing the patent.

A. Prosecution Of The ’616 Patent

As the Petition acknowledges, the ’616 Patent was filed on September 1, 2017, claiming priority to several continuation applications (*i.e.*, U.S. Patent Nos. 11,065,977, 9,682,624, 8,972,162, and 8,712,650 (Koebler650)) and a continuation-in-part application (*i.e.*, U.S. Patent No. 7,925,426).[2] Petition, 1-2.

During prosecution, the Examiner and Applicant conducted a July 16, 2020, telephonic interview to discuss, *inter alia*, a “112(b) issue with claims 1, 18, and 19, [and a] 112(a) issue with claims 15 and 16.” TESLA-1002, 35 (July 29, 2020, Examiner Interview Summary). That “112(a) issue” was whether the claims have adequate written description support. Thus, the Examiner was clearly considering whether Koebler650 provided written description and challenging those claims that

[2] For purposes of this Preliminary Response, the earlier priority claim to the ’426 CIP is not in dispute and will not be discussed. However, Patent Owner reserves the right to respond to any additional disputes Petitioner raises regarding this priority claim.

the Examiner believed lacked that support. Notably, the Examiner did not reject independent claim 1 for lack of written description. Instead, that claim was rejected over the prior art and the Examiner proposed amendments to distinguish the prior art to overcome that rejection. Critically, the conditions that Petitioner now argues lack written description support *were provided by the Examiner while he was considering whether the claims had written description*. For example, compare pending claim 1 prior to the Examiner's amendment with the pending claim following the entry of the *Examiner's suggested* amendments:

> 1. (Previously presented) An apparatus comprising:
>
> an interface configured to (a) receive (i) sensor data samples during operation of a vehicle and (ii) data from a telemetry system and (b) connect to a remote database;
>
> a memory configured to store (a) said sensor data samples over a number of points in time and (b) said data from said telemetry system; and
>
> a processor configured to (i) analyze said sensor data samples stored in said memory to determine current conditions and (ii) associate said current conditions with a route segment traveled by said vehicle, wherein (a) said route segment is identified according to said data from said telemetry system and (b) said current conditions associated with said route segment are uploaded to said remote database to create historical route information for a plurality of route segments.

Id., 69 (January 21, 2020, Applicant Amendment and Response).

Authorization for this examiner's amendment was given in a telephone interview with Atty. Paul Johnson (Reg. # 59,375) on 07/17/2020. The application has been amended as follows:

As per Claim 1, the entire claim 1 has been replaced by the following amended claim 1 :

--1. An apparatus comprising:

an interface configured to (a) receive (i) sensor data samples during operation of a vehicle and (ii) data from a telemetry system and (b) connect to a remote database;

a memory configured to store (a) said sensor data samples for different points in time along a route segment travelled by said vehicle and (b) said data from said telemetry system; and

a processor configured to (i) analyze said sensor data samples stored in said memory to determine current conditions and (ii) associate said current conditions with said route segment, wherein (a) said route segment is identified according to said data from said telemetry system and (b) said current conditions associated with said route segment are uploaded to said remote database to create historical route information for a plurality of route segments;

wherein the sensor data samples are received from at least one of an optical sensor, a position sensor, a speed sensor, a gyroscopic sensor, a revolutions-per-minute sensor, an accelerator pedal position sensor, a brake pedal position sensor, a battery state sensor, a tire pressure sensor, a proximity sensor, a weight sensor, an airflow sensor, and a gas flow sensor; and

wherein said current conditions comprise at least one of: drag, wind resistance, tire resistance, a location relative to a destination, traffic patterns, an amount of light energy, a position of the sun, geographical information, an elevation of said vehicle, a grade of a road, a location of stoplights, a timing of stoplights, weather, a wind direction, a wind velocity, a temperature, air pressure, moisture, visibility, an amount of vibration, and traction.—

Id., 28-29 (November 11, 2020, Notice of Allowance). The Examiner's amendment with the specifically enumerated sensor data samples and current conditions (shown in underline above) was eventually agreed to, leading to the Notice of Allowance. *Id*., 23-34 (November 11, 2020, Notice of Allowance).

B. The Office Previously Considered Koebler650

Under the first prong of the *Advanced Bionics* framework, the Board considers the non-exclusive factors listed in *Becton, Dickinson and Co. v. B. Braun Melsungen AG*, IPR2017-01586, 2017 WL 6405100 (PTAB Dec. 15, 2017) (precedential in part) to determine whether the same, or substantially the same, prior art or arguments were previously presented to the Office. *Advanced Bionics*, 2020 WL 740292 at 4, n.10. The Board confirmed that "this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown." *Id*. at 3.

For purposes of this Response, the only contested issue is whether the '616 Patent is entitled to the benefit of at least the parent continuation 8,712,650 ("Koebler650"). If so, the Petition must be denied as both Asserted Grounds of invalidity are based on Koebler650, which is not prior art. As noted, the Office considered whether Koebler650 provided written description support during prosecution and, while determining that it did for claim 1, the Examiner proposed amending the claims to include the current conditions Petitioner now challenges.

Thus, the Petition is merely trying to rehash an issue the Office already decided. *Hospira, Inc. v. Genentech, Inc.*, Case IPR2017-00739 (PTAB July 27, 2017) (Paper 16) (informative) (denying institution under 35 U.S.C. §325(d) where the Office previously considered and evaluated during examination the same arguments regarding a patent owner's priority claim). The Petition's conclusion that "Koebler650 was not previously considered by the Office" (Petition, 78) is wrong and assumes that the Office did not assess its own suggested amendments for written description support.

As discussed above, *the Office* suggested amendments to overcome various written description issues during an Examiner Interview. In other words, as the file history confirms, the Office considered the issue of written description support when the Office entered the Examiner's amendment adding to the challenged claims the very limitations that the Petitioner now argues lack the written description support. *Apple, Inc. v. Seven Networks, LLC*, No. IPR2020-00425, 2020 WL 5223099, at *5 (P.T.A.B. Sept. 1, 2020) (denying institution of IPR where a Petition was premised on a written description challenge of claim elements that "were not ones that slipped by without the Examiner noticing them," but rather "were entered by Examiner's amendment.").

Furthermore, the '616 Patent and Koebler650 share a common specification. The '616 Patent claims priority at least through, and is a continuation of, the

Koebler650 application. TESLA-1002, 171-278 (September 1, 2017, Original Filing and Application Data Sheet). And, as discussed above, the challenged claims were amended during prosecution to overcome prior art. *Id*., 107-123 (July 2, 2019, Amendment and Response), 28-29 (November 11, 2020, Notice of Allowance showing Examiner's amendment). For each of these claim amendments, the Examiner necessarily addressed whether the claims as amended found written description support in its specification (and its corresponding identical parent applications). M.P.E.P. §2163 (Guidelines for evaluating compliance with Written Description); *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976) (describing that the Examiner has the initial burden of challenging the adequacy of the written description of any claim as "[a] description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption.").

In fact, the Examiner was focused on the written description requirement when raising 112(a) and (b) issues with selected claims, including the presently challenged claims. TESLA-1002, 35 (July 29, 2020, Examiner Interview Summary). The Examiner had an obligation to consider written description. It is clear that the Examiner did, in fact, consider written description because he rejected claims on that basis when he believed it appropriate. But the Examiner

did not reject claim 1 for lack of written description and Petitioner does not identify any error in that determination.

Stated in another way, during prosecution of the ’616 Patent the Examiner considered written description and necessarily determined that Applicant established priority for the challenged claims based upon the Koebler650’s specific disclosure of using multiple sensors to provide its power management system with inputs from at least four categories of information: information from the external environment of the vehicle, information about the operational status of the vehicle, information from one or more command inputs, and operational parameters of the vehicle. TESLA-1004, 7:12-11:16.

C. The Petitioner Failed to Identify Any Material Error

Under the second prong of the *Advanced Bionics* framework, the petitioner must demonstrate that the Office made a material error regarding examination to avoid discretionary denial. *Advanced Bionics*, 2020 WL 740292 at 3.

Where a petitioner fails to address the material error requirement or otherwise is silent, the petitioner fails to meet its burden and the Board should deny institution. *See*, *e.g.*, *Wolfspeed, Inc. v. Trustees of Purdue Univ.*, IPR2022-00761, 2022 WL 16823522, at *6 (PTAB Nov. 8, 2022); *Atrium Med. Corp. v. Bard Peripheral Vasulcar, Inc.*, IPR2021-01197, 2022 WL 128799, at *10 (PTAB Jan. 10, 2022) (finding the two-part test of *Advanced Bionics* was not satisfied where

the Petition had "no express assertion that *any* error was committed by the Office [such that] Petitioner leaves the Board to guess or develop its own theory on what error may have been committed."). A petitioner does not establish a material error simply by disagreeing with the Office's conclusion regarding the prior art or prior arguments. *Advanced Bionics*, 2020 WL 740292 at 3.

The Petition is devoid of any facts that establish any error in the Office's examination of the '616 Patent. The Petition merely concludes that "the Examiner erred for the reasons discussed in [§III.D]."[3] However, §III.D summarily asserts that Koebler650 fails to describe a selected subset of current conditions without any consideration of the written description factors described in §VIII.B, *supra*. In fact, the Petition at §III.D discusses seven of the ten allegedly unsupported conditions in a single paragraph—without any detailed reasoning—to conclude that the specification failed to provide written description support for the seven unsupported conditions. But the Petition does not even acknowledge that the Examiner not only considered written description, but also proposed the terms the Petition argues lack written description support. The Petition does not identify any

[3] Patent Owner notes that the Petition references §II.D and assumes this likely is a typographical error as there is no §II.D in the Petition. Therefore, the Response addresses §**III**.D.

additional facts or evidence that the Examiner failed to consider warranting reconsideration of prior arguments. *Apple, Inc. v. Seven Networks, LLC*, No. IPR2020-00425, 2020 WL 5223099, at *7 (P.T.A.B. Sept. 1, 2020) (citing *Advanced Bionics*, Paper 6 at 9.) ("Even if 'reasonable minds can disagree' as to whether there is adequate support in the [parent] application for the Examiner's amendment, the Office did not materially err."). Thus, the Petition should be denied.

VII. THERE IS NO REASONABLE LIKELIHOOD THAT PETITIONER WILL PREVAIL ON ANY CLAIM

As explained above, the Board should exercise its discretion to deny the Petition. Were the Board to substantively consider it, however, it should be denied because there is no reasonable likelihood that Petitioner will prevail on any claim.

Both of Petitioner's Grounds of invalidity are based on its argument that the disclosure of one of the '616 Patent's priority documents—Koebler650—fails to provide written description support for various "current conditions" as recited in the '616 Patent claims. According to the Petition, the independent claims of the '616 Patent require analyzing sensor data samples to determine 21 enumerated current conditions (*e.g.*, drag). Petition at 3.

Of the 21 current conditions listed in claim 1, Petitioner acknowledges that "11 current conditions … are supported by Koebler650" but argues the other ten

were never mentioned or described in any of the priority documents of the '616 Patent. *Id*. at 10 and 11 (Table of Supported v. allegedly Unsupported Current Conditions shown below).

Supported Current Conditions	Allegedly Unsupported Current Conditions
drag	location of stoplights
wind resistance	timing of stoplights
tire resistance	weather
location relative to a destination	wind direction
traffic patterns	wind velocity
amount of light energy	temperature
position of the sun	air pressure
geographical information	moisture
elevation of said vehicle	amount of vibration
grade of a road	traction
visibility	

Petitioner is wrong. As described below, Koebler650 provides written description support for all 21 conditions. Because the parent application (Koebler650) of the '616 continuation shares a common, identical specification to the '616 Patent *and* provides adequate written support to the challenged claims, the

'616 is entitled to priority to Koebler650 application such that it is not prior art and cannot anticipate any, let alone all, of the challenged claims.

VIII. THE '616 PATENT CLAIMS ARE ENTITLED TO THE BENEFIT OF AT LEAST THE FILING DATE OF KOEBLER650

Petitioner's only challenge is that Koebler650 does not provide sufficient written description support for the 10 "allegedly unsupported current conditions." This fails because, as Petitioner acknowledges, Koebler650 describes exemplary, known sensors that *can* determine all of the claimed current conditions (*e.g.*, visibility, wind resistance, and position of the sun—all related to weather). *See*, *e.g.*, Petition, 30.

Koebler650 provides various examples of sensors for obtaining the many parameters that it describes as impacting the optimal power consumption of a vehicle, which parameters relate to: information from the external environment of the vehicle, information about the operational status of the vehicle, information from one or more command inputs, and operational parameters of the vehicle. TESLA-1004, 8:25-29, 65-9:4, 59-61, 11:7-9.

Notably, Koebler650 expressly contemplates that "[t]hese examples of [information about the external environment / operational status information inputs / command inputs / operational parameters] are only intended to illustrate the kinds of external information that may be used by the power management devices and

systems described herein and are not intended to be limiting." *Id*. The novelty of the '616 Patent is not the sensor data its systems process. Instead, the '616 Patent expressly contemplates modifications to the sensors and its respective data as within the scope of its invention.

Therefore, Koebler650's written description cannot be limited to a *specific* current condition received from a *specific* sensor. *See also* Koebler650, 21:29-62 ("Any appropriate sensors, detectors or data inputs may be used with the power management devices and systems described herein."). In view of this disclosure, Koebler650 conveys with reasonable clarity to one skilled in the art that, as of the filing date of Koebler650, the inventor was in possession of all claimed current conditions that can be derived from any number of known sensors. Thus, the claims of the '616 Patent should be afforded the benefit of the filing date of Koebler650.

A. Legal Standard For Priority Under 35 U.S.C. § 120

The effective filing date of a patent claim is the filing date of an earlier filed patent application if: (1) the earlier filed patent application shares at least one common inventor with the later filed patent application (35 U.S.C. § 120 (pre-AIA)): (2) the patent contains a specific reference to the earlier filed application (*id*.); (3) the later filed application is filed before the patenting or abandonment of the first application or an application similarly entitled to the benefit of the filing

date of the first application (*id*.); and (4) the claim is described and enabled[4] under § 112 by the earlier filed application (*id*.).

The Petition does not, and cannot, dispute that the first three conditions of 35 U.S.C. § 120 are met. First, the earlier filed priority applications have the same inventors as the later filed applications. Like Koebler650, the inventors of the '616 Patent (*i.e.*, Martin Koebler, Jason Harper, Stephen Brown, and Nicole Goldstein) are also the inventors of each priority application—namely, U.S. Patent Nos. 11,065,977, 9,682,624, 8,972,162, and Koebler650. TESLA-1005, 1; TESLA-1006, 1; TESLA-1007, 1; TESLA-1004, 1.

Second, the '616 Patent, and each intervening priority document, includes a specific reference to earlier filed applications. Specifically, the '616 Patent includes a specific reference to the application of the '977 patent, the application of the '624 patent, the application of the '162 patent, and the application of

[4] The Petition does not dispute enablement or discuss any of the factors relevant to an enablement analysis (*e.g.*, the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, and the breadth of the claims). *See*, *e.g.*, *In re Wands*, 858 F.2d 731, 737 (Fed.Cir.1988).

Koebler650. TESLA-1001, 1. The ’977 patent includes a specific reference to the application of the ’624 patent, the application of the ’162 patent, and the application of Koebler650. TESLA-1005, 1. The ’624 patent includes a specific reference to the application of the ’162 patent and the application of Koebler650. TESLA-1006, 1. And the ’162 patent includes a specific reference to the application of Koebler650. TESLA-1007, 1.

Third, the ’616 Patent and each priority application was copending with at least one earlier priority application. The ’616 Patent was filed on September 1, 2017, during the pendency of the ’977 patent. TESLA-1001, 1. The ’977 patent was filed on June 19, 2017, during the pendency of the ’624 patent. TESLA-1005, 1. The ’624 patent was filed December 11, 2014, during the pendency of the ’162 patent. TESLA-1006, 1. And the ’162 patent was filed on March 12, 2014, during the pendency of Koebler650. TESLA-1007, 1.

Instead, the entirety of the Petition is premised on Petitioner’s argument that Koebler650 does not provide written description support for 10 of the claimed “current conditions”. But the Petition is wrong. Koebler650 and the intervening priority applications each describes all the limitations of the ’616 Patent claims, discussed below and, thus, Koebler650 is not prior art to the ’616 Patent.

B. The Petition Misapplies The Law Of Written Description

To satisfy the written description requirement, the specification must describe the invention in sufficient detail so "that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought." *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed.Cir.1997); *see also Hynix Semiconductor Inc. v. Rambus Inc*., 645 F.3d 1336, 1351 (Fed. Cir. 2011) (confirming that the test for written description is whether the disclosure relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date); *see also ScriptPro LLC v. Innovation Assoc., Inc.* 833 F.3d 1336, 1341 (Fed. Cir. 2016) (confirming "a specification's focus on one particular embodiment or purpose cannot limit the described invention where the specification expressly contemplates other embodiments or purposes."). The standard for written description does not require the specification to provide verbatim support for the claims. *In re Kaslow*, 707 F.2d 1366, 217 US PQ 1089 (Fed. Cir. 1983).

But the Petition misapplies this law. It appears that the Petitioner and its expert believe the claim term must be recited *verbatim* in the specification for there to be sufficient written description. *See*, *e.g.*, Petition, 15 ("The word 'moisture' is absent … [n]or is there any disclosure of any synonym for 'moisture.'"), 17 ("The word 'vibration' is absent … [n]or is there any disclosure of any synonym for

'vibration.'"), 18 ("The word 'traction is absent … [n]or is there any disclosure of any synonym for 'traction.'"). In fact, Petitioner's expert argues that "the text of the Challenged Claims was not included anywhere in the Koebler-Priority-Documents" to conclude that Koebler650 fails to provide adequate written description. TESLA-1003, ¶58. However, the claims need not find literal support to satisfy the written description requirement. *In re Kaslow*, 707 F.2d 1366 (explaining the test for the written description requirement for a patent is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.).

Had Petitioner properly conducted a written description analysis, it would have concluded that one skilled in the art would understand that Koebler650 provides sufficient written description for all of the claimed Current Conditions. Koebler650 discloses a variety of known sensors that can be used to obtain information from the external environment of the vehicle, information about the operational status of the vehicle, information from one or more command inputs, and operational parameters of the vehicle, and contemplates that "[t]hese examples of [information about the external environment / operational status information inputs / command inputs / operational parameters] are only intended to illustrate

the kinds of external information that may be used by the power management devices and systems described herein and are not intended to be limiting." TESLA-1004, 8:25-29, 65-9:4, 59-61, 11:7-9, 21:29-62. The specifically claimed embodiments of these "Current Conditions" are merely examples of the types of conditions contemplated by the patent. *See ScriptPro*, 833 F.3d at 1341-42 (reversing the district court's finding of lack of written description for sorting based on *patient identifying information* "because the application at issue recited that sorting could be accomplished 'by patient, prescription, or *other predetermined storage scheme*.'").

"There is a presumption that an adequate written description of the claimed invention is present when the application is filed" and it is the Examiner's burden to show otherwise. *In re Wertheim*, 541 F.2d 263; *see also In re Koller*, 613 F.2d 819, 204 USPQ 702 (CCPA 1980) (original claims constitute their own description). The lack of *verbatim* support in the specification is insufficient to overcome the presumption, especially when a skilled artisan reading the description would recognize that the inventor had possession of the invention. *Id*.

C. Koebler650 Describes All Claimed Current Conditions

Other than conclusory statements, the Petition provides no evidence that one skilled in the art would not understand that applicant had possession of the allegedly "unsupported Current Conditions." Instead, both the Petition and the

supporting declaration repeat their conclusory accusations that "[n]othing in Koebler650 would have led a POSITA to discern that patentee had possession of a system that determines [allegedly "unsupported Current Condition"] in the manner required by the claims." Petition at 15, 17, 18.

Petitioner advocates for a relatively high level of ordinary skill that requires multiple years of education and experience directed to the subject of the invention. As Petitioner's expert explains, "one of ordinary skill in the art … would have had a bachelor's degree in electrical engineering, computer engineering, mechanical engineering, civil engineering (transportation systems), physics, or a related field, and at least four years of experience (or the academic equivalent) in the field of transportation systems." Petition, Declaration 1003, ¶28.

The Petition is wrong to reason that one of ordinary skill—particularly one with as much experience and education as Petitioner argues—would not understand that Koebler650 describes all claimed conditions that are received from known sensors, whether claimed or unclaimed, only because the "the text of the Challenged Claims was not included anywhere in the Koebler-Priority-Documents." TESLA-1003, ¶58. Such an analysis does not accurately consider the knowledge of the person or ordinary skill when reading the specification as a whole in view of well-known concepts. *See*, *e.g.*, *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379-80, 231 USPQ 81, 90 (Fed. Cir. 1986)

(explaining that information that is well known in the art need not be described in detail in the specification).

Furthermore, Petitioner's reasoning for limiting the written description of Koebler650 to specifically enumerated sensors and data types has been rejected by the Federal Circuit. *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (explaining that "[i]f everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment as operated, there would be no need for claims.").

The Petition's reliance on *Research Corp. Techs., Inc. v. Microsoft Corp.*, 627 F.3d 859 (Fed. Cir. 2010) is also misplaced. In *Research Corp.*, the claims were limited to a blue noise mask because the title, abstract, and detailed disclosure emphasized only a single embodiment (*Research Corp*., 627 F.3d 872). In contrast, Koebler650 discloses in its specification multiple variations of the current conditions that appear in the challenged claims for facilitating the process for improving power consumption of a vehicle. TESLA-1004, 8:25-29, 65-9:4, 59-61, 11:7-9, 21:29-62.

And unlike the two PTAB decisions that Petitioner cites as allegedly having similar facts (Petition, 12-13 (*citing* IPR2019-00329 (*Dr. Reddy's Laboratories S.A. and Dr. Reddy's Laboratories, Inc., v Indivior UK Limited*) and IPR2023-

00319 (*LG Electronics, Inc. v. Constellation Designs, LLC*))), the challenged claims do not recite claim ranges where a person of skill in the art would not understand how to select the beginning and end points without undue experimentation. In *Dr. Reddy*, the PTAB reasoned that a claimed film having "about 48.2 wt% to about 58.6 wt%" of the water soluble polymeric matrix did not find written description support where neither a range by weight of the composition to an unidentified maximum nor a disclosure of discrete values within some range was described in the specification. *Dr. Reddy*, Paper 21, 21.

Similarly, in *LG Electronics*, the PTAB found lack of written description for a claim LDPC code rate being "equal to or greater than 3/8 and less than or equal to 6/8" as "there does not appear to be a way in [the disclosure] for determining how to select the beginning end points of the code rate ranges. *LG Electronics*, Paper 10, 11-13. Even still, the PTAB—in both of these cases—*did* find written description support for other challenged claims when considering the proper factors for a written description analysis. *Dr. Reddy*, Paper 21, 22 (determining that there *is* written description support for other ranges of other selected claims); *LG Electronics*, Paper 10, 14-15 (determining written description for a second group of claims).

Here, unlike reciting discrete endpoints of ranges for an invention in unpredictable arts, the presently challenged claims of the '616 patent clearly recite

known sensors and predictable sensor data that one of ordinary skill in the art would understand those known sensors to receive. *See In re Fisher*, 427 F.2d 833, 839 (CCPA 1970) (indicating patents in the mechanical or electrical arts involve predictable factors).

Additionally, the Federal Circuit has recently vacated similar PTAB decisions finding invalidity for lack of written description of closed ranges and confirmed that "written description is assessed on a case-by-case basis and that 'broadly articulated rules are particularly inappropriate in this area.'" *RAI Strategic Holdings, Inc. v. Philip Morris Products S.A.*, No. 22-1862 (Fed. Cir. Feb. 9, 2024) (emphasizing that one must consider the technology at issue, the predictability of the art, the complexity of the claim limitation and the knowledge gained by a person skilled in the art reading the specification).

Considering the knowledge of those skilled in the art and the predictability in the mechanical / electrical arts, disclosure of representative conditions measured by these known sensors provides written description for the claimed allegedly unsupported conditions. Each allegedly unsupported condition is discussed in further detail below.

1) Weather / Wind Direction / Wind Velocity / Temperature / Air Pressure / Moisture

First, to the extent Petitioner's argument is that the weather current conditions must be determined based on the specific sensors recited in the challenged claims, Patent Owner notes that the claims recite systems that "comprise" certain sensors, but the claims do not exclude other sensors. In other words, there is nothing in the claim that precludes the addition of other known sensors (such as the "weather" sensor expressly disclosed in Koebler650 (TESLA-1004, 8:12-19)) or using those other sensors to determine a particular condition (provided that at least one of the claimed, enumerated sensors are *also* included).

Koebler650 expressly describes the use of these known sensors to determine weather conditions: it unambiguously states that its "power management device may include ... weather sensors" to determine various weather conditions. *Id*., 8:12-24 ("For example, the power management device may include … one or more optical sensors (*e.g.*, to determine the intensity of sunlight, visibility, distance from nearby vehicles, etc.), and/or weather sensors (*e.g.*, temperature, wind direction and velocity, air pressure, etc."), Fig. 8 (weather 809, temperature of the external environment 807), 7:45-62, 3:41-67, 21:29-62. Koebler650 literally describes these various weather conditions measured by the disclosed weather sensors as

including wind direction (*id*., 3:41-67), wind velocity (*id*.), temperature (*id.*, 8:12-24), and air pressure (*id*., 3:41-67). *See also id*., 7:32-8:24.

And while there is no *verbatim* disclosure of "moisture," Koebler650 does show that rain and/or snow conditions (*i.e.*, moisture conditions) can be determined. *Id*., 21:34-57, Figs. 8-9. In other words, one of skill in the art would understand that moisture is a type of weather condition that can be determined using known sensors. In fact, Petitioner's own expert admits that one of skilled in the art "would have understood that moisture could have been determined, for example, by analyzing sensor data samples that are received from a moisture sensor," but only concludes that a moisture sensor is not a specific sensor enumerated in the application. TESLA-1003, ¶81.

Even assuming the claimed conditions *must be* determined using *only* the sensors enumerated in the claims—they are not—a person of ordinary skill in the art would understand from Koebler650 that the inventors were in possession of this idea. For example, Petitioner does not dispute that one of ordinary skill in the art would understand the claimed optical sensor could measure weather (*e.g.*, the presence of snow or rain), the claimed tire pressure sensors and/or weight sensors to determine temperature, and the claimed velocity and airflow sensors to determine wind velocity or direction. For example, the claimed power management system could know that at temperature X and a weight Y (using

weight sensors), the tire pressure (using tire pressure sensors) should be Z. Then, monitoring these sensors over time, if the weight changes while the tire pressure changes, the temperature must have changed. Similarly, if the airflow sensors monitor a change in airflow for a given velocity (using velocity sensors), the power management system could determine direction or velocity of wind acting on the sensors.

Additionally, as in *ScriptPro*, Koebler650 expressly contemplates embodiments beyond the enumerated sensors and the data they receive. TESLA-1004, 8:25-29, 65-9:4, 59-61, 11:7-9, 21:29-62. And like *ScriptPro*, Koebler650 expressly contemplates that other sensors and information are within the scope of the invention. *Id*., 8:25-29, 65-9:4, 59-61, 11:7-9, 21:29-62. Therefore, Petitioner's separate assertion that there is no teaching or suggestion in Koebler650 that data collected by enumerated sensors is used to determine weather conditions, including wind direction, wind velocity, temperature, air pressure, is wrong. Petition, 19-20; Petition, Declaration, ¶90. Notably, the Petition groups "weather," "wind direction," "wind velocity," "temperature," and "air pressure" together but fails to provide any detailed analysis of how Koebler650 fails to inform one of ordinary skill in the art that the claimed invention can analyze this weather information from known weather sensors.

In view of the disclosure of multiple embodiments, one skilled in the art would understand that Koebler650 is not limited to the specifically enumerated sensors and its particular data received. Instead, disclosure of other embodiments conveys with reasonable clarity to those skilled in the art that as of the filing date of Koebler650, the inventor was in possession of a power management system that could receive weather data, such as from a weather service having an optical sensor without undue experimentation. In fact, Petitioner acknowledges that Koebler650 provides written support for visibility, wind resistance, and position of the sun—all conditions related to weather. Petition, 30. Even more, the Petitioner and its expert both agree that in addition to the expressly enumerated sensors, the '616 Patent teaches "configurations of a 'power management system [that] may communicate with a weather service,'" to conclude that there is no inherent disclosure for receiving information related to the separately claimed "moisture". Petition, 16; Petition, Declaration, ¶82. Petitioner's expert even admits that one of ordinary skill would understand that a weather service can provide real-time weather information. Petition, Declaration, ¶82.

Petitioner's inherency argument is misplaced. Specifically, Petitioner's expert reasons that it is not inherent for a weather service to provide moisture to a recipient device and provides a teaching of a weather service that provides real-time weather information that does not include moisture information. Petition,

Declaration, ¶82. But written description does not require the specification to show that every weather sensor or service will always provide moisture information. In other words, finding a single example of a sensor that may not provide moisture information—particularly if one of skill in the art would understand how to obtain such information without undue experimentation (*e.g.*, from a known moisture sensor)—has no bearing on whether Koebler650 provides written description of the claimed moisture conditions. *See*, *e.g.*, *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379-80, 231 USPQ 81, 90 (Fed. Cir. 1986) (explaining that information that is well known in the art need not be described in detail in the specification).

2) Location of Stoplights / Timing of Stoplights

As before, there is nothing in the "comprising" claim that precludes the addition of other known sensors or using those other sensors to determine a particular condition (provided that at least one of the claimed, enumerated sensors are *also* included). Here, Koebler650 explains that its "power management logic" receives "condition" information including "traffic information or data" such as "the location of stoplights [and] the timing of stoplights." Koebler650, 3:41-52, 7:32-8:24. The specification explains that "this information may be acquired by measuring (*e.g.*, from sensors) …." *Id*., 3:63-67. And Koebler650 teaches

exemplary sensors (*e.g.*, optical sensors) for determining these traffic conditions. *Id*., 8:12-24.

Second, assuming the claimed conditions *must be* determined using *only* the sensors enumerated in the claims—they are not—a person of ordinary skill in the art would understand from Koebler650 that the inventors were in possession of this idea. In fact, Petitioner's own expert argues that one of skilled in the art would have turned to the prior art to understand "particular techniques of detecting traffic-related current conditions, such as the location of stoplights and the timing of stoplights using a positioning system arranged within a vehicle." TESLA-1003, ¶177. But Petitioner's expert fails to acknowledge that a position sensor is one of the expressly enumerated sensors. TESLA-1001, 27:51. Instead, one of ordinary skill in the art would understand the claimed position sensor or optical sensor could measure traffic conditions (*e.g.*, the location of stoplights and the timing of stoplights).

Additionally, as in *ScriptPro*, Koebler650 expressly contemplates embodiments beyond the enumerated sensors and the data they receive. TESLA-1004, 8:25-29, 65-9:4, 59-61, 11:7-9, 21:29-62. And like *ScriptPro*, Koebler650 expressly contemplates that other sensors and information are within the scope of the invention. *Id.*, 8:25-29, 65-9:4, 59-61, 11:7-9, 21:29-62). Therefore, Petitioner's separate assertion that there is no teaching or suggestion in Koebler650

that data collected by enumerated sensors is used to determine location of stoplights is wrong. Petition, 19-20; Petition, Declaration, ¶90. Notably, the Petition groups "location of stoplights" with six other allegedly unsupported conditions but fails to provide any detailed analysis of how Koebler650 fails to inform one of ordinary skill in the art that the claimed invention can analyze stoplight location information from known sensors.

In view of the disclosure of multiple embodiments, one skilled in the art would understand that Koebler650 is not limited to the specifically enumerated sensors and its particular data received. Instead, disclosure of other embodiments conveys with reasonable clarity to those skilled in the art that as of the filing date of Koebler650, the inventor was in possession of a power management system that could receive stoplight location information, such as from an enumerated sensor without undue experimentation.

3) Traction

Again, the challenged "comprising" claim is not limited to the addition of other known sensors or using those other sensors to determine a particular condition (provided that at least one of the claimed, enumerated sensors are *also* included). Kobler650 expressly describes determination of "traction" conditions from these known sensors. In particular, Koebler650 teaches the use of sensor measurements to ascertain "forces acting on the vehicle" including "tire

resistance"—a measure of friction between tire and road, which is traction. TESLA-1004, 7:36-41. Likewise, Kobler650 explains that "operational status information" may be determined such as "rolling resistance of the vehicle" using "sensors." *Id.*, 4:1-18; *see also id*., 8:36-40 ("operational status information" can be determined for a vehicle's "component parts" including the "powertrain" and tires"); 8:41-51 (noting that "tire pressure" and "drag force due to rolling resistance of the vehicle" can be determined"); 10:62-63 (noting that "[r]olling resistance parameters" may be "measured"). Likewise, "drivetrain efficiency" can be "measured from the power input vs. the power output." *Id.*, 11:1-7. So, while Kobler650 does not use the word "traction," this is one of the conditions the described system determines: tire and drivetrain condition, including traction, can be measured/determined using known sensors. In fact, Petitioner's own expert admits that "a POSITA would have understood that traction could have been determined, for example, by analyzing sensor data samples received from a friction sensor," but only concludes that a friction sensor is not a specific sensor enumerated in the application. Petition, Declaration, ¶89. Petitioner's expert fails to explain how a POSITA would not understand that the power management system could process and analyze the friction information from known sensors.

To the extent the claimed traction *must be* determined using *only* the sensors enumerated in the claims, a person of ordinary skill in the art would understand

from Koebler650 that the inventors were in possession of this idea. Petitioner's expert does not dispute that a POSITA would understand one of the claimed sensors—such as a position sensor, a speed sensor, a gyroscopic sensor, or a revolutions-per-minute (RPM) sensor—could not be used to determine traction. For example, for a given tire size and a measured RPM of the tire, a POSITA could determine the expected speed and compare that to the results of the speed sensor to analyze traction. Slippage and loss of traction can be derived from vehicle speed and wheel rotations per minute.

Koebler650's disclosure of: (i) representative sensors, (ii) conditions measured by those sensors, and (iii) modifications to those embodiments being within the scope of the invention—in view of Petitioner's admission that, prior to the filing of Koebler650, the allegedly unsupported conditions could be determined by known sensors—demonstrates that Koebler650 meets the written description requirement for the claimed "traction." As Petitioner acknowledges, Koebler650 discloses sensors for receiving various supported current conditions.

4) Amount of Vibration

As the challenged "comprising" claim is not limited to the addition of other known sensors, Koebler650 expressly describes known sensors that can determine an "amount of vibration." In particular, Koebler650's system is able to determine "present road conditions" "by acquir[ing] ... sensor[]" measurements. TESLA-

1004, 3:41-64, 7:32-8:24. Similarly, Koebler650 explains that its system includes "sensors for detecting external environment information" such as "upcoming terrain." Koebler650, 21:31-39. These sensors can include, for instance, "gyroscope information" capable of determining the "vehicle's current orientation." *Id.*, 42-43. By referencing the use of known vibration sensors for engine monitoring and/or road condition sensing—like gyroscopes—capable of determining "road condition," a POSITA would understand Koebler650 to describe determination of "vibration."

One of skill in the art would similarly have understood that other sensors would not undermine the claimed invention of the '616 Patent. In other words, one of skill in the art would have understood that other sensors and the data they are intended to receive, including those enumerated sensors and supported current conditions, would perform similarly as one another. Koebler650 provides with reasonable certainty to one skilled in the art that the inventor was in possession of the claimed current conditions.

To the extent the claimed "amount of vibration" *must be* determined using *only* the sensors enumerated in the claims, Petitioner's own expert admits that "a POSITA would have [understood that] amount of vibration could have been determined, for example, by analyzing sensor data samples that are received from a vibration sensor and/or accelerometer (or sensor data generated by a vibration

sensor and/or an accelerometer." Petition, Declaration, ¶86. But Petitioner's expert fails to recognize that several of the enumerated sensors, such as the claimed gyroscopic sensor, is an accelerometer. Petitioner's expert fails to explain how the POSITA would not understand that the power management system could process and analyze the vibration information from claimed sensors that he admits could determine such data.

Koebler650's disclosure of: (i) representative sensors, (ii) conditions measured by those sensors, and (iii) modifications to those embodiments being within the scope of the invention—in view of Petitioner's admission that, prior to the filing of Koebler650, the allegedly unsupported conditions could be determined by known sensors—demonstrates that Koebler650 meets the written description requirement for the claimed vibration. As Petitioner acknowledges, Koebler650 discloses sensors for receiving various supported current conditions.

IX. CONCLUSION

For at least the foregoing reasons, Patent Owner respectfully submits that institution should be denied.

Dated: July 16, 2024

Respectfully submitted

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WORD COUNT CERTIFICATION

Pursuant to 37 C.F.R. § 42.24(d), I certify that this Preliminary Response contains 8,173 words based on the word count indicated by Microsoft Word, excluding the portions exempted by 37 C.F.R. §§ 42.24(a) and (b).

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6, I hereby certify that the foregoing Patent Owner's Preliminary Response were served by electronic mail on the following counsel of record for Petitioner:

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