

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.

Petitioner

v.

BULLETPROOF PROPERTY MANAGEMENT, LLC.

Patent Owner.

IPR2026-00228
Patent 12,240,456

PATENT OWNER’S PRELIMINARY RESPONSE

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Patent Trial and Appeal Board

U.S. Patent and Trademark Office

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Alexandria, VA 22313-1450

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Patent Owner's Exhibit List

Exhibit No.	Description
2001	RESERVED
2002	Case Readiness Status Report in <i>Bulletproof Property Management, LLC, v. Tesla, Inc.</i> , Case No. 1:25-cv-00665, Dkt. 34 (W.D. Tex. Mar. 10, 2026)(“CRSR”)
2003	Westlaw Analysis of Honorable Alan D. Albright's Stay Statistics in Intellectual Property Matters
2004	Notice of Venue Discovery in <i>Bulletproof Property Management, LLC, v. Tesla, Inc.</i> , Case No. 1:25-cv-00665, Dkt. 16
2005	Information Disclosure Statement in U.S. App. No. 18/928,130 (continuation application) (December 6, 2024)
2006	Non-Final Rejection in U.S. App. No. 18/928,130 (continuation application) (December 17, 2024)
2007	Scheduling Order Entered by Judge Albright in WDTX

I. Introduction

Pursuant to 37 C.F.R. § 42.107, Patent Owner Bulletproof Property Management, LLC (“Bulletproof” or “Patent Owner”), submits this Preliminary Response to the Petition for *Inter Partes* Review (“Petition” or “Pet.”) of U.S. Patent No. 12,240,456 (the “‘456 Patent”). Petitioner Tesla, Inc., (“Petitioner” or “Tesla”) challenges the validity of claims 1-10 of the ‘456 Patent (“Challenged Claims”). The above-captioned proceeding is one of seven *inter partes* review petitions filed by the Petitioner concerning the patents asserted in the underlying Texas litigation. The full list of proceedings includes IPR2026-00227 (U.S. Pat. No. 11,932,230), IPR2026-00219 (U.S. Pat. No. 12,221,104), IPR2026-00204 (U.S. Pat. No. 12,227,184), IPR2026-00222 (U.S. Pat. No. 12,233,871), IPR2026-00228 (U.S. Pat. No. 12,240,456), IPR2026-00205 (U.S. Pat. No. 12,240,457), and IPR2026-00229 (U.S. Pat. No. 12,240,458).

As pointed out in the Petition, the examiner determined that no prior art discloses element 1[f]. Petition at 6.

Claim 1	
1[f]	the drive system operable to select a direction for driving the wheels in response to a pattern of steering angle movements, without operator indication of a direction.

Petitioner has failed to identify these limitations in the prior art. They do not exist. Moreover, the Petition seeks to substitute and rely upon impermissible expert opinion and other forms of “general knowledge” to supply a missing claim limitation. The Office has confirmed that this is not appropriate. *See* Memorandum dated July 31, 2025. Additionally, Petitioner’s failure to provide meaningful claim constructions has impermissibly shifted the burden to Patent Owner, and institution should be denied for this additional reason.

As such, the Petition has not established a reasonable likelihood that any of the Challenged Claims are obvious. Accordingly, Patent Owner respectfully requests that the Director deny institution.

II. Overview and Claim Construction of the ‘456 Patent

The ‘456 Patent discloses inventive systems for operating motor vehicles, and for a safer and more convenient unparking process. This process includes recognizing when the driver is likely to want to shift gears (from drive to reverse, or vice versa). Since so many car trips begin with the driver backing out of either a residential driveway or a parking space by using a recognizable pattern of non-shifting vehicle control inputs, Mr. Langlotz realized that the process could be learned and largely automated by the vehicle recognizing these patterns without screen-swiping or other directional input from the vehicle operator; this would decrease driver distraction, improve convenience, and keep the driver’s eyes on the road and hands safely on the wheel. An example is provided in Figure 2.

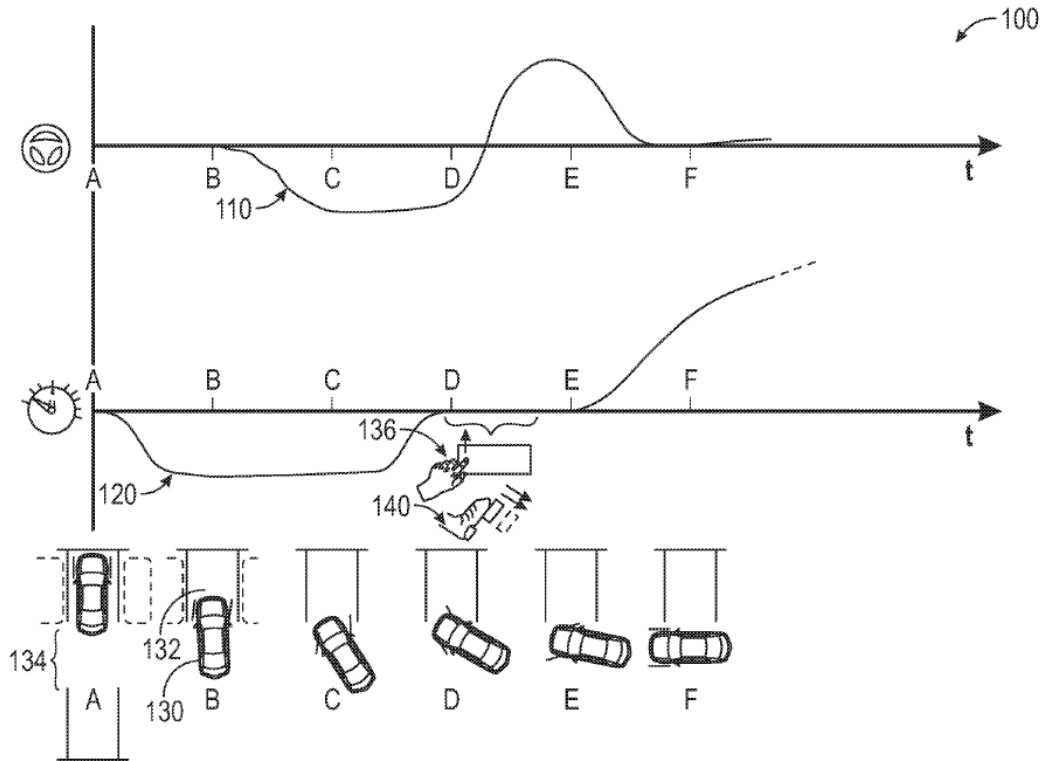


FIG. 2

Patent Owner states that, in claim 1[f], the phrase “response to a pattern of steering angle movements” means “response to a pattern of steering angle movements *of the operator.*”

P.O. Proposed Construction - Claim 1	
1[f]	the drive system operable to select a direction for driving the wheels in response to a pattern of steering angle movements <u>of the operator</u> , without operator indication of a direction.

This conclusion is supported by the specification. The specification defines the driver 34 and steering wheel or yoke 40. ‘456 Patent at 2:37-38; 2:48 (respectively, *See also* Fig. 1). The specification confirms that one of the purposes is to “serve to train cautious *driver* behavior.” *Id.* at 4:41-44. “[t]he typical operation of the system is in the context of ‘unparking,’ when a *driver* backs out of a parking spot in reverse,

steers to adjust direction while reversing, then shifts to drive, *steers the other direction*, then straightens out to proceed.” *Id.* at 2:61-65.

Moreover, this is the only logically sound conclusion. There are only two entities capable of steering angle movements; the driver (operator) and the car itself (controller). As the controller is responding to the pattern of steering angle movements, it must be responding to the *operator’s* steering angle movements. A controller cannot respond to itself, and it is logically unsound to conclude otherwise. Nor is it a “response” if the controller dictates all movements and shifts of the vehicle without any operator input.

In contrast, Petitioner fails to set forth any specific construction for these terms that are necessary to support its position. 37 CFR § 42.104(b)(3) (a petition must set forth “[h]ow the challenged claim is to be construed.”). While Patent Owner only provides constructions for the above terms, it should be noted that based on the Petitioner’s arguments, the Petition should have construed the following terms for claim 1[f]: “select a direction,”¹ “pattern,”² “response to a pattern,”³ “movements,”⁴ and “steering angle movements.”⁵ Rather than meaningfully addressing claim construction, Petitioner has attempted to map an autonomous unparking process (in Joos) that does not comprise responding to driver inputs or movements (or a pattern thereof) to claims which do comprise these limitations. As such, Petitioner has

¹ See *Infra* at §III(A), Pet. at 20.

² See *Infra* at §III(A), Pet. at 21; §III(B)(2)-(3).

³ *Id.*

⁴ See *Infra* at §III(B)(3)

⁵ *Id.*

improperly attempted to shift its claim construction burden onto Patent Owner, and thus the Petition should be denied institution.

III. All Grounds fail because Petitioner has failed to show that it is more likely than not that any reference, alone or in combination, teaches or suggests the limitations of independent claim 1[f].

A. Petitioner has not supplied the missing claim limitations from the prior art

At the outset Patent Owner notes that the Office, on July 31, 2025, issued a memorandum stating that “applicant admitted prior art (AAPA), expert testimony, common sense, and other evidence that is not ‘prior art consisting of patents or printed publications’ (collectively, ‘general knowledge’) may not be used to supply a missing claim limitation.” Memorandum dated July 31, 2025. “[P]etition[s] for inter partes review (IPR) ‘must specify where each element of the claim is found in the prior art patents or printed publications relied upon.’” *Id.* It is Petitioner’s burden to establish a reasonable likelihood of invalidity of at least one Challenged Claim.

Patent Owner brings this up at the outset to explain that the Petition fails to comply with the July 31, 2025 memorandum and fails to supply evidence that the *prior art* discloses limitation 1[f]. This can be seen throughout the Petition, where citation to expert testimony is used in place of actual disclosure in the prior art. *The distinction between what Joos discloses, and what the Petition assumes and argues based on this disclosure*, is apparent throughout. Petitioner has mapped its arguments, not the prior art itself, to the Challenged Claims. A non-exhaustive list is provided below, and Patent Owner submits that each of the following is a distinct and

additional reason why the Petition should be dismissed:

Pet. at 20: “The driver assistance system’s automatic changing from the reverse gear into the forward gear includes ***selecting*** a (forward) ***direction*** for driving the wheels of the motor vehicle. TESLA-1003, ¶83.”

Neither the Petition, nor Dr. Janet’s declaration, provides any support from Joos that a selection is being made by Joos’s controller as to a driving direction. Joos only discloses selecting a maximum steering angle and an end position. As no prior art is submitted as disclosing this limitation, the Petition must fail.

Pet. at 21: “...and because this pattern of steering angle movements indicated by control signals from the driver assistance system ***must be detected for the requisite steering to be performed*** for the vehicle to arrive at the end position E and be placed in a state where the drive system auto-shifts from reverse to drive, Joos’s controller is operable to select a direction for driving the wheels in response to a pattern of steering angle movements. TESLA-1003, ¶88.” (emphasis changed).

The Petition fails to provide disclosure from Joos that Joos’s controller must detect steering angle movements (or a pattern thereof) for any purpose—let alone for the purposes of shifting the vehicle. As no prior art is submitted as disclosing this limitation, the Petition must fail.

Pet. at 21-22: “Thus, by shifting gears from reverse to drive as a result of ***detecting a steering angle movement*** that steers the wheels first in a rightward direction... and ***detecting a steering angle movement*** that steers the wheels in a leftward direction to set the specified (e.g., maximum) steering angle... Joos’s driver assistance system (drive system) selects a (forward) direction for driving the wheels in response to the pattern of steering angle movements that includes steering in the rightward direction and steering in the opposite (leftward) direction. TESLA-1003, ¶85.” (emphasis changed).

Again, the Petition fails to provide disclosure from Joos that Joos's controller must detect steering angle movements (or a pattern thereof) for any purpose—let alone for the purposes of shifting the vehicle. As no prior art is submitted as disclosing this limitation, the Petition must fail.

Pet. at 22: “To be sure, Joos's controller *selects* to auto-shift to drive (selecting a direction for driving the wheels) at the end position E of the unparking maneuver only after and *in response to this pattern of steering angle movements* that includes setting the predefined steering angle at the end position E by steering in the opposite direction from the steering angle while reversing. TESLA-1003, ¶86.”

The Petition fails to provide disclosure in Joos for the conclusion that Joos's controller is selecting to shift to drive in response to a pattern of steering angle movements. Joos does not contain the word “pattern,” nor concern itself with detecting any patterns in which to respond to. As no prior art is submitted as disclosing this limitation, the Petition must fail.

Pet. at 22: “The pull-forward steering angle would therefore need to be set *before* the drive system/controller auto-shifts to drive for the driver to “take over directly and rapidly” as disclosed. TESLA-1003, ¶86.”

The Petition provides no disclosure from Joos in support of this conclusion. Moreover, the only disclosure in Joos concerning the auto-shift feature is that *it may happen* after reaching the end position.

Pet. at 22: “A POSITA also would have *found it obvious to condition Joos's auto-shift to drive* (select a direction for driving the wheels) at the end position E of the unparking trajectory *on completion of the pattern of steering angle movements*, including detecting that the pull-forward steering angle has been set while the vehicle is parked at the end position. TESLA-1003, ¶87.” (emphasis changed).

The Petition provides no disclosure from Joos in support of this conclusion. Moreover, this demonstrates a tacit admission that Joos does not disclose this limitation, and that expert testimony or other forms of ‘general knowledge’ is required to reach this limitation. Moreover, responding to a completion of a pattern is not the same as *responding to the pattern itself*.

The Petitioner has completely missed the mark. *See* Pet. at 17: “Joos **renders obvious** 1[f].” Petitioner was required to show where in the prior art the limitations in 1[f] **are disclosed**. Patent Owner believes that Petitioner instead mapped its own assumptions and expert statements to the Challenged Claims, rather than the prior art.

B. The Petition fails to show that Joos, alone or in combination, teaches or suggests the limitations of independent claim 1[f], and has therefore not demonstrated a reasonable likelihood of prevailing as to claims 1-10.

The Petition challenges claim 1 in Grounds 1A, 2A, and 3A. Petitioner relies heavily, and often exclusively⁶, on Joos (US 2019/0233009) for disclosure of limitation 1[f]. As pointed out in the Petition, the examiner determined that no prior art discloses element 1[f]:

Claim 1	
1[f]	the drive system operable to select a direction for driving the wheels in response to a pattern of steering angle movements, without operator indication of a direction.

⁶ See Petition at 17-25,

When properly considered, limitation 1[f] requires the controller to respond to a pattern of steering angle movements *of the operator*, and to select a direction to drive in response to that pattern.⁷ This limitation is not disclosed or suggested by Joos, Bettger, or Bayer, alone or in combination with one another.

At the outset it is important to understand that Joos does not concern operator input, or tracking operator input to determine if a pattern must be responded to; it concerns automated maneuvers. *See* TESLA-1004 at [0008] (“manoeuvred at least semi-autonomously... means that for example *the driver assistance system intervenes in the steering*.”; “preferably provided that the motor vehicle is manoeuvred *fully autonomously* during the unparking process. This means that *the driver assistance system intervenes in the steering of the motor vehicle*, the brake system and the drive motor.” (emphasis added). Indeed, it is only when this automated maneuver is finished that “control of the motor vehicle *is returned back to the driver*.” *Id.* Despite the clear absence in Joos, the Petition errantly alleges that Joos discloses limitation 1[f]. This is incorrect for at least the reasons explained below.

1. Joos does not disclose or suggest responding to operator steering angle movements, let alone a pattern of steering angle movements

As confirmed by Petitioner’s expert, Joos’s controller *generates*⁸ steering

⁷ *See* Patent Owner’s claim construction above.

⁸ Dr. Janet acknowledges that Joos’s “driver assistance system *sets* the steering angle in a first direction,” rather than detects, or otherwise respond to a pattern of the steering angle. TESLA-1003 at ¶ 81; *see also id.* at ¶ 82 (“the driver assistance system steers the wheels in the opposite direction from the direction steered while the vehicle was reversing to *set* ‘a predefined steering angle, in

angles, it does not respond to them. Joos's only mention of a steering angle sensor (*i.e.*, an input device) appears in [0033] and merely states that "[t]he controller 3 can thus also receive data from a speed sensor and/or a steering angle sensor, for example." TESLA-1004. Joos then clarifies in the very next sentence that "the controller 3 is designed to **output** corresponding **control signals to the steering system** of the motor vehicle 1. Thus, an **intervention into the steering** of the motor vehicle can be carried out using the driver assistance system 2." *Id* (emphasis added).

Nevertheless, the Petition incorrectly asserts that "Joos's driver assistance system (drive system) is operable to select a (forward) direction for driving the wheels by auto-shifting from reverse to drive at the end position E of the autonomous or semi-autonomous unparking maneuver without "operator indication of direction," but rather in response to a pattern of steering angle movements made during the maneuver." Petition at 17. (emphasis removed) As explained above, the steering angle movements made during Joos's maneuver are **not made by the operator**, they are **made by the driver assistance system (*i.e.*, the controller itself)**. The Petition does not, nor can it, dispute this. Since Joos does not respond to a pattern of steering angles by the operator, Joos fails to disclose or suggest limitation 1[f].

Additionally, Petitioner's position defies logic and is fatally flawed regardless of claim construction positions for at least three reasons. Petitioner posits that (1) Joos's controller somehow can respond to its (the controller's) own automated, pre-

particular a maximum steering angle.""); *id.* ("The steering adjustments made to **set** the predefined steering angle for the anticipated forward motion.").

calculated movements, (2) that a pre-determined series of automated movements constitutes a pattern of independent movements rather than a singular maneuver, and (3) that an optional shift after the pre-determined series of automated movements constitutes a “response” to one of the intermittent prior steps in the pre-determined series. None of these positions make logical sense; Joos’s controller is not responding to itself or its own pre-determined and pre-calculated movements, it is just performing a static pre-determined automated unparking maneuver.

2. Joos does not disclose a driving direction shift in response to a pattern of steering angle movements

Limitation 1[f] requires a controller operable to select a direction for driving in response to a pattern of steering angles. As explained above, Joos does not consider a pattern of steering angles, it instead performs an automated unparking maneuver while calculating and dictating steering angles. Regardless, Joos does not respond to, or switch driving direction in response to, Petitioner’s identified pattern of steering angles. This is unsurprising, as Petitioner’s identified pattern of steering angles is itself not supported in Joos. Joos does not contain the word “pattern,” nor include tracking any patterns, so any allegation that Joos is responding to a pattern fails of its own accord. The Petition alleges that the pattern of steering angle movements⁹ “***must be detected***” for the requisite steering to be performed for the vehicle to arrive at the end position E and be placed in a state where the drive system auto-shifts from reverse to

⁹ Identified as the pre-determined movements and steering angles both calculated and then performed by the controller of Joos

drive,” and therefore that “Joos’s drive system/controller is operable to select a direction for driving the wheels in response to a pattern of steering angle movements.” Petition at 21. This position is entirely unsupported by Joos¹⁰. It lacks support because Joos’s only disclosure concerning automatically shifting gears is that it happens after reaching the end position. TESLA-1004 at [0017] (“after reaching the end position a forward gear is engaged,” “[a]fter the end position is reached, the driver assistance system itself can change from the reverse gear into the forward gear.”) *Id.* at [0038] (“It can also be provided that the forward gear is engaged after reaching the end position by means of the driver assistance system 2.”) All assertions that Joos discloses anything more than this is a misapprehension of Joos.

Petitioner provides some reasons why Joos might be shifting in response to steering angles which are all *post hoc* fallacies (*e.g.*, confusion regarding correlation and causation, and the incorrect assumption that two events occurring together are taken to have established a cause-and-effect relationship). It does not matter that “the driver takes over directly and rapidly from the driver assistance system to manually operate the vehicle once the vehicle shifts to drive.” Pet. at 22. Nor does it matter whether Petitioner is correct that “the *last* action to occur when the automatic or

¹⁰ Without explanation or support, Dr. Janet states that “this pattern of steering angle movements ***indicated*** by control signals from the driver assistance system must be ***detected*** for the requisite steering to be performed for the vehicle to arrive at the end position E and be placed in a state where the drive system auto-shifts from reverse to drive.” *Id.* at ¶ 84. Dr. Janet fails to provide any support for this alleged detection by the driver assistance system of the steering angle movements (or pattern thereof). Dr. Janet fails to offer support that steering angles are detected during this procedure, or the means by which detection is performed. Nor would it make sense for Joos to do so, as ***it is setting the steering angle movements, not responding to them.***

autonomous unparking manoeuvre is ended is to engage the forward gear.” *Id.* What matters is **why** the Joos controller shifts, and Petitioner provides no evidence from Joos as to **why** the Joos controller shifts— only **when** Joos shifts. Joos plainly does not disclose shifting in response to a pattern of steering angle movements.

3. *Petitioner’s identified pattern in Joos includes steering angles that are not yet “movements.”*

Petitioner’s argument that the “pattern of steering angle movements [] includes setting the predefined steering angle at the end position E” is also logically flawed. Joos’s controller cannot shift in response to a hypothetical **future** steering angle movement, as the actual steering angle movement has not yet actually occurred. Petitioner’s additional arguments that Joos conditions its shift on the performance of a pull-forward steering angle (after end position E is already reached) lacks any support from Joos, as explained above. The Petition, recognizing this, then provides motivations for which to condition Joos’s auto-shift to drive on “detecting that the pull-forward steering angle has been set.” Pet. at 23. To be clear, Petitioner is attempting to generate a pattern of steering angle movements by taking Joos’s first movement and combining it with Joos’s unrelated pull-forward adjustment, because “[e]ven basic driver’s education instruction materials teach drivers to set the pull-forward steering angle before shifting to drive.” Pet at 24. But the relevant question is whether Joos discloses a pattern of steering angle movements. Petitioner cannot piecemeal together a singular limitation; *i.e.*, a pattern. Joos does not disclose this limitation, and merely stating that the limitation is obvious, without providing prior art

disclosure of the actual limitation, does not suffice.

C. The combinations in Grounds 2A and 3A do not teach or suggest limitation 1[f]

Petitioner relies on Bettger in Ground 2A for the purposes of initiating the autonomous Joos unparking maneuver via Bettger's driver's steering angle input confirmation. Pet. at 57-58. Petitioner relies on this disclosure in Bettger to supply **part of** claim 1[f]'s "pattern of steering angle movements." Neither Joos nor Bettger supply this limitation, so Petitioner has apparently decided that a pattern is "any two steering angle movements," and simply taken one steering angle movement from each of the prior art references in order to form a "pattern." *See generally*, Petition at 57-58. To be clear, this is an attempt by Petitioner to **generate** a prior art limitation, not explain how prior art limitations can be combined. This does not teach a pattern of steering angle movements, it teaches an initiation via steering angle input by a driver, then an unrelated automated unparking procedure that ends at a pre-defined endpoint. Regardless, when Petitioner generates an undisclosed "pattern," neither prior art reference can select a driving direction in response to that newly created "pattern," as it does not exist in either reference alone, rendering the point moot. Additionally, Bettger's steering angle input **confirmation** is an operator indication of direction which directly violates claim 1[f]. Finally, Ground 2A fails for all the additional reasons Ground 1A fails. *See supra* § III(A)-(B)(3).

Petitioner relies on Bayer in Ground 3A for its “steering torque applied” “driving steering assistance” techniques. Namely, Petitioner contends that a Joos-Bayer vehicle “provides these same steering angle movements as Joos, except that the driver steers the vehicle during the unparking maneuver guided by Bayer’s steering assistance.” Pet. at 68. Ground 3A fails for at least the reasons Ground 1A fails. *See supra* § III(A)-(B)(3).

D. There is no motivation to combine the Joos reference with Bayer

Petitioner seeks to combine Joos automated unparking maneuver with Bayer’s steering torque applied driving steering assistance techniques (*i.e.*, manual steering by the driver, not the controller). This modification is suggested in an attempt to avoid the logical issues with Joos’s controller responding to its own pre-calculated movements (*See supra* § III(B)(1)) and introduce an operator into Joos’s otherwise operator-less maneuver. Petitioner provides five rationales for combining these references, all which contradict the plain teachings of Joos. *See* TESLA-1004 at [0010] (“In this way, overall the autonomous unparking of the motor vehicle from the cross-parking space can be carried out more safely.”). Turning an autonomous process into a manual process is not something Joos supports. First, Second, Third, Fourth, and Fifth, a POSITA would not have “applied Bayer’s steering assistance in Joos to assist drivers in properly following Joos’s unparking trajectory,” or “increase safety” because there is no driver in Joos’s unparking process and there is no motivation to add one beyond hindsight bias. Pet. at 63-66. The notion that returning an automated

process to a manual process is safer is only ever true if there is automation failure, which is not contemplated in Joos and directly contradicts the purposes of Joos's automated unparking maneuver. Moreover, the Petitioner's argument that "there were known problems associated with driver assistance systems available as of the Critical Date" appears to be a direct "teaching away" that would preclude combining Joos with any manual process. Pet. at 66.

Additionally, the lack of a motivation to combine can be seen in the inoperability of the suggested combination and the wholesale reconstruction that would be required for the suggested combination. Placing a human driver in charge of steering inputs in Joos destroys Joos's disclosed purposes behind calculating an unparking trajectory, TESLA-1004 at [0008] ("In principle, the unparking trajectory can be predetermined), and the calculation of an end position. TESLA-1004 at [0006] ("an end position is determined and the semi-autonomous manoeuvring of the motor vehicle along the unparking trajectory is ended at the end position.")

E. The Petition fails to show a reasonable likelihood of prevailing as to claims 2-10

Claims 2-10 are dependent upon claim 1. Petitioner has failed to show a reasonable likelihood of prevailing as to these claims at least for the reasons given above as to claim 1. *See supra* § III(A)-(D).

IV. Conclusion

The Petition has not established a reasonable likelihood that any of the

Challenged Claims are obvious. Accordingly, Patent Owner respectfully requests that the Director deny institution.

Dated: April 27, 2026

Respectfully submitted,

By /s/ Michael Doell

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CERTIFICATE OF COMPLIANCE

Pursuant to §42.24(d) and the Director's Memorandum on Interim Processes for PTAB Workload Management, the undersigned certifies that this paper contains no more than 14,000 words, not including the portions of the paper exempted by §42.24(b). According to the word-processing system used to prepare this paper, the paper contains 4104 words.

CERTIFICATE OF SERVICE

I certify that on April 27, 2026, the foregoing Patent Owner's Preliminary Response has been served on the Petitioners' counsel of record via email, at the following email addresses:

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