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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* MICHAEL REICHEL and CHRISTIAN RÖSENER

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Appeal 2019-004987  
Application 15/316,066  
Technology Center 3600

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Before CHARLES N. GREENHUT, MICHAEL L. HOELTER, and  
ANNETTE R. REIMERS, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1–12. Final Act. 1 (Office Action Summary). We have jurisdiction under 35 U.S.C. § 6(b). For the reasons explained below, we do not find error in the Examiner's rejections of these claims. Accordingly, we AFFIRM the Examiner's rejections.

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “Audi AG.” Appeal Br. 4.

### CLAIMED SUBJECT MATTER

The disclosed subject matter “relates to a method for operating a driver assistance system for the automated guidance of a motor vehicle.” Spec. 1.<sup>2</sup> Method claim 1 and apparatus claim 7 are independent. Claim 1 is illustrative of the claims on appeal and is reproduced below.

1. A method for operating a driver assistance system for automated guidance of a motor vehicle, the method comprising:

detecting environmental data relating to surroundings of the motor vehicle using environmental sensors of the motor vehicle and ego data relating to the motor vehicle using internal sensors of the motor vehicle;

determining a plurality of trajectories that respectively describe a possible future movement of the motor vehicle depending on the environmental data and the ego data;

selecting a reference trajectory from the determined plurality of trajectories by analyzing a plurality of evaluation criteria, wherein at least one of the plurality of evaluation criteria is a detection range criterion for analyzing at least one predicted detection range of one of the environmental sensors or of a group of the environmental sensors of the motor vehicle during a predicted movement of the motor vehicle along the respective determined trajectory; and

controlling vehicle systems in order to move the motor vehicle along the reference trajectory.

### REFERENCES RELIED ON BY THE EXAMINER

Hass et al.<sup>3</sup>                      US 9,731,762 B2                      Aug. 15, 2017

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<sup>2</sup> Appellant’s Specification lacks both paragraph and line numbering. We thus reference Appellant’s Specification via page number only.

<sup>3</sup> Throughout the Final Office Action and the Answer, the Examiner refers to this reference as “Has” instead of “Hass.” See Final Act. 2, 7–9; Ans. 5–6.

Oechsle et al.<sup>4</sup> WO 2008/031662 A1 Mar. 20, 2008

### THE REJECTIONS ON APPEAL

Claims 1–12 are rejected under 35 U.S.C. § 102(a)(1) and/or 102(a)(2) as anticipated by Fred. Final Act. 3.

Claims 1–12 are rejected under 35 U.S.C. § 102(a)(1) and/or 102(a)(2) as anticipated by Hass. Final Act. 7.

### ANALYSIS

The above anticipation rejections, whether predicated on Fred or Hass, are substantially similar such that they can be discussed together. We note below those instances where a difference exists between the two.

With respect to each rejection, Appellant does not offer arguments in favor of independent claim 7 or dependent claims 2, 4–6, 8, and 10–12 separate from those presented for independent claim 1. *See* Appeal Br. 8–12, 13–16. We thus select claim 1 for review. Accordingly, the remaining claims (i.e., claims 2, 4–8, and 10–12) stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv). Appellant also presents separate arguments for dependent claims 3 and 9 (which are argued together). *See* Appeal Br. 12–13, 16–17. We discuss these arguments for claims 3 and 9 separately below.

#### Claim 1

Claim 1 requires detecting environmental data and ego data (*see* below for clarification between the two). Based on such data, claim 1 requires the determination of a plurality of possible trajectories of the

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<sup>4</sup> Because both the Examiner and Appellant refer to this reference as “Fred,” we shall do the same for consistency. Also, reference will be to the English language translation thereof.

vehicle, and thereafter, the selection of a reference trajectory therefrom. Such selection is achieved by analyzing a plurality of criteria, one of which is detection range criteria that analyzes a detection range of one or more environmental sensors. This selection occurs during a predicted movement of the vehicle along its determined trajectory.

Appellant's Specification discloses that environmental data can be derived from cameras, radar or other environmental sensors while ego data pertains to data relating to the vehicle itself. Spec. 3, 7. The detection range of an environmental sensor can be defined by its sensor range and opening angle. Spec. 3.

Appellant contends that Fred does not teach or disclose the "selecting a reference trajectory" limitation of claim 1. Appeal Br. 9–10; *see also* Reply Br. 2–3. Appellant argues that "Fred does not analyze the predicted detection range of its sensors over its avoidance trajectories and Fred does not use this analysis in determining which avoidance trajectory to choose." Appeal Br. 10. Appellant makes similar arguments concerning the disclosure of Hass. *See* Appeal Br. 14–15; *see also* Reply Br. 3–4.

To be clear, both Fred and Hass detect environmental data (i.e., Fred's "radar sensors" and Hass' sensors "to generate an environmental model"). *See* Fred Abstract, ¶¶ 2, 6, 7, 13, 15, 19, 20–22, Figs. 1–2; Hass Abstract, 3:1–3, 5:48–49, 7:18–19, Figs. 2, 3a–3b. Thereafter, Fred and Hass select a trajectory based on such data. *See* Fred ¶¶ 6, 11, 23–24, Figs. 1–2; Hass 1:16–18, 2:47–50, 3:1–6, Figs. 2, 3a–3b. Fred further discloses using a detection range criterion in making a selection of a trajectory. *See* Fred ¶¶ 6, 10 (both discussing "within the sensor detection range"), 11 (discussing "within which the propagated avoidance trajectory is determined"), Abstract.

Hass also discloses that it is known to use “the sensor detection range” in selecting a trajectory. Hass 2:5–7. Additionally, Hass discloses that “tolerance ranges” are important. Hass 8:10–25. Thus, Hass also discloses using a detection range criterion in selecting a trajectory. In view of the above, we agree with the Examiner’s assessment that “Appellant does not provide any difference between Fred’s disclosure and the current Application’s invention adequately.” Ans. 3. The Examiner expresses a similar sentiment regarding Hass (which we also agree with). *See* Ans. 5–6. Accordingly, Appellant’s contentions above are not persuasive of Examiner error.

Appellant also takes issue with the Examiner’s finding that Fred analyzes a plurality of evaluation criteria. *See* Reply Br. 2. However, claim 1 does not identify what constitutes evaluation criteria other than a detection range criterion, and Appellant does not identify where Appellant’s Specification limits such criteria to only certain criteria.<sup>5</sup> As such, without a more limited comprehension of the scope of “evaluation criteria,” we understand that as long as evaluation criteria other than a detection range criteria is also evaluated, then the recited limitation directed to a “plurality of evaluation criteria” is satisfied. In this regard, we agree with the Examiner

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<sup>5</sup> For example, Pages 2 and 3 of Appellant’s Specification states:

In addition to the evaluation criteria that are generally analyzed within the scope of the determination of a reference trajectory and take into consideration, for example, dynamic driving parameters of the motor vehicle, the distance of the motor vehicle to other objects and similar, which are respectively predicted for one of the trajectories, additional predicted detection ranges of sensors or sensor groups are to be taken into consideration.

that because Fred discloses the use of other criteria, Fred thus analyzes a “plurality of evaluation criteria.” Ans. 4; *see also* Fred ¶¶ 6 (“[t]aking into account these current vehicle state variables and vehicle operating variables . . . at least one avoidance trajectory is determined”), 10, 25. The same can be said for Hass. *See* Ans. 6, Hass 3:1–3 (“the control device is set up to receive sensor signals of at least one sensor, to generate an environmental model from the received sensor signals”), 3:19–20 (“at least one camera and/or at least one radar sensor”); *see also* Hass 3:26–32, Abstract.

In summation, and based on the record presented, Appellant does not apprise us of Examiner error. Accordingly, the rejections of claims 1, 2, 4–7, and 10–12 as being anticipated by Fred and Hass are sustained.

Claims 3 and 9:

Appellant contends that neither Fred nor Hass discloses the limitation recited in claims 3 and 9, i.e., “determining a predicted detection range for each of the plurality of trajectory points” because Fred and Hass, according to Appellant, merely disclose the “longitudinal coordinate x” or “a parameter on x coordinate of the vehicle.” *See* Appeal Br. 12–13, 16–17.

Appellant’s contention is not persuasive because both references continue to monitor the situation along the path selected. Fred teaches constant monitoring by “taking into account the current state of the vehicle.” Fred Abstract; *see also* Fred ¶ 10 (“a trajectory tube is advantageously determined not only for the vehicle itself but also for each participating object within the sensor detection range covered by the surrounding sensor system”). Likewise, Hass discloses determining an avoidance trajectory “during an evasive maneuver.” Hass 2:64–3:1, 5:32–34. Thus, Appellant’s

contention focusing on certain points along a selected trajectory path does not apprise us of Examiner error.

For these reasons, the rejections of claims 3 and 9 as being anticipated by Fred and Hass are sustained.

### CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-12	102(a)(1)	Fred	1-12	
1-12	102(a)(2)	Fred	1-12	
1-12	102(a)(1)	Hass	1-12	
1-12	102(a)(2)	Hass	1-12	
<b>Overall Outcome</b>			1-12	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED