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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 WEILAND, GREGORY NYCZAK,  
WILLIAM MCDONOUGH, MICHAEL TSENGOURAS,  
DAVID SHUMAN, and PAUL FORD

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Appeal 2019-006421  
Application 14/836,392  
Technology Center 3600

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Before JENNIFER D. BAHR, MICHELLE R. OSINSKI, and  
SEAN P. O'HANLON, *Administrative Patent Judges*.

O'HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant<sup>1</sup> appeals under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 2–4, 6–13, 15–18, 20, 21, and 25–28.<sup>2</sup> We have jurisdiction over this appeal under 35 U.S.C. § 6(b). We AFFIRM.

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<sup>1</sup> We use the term “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as HERE Global B.V. Appeal Br. 2.

<sup>2</sup> Claims 1, 5, 14, 19, and 22–24 are canceled. Appeal Br. 2.

In explaining our Decision, we refer to the Specification filed August 26, 2015 (“Spec.”), the Final Office Action mailed November 1, 2018 (“Final Act.”), the Appeal Brief filed February 21, 2019 (“Appeal Br.”), the Examiner’s Answer mailed July 3, 2019 (“Ans.”), and the Reply Brief filed August 29, 2019 (“Reply Br.”).

### SUMMARY OF THE INVENTION

Appellant’s claimed invention “relates to methods for representing roads as data in a database.” Spec. 1:3–4. Claims 2, 11, and 18 are independent. Claim 2, reproduced below from page 29 (Claims Appendix) of the Appeal Brief, is illustrative of the claimed subject matter:

2. A method comprising:
  - receiving position data from one or more sensors, wherein the position data describes a position of a vehicle on a road segment;
  - querying a road database, by a processor coupled therewith, based on the position of the vehicle on the road segment;
  - receiving, by the processor, intersection data from the road database, wherein the intersection data includes a set of legal maneuvers through an intersection and a confidence value for a maneuver of the set of legal maneuvers, the confidence value indicative of a likelihood that a geometry of the maneuver accurately predicts a vehicle path through the intersection, such that the confidence value represents a probability that the vehicle is on the vehicle path indicated by the geometry of the maneuver when the vehicle maneuvers through the intersection;
  - and
  - providing, by the processor, a driving assistance command based on the intersection data to control the vehicle.

## REFERENCES

The Examiner relies on the following prior art references in rejecting the claims on appeal:

Kinoshita	US 5,642,093	June 24, 1997
Froeberg	US 6,028,550	Feb. 22, 2000
Kaji	US 6,269,304 B1	July 31, 2001
Kimura	US 6,385,536 B2	May 7, 2002

## REJECTIONS<sup>3</sup>

- I. Claims 2–4, 6–10, 18, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaji, Kimura, and Froeberg.
- II. Claims 11–13, 15–17, and 25–28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaji, Kimura, Froeberg, and Kinoshita.

## ANALYSIS

### *Rejection I– Obviousness based on Kaji, Kimura, and Froeberg*

#### *Claims 2–4, 6, and 8–10*

In contesting the rejection of claims 2–4, 6, and 8–10, Appellant presents arguments for independent claim 2 and does not separately argue dependent claims 3, 4, 6, and 8–10. *See* Appeal Br. 12–16. We select claim 2 as representative, and claims 3, 4, 6, and 8–10 stand or fall with claim 2. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2018).

The Examiner finds that Kaji teaches a method comprising most of the limitations recited in claim 2. Final Act. 5–6 (citing Kaji, 3:39–51,

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<sup>3</sup> A rejection of claims 11–13, 15–17, and 25–28 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement was withdrawn by the Examiner. Final Act. 2–4; Ans. 3.

4:5–48, 5:18–67, 6:33–65, 7:11–22, 7:52–65, Figs. 1–9, 16). The Examiner finds that Kaji teaches “intersection data including a set of maneuvers through an intersection, but does not disclose a driving assistance command based on the intersection data to control the vehicle.” *Id.* at 6. However, the Examiner finds that Kimura discloses this feature. *Id.* (citing Kimura, 2:54–58, 5:29–6:4, 8:19–45, 9:11–23, 10:18–24, 12:17–22, 13:30–35, 15:59–62, 17:55–56, 23:24–27, Figs. 9, 10, 12, 17–34). The Examiner determines that it would have been obvious “to modify Kaji as taught by Kimura for the purpose of providing assistance in controlling a vehicle when cornering[,] e.g.[,] at an intersection or fork.” *Id.* at 6–7 (citing Kimura, code (57), 9:11–23, 12:17–22, 13:30–35).

The Examiner finds that the combination of Kaji and Kimura does not disclose a confidence value. Final Act. 7. However, the Examiner finds that

Froeberg teaches . . . a navigation (col. 3, lines 49–63) method, wherein intersection data (figs. 4–6; col. 7, lines 15–20; col. 8, lines 16–22; col. 9, lines 1–20, etc) includes a set of legal maneuvers through an intersection (figs. 4–8) and a confidence value for a maneuver of the set of legal maneuvers (figs. 4–8, each shows a confidence value for a set of legal maneuvers through an intersection), the confidence value (col. 11, lines 11–59, col. 12, lines 17–26) indicative of a likelihood that a geometry of the maneuver accurately predicts a vehicle path (e.g. how close is actual vehicle path 810 to path 840; col. 10, lines 46 to col. 11, line 10) through the intersection (confidence value refers to the accuracy of a path through the intersection; see fig. 8; col. 3, lines 64 to col. 4, line[] 2; col. 7, lines 15–20, lines 52–64; col. 11, lines 11–59; col. 12, lines 17–26), such that the confidence value represents a probability that the vehicle is on the vehicle path indicated by the geometry of the maneuver when the vehicle maneuvers through the intersection (probability that vehicle is on path 810 is shown by a distance e.g. 841 by which the position of the vehicle is away from a

path 810 through an intersection; col. 10, lines 46 to col. 11, line 10).

*Id.* (emphasis omitted). The Examiner determines that it would have been obvious “to modify Kaji and Kimura as taught[t] by Froeberg for the purpose of providing accurate and speedy determination of a travel path at an intersection where paths meet and diverge.” *Id.* (citing Froeberg, 3:13–39, 3:64–4:8).

Appellant argues that Froeberg does not teach or suggest the claimed confidence value. Appeal Br. 11–16; Reply Br. 2–4. Appellant asserts that “Froeberg relates to tracking a vehicle in order to determine which path, from a plurality of paths, the vehicle has taken.” Appeal Br. 14 (emphasis omitted). Appellant asserts that,

Even though Froeberg discloses correlation data that indicates how closely a vehicle is tracking a particular path, the correlation data relates to a path actually taken by the vehicle. The correlation data is not, however, indicative of a likelihood that a particular path, or geometry, accurately predicts the vehicle path through an intersection (i.e., a path not yet taken), as required by claim 2.

*Id.* (emphasis omitted). Appellant asserts that “the prior art discloses a value (i.e., correlation data) that relates to a path actually taken by a vehicle whereas the claim language requires a value (i.e., confidence value) that relates to a vehicle path not yet taken.” *Id.* at 15; *see also id.* at 15–16 (asserting that “the confidence value is received before the vehicle actually takes the predicted path”). According to Appellant,

Froeberg does not teach or suggest receiving any sort of probability relating to whether a vehicle will be on a predicted path represented by a geometry of a maneuver before when the vehicle actually maneuvers through the intersection. The only probability referred to in Froeberg relates to position accuracy

of a vehicle's determined path, which . . . refers to the actual path of the vehicle taken and not a predicted path of the vehicle. *Id.* at 16 (citing Froeberg, 10:61–11:10, 11:27–33); *see also* Reply Br. 2 (asserting “that ‘when the vehicle maneuvers’ indicates a future action”). We are not persuaded by this line of argument because it is not commensurate with the scope of claim 2. Claim 2 recites, in relevant part, that “the confidence value represents a probability that the vehicle *is on* the vehicle path indicated by the geometry of the maneuver when the vehicle maneuvers through the intersection.” Appeal Br. 29 (Claims App.) (emphasis added). The claim does not recite that the confidence value represents a probability that a vehicle “will be” on a predicted path “before” the vehicle actually maneuvers through the intersection, as asserted by Appellant. *Id.* at 16. Limitations not appearing in the claim cannot be relied upon for patentability. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (“Many of appellant’s arguments fail from the outset because . . . they are not based on limitations appearing in the claims.”). Moreover, we are unpersuaded by Appellant’s contention that “when the vehicle maneuvers,” as recited in claim 2, necessarily requires “a future action” (Reply Br. 2) because the term “when” also encompasses a present tense action.

For the above reasons, Appellant does not apprise us of error in the Examiner’s determination that the subject matter of claim 2 would have been obvious. Accordingly, we sustain the rejection of claim 2, and claims 3, 4, 6, and 8–10 falling therewith, as unpatentable over Kaji, Kimura, and Froeberg.

*Claim 7*

In rejecting claim 7, which depends indirectly from claim 2, the Examiner finds that Kimura discloses that “the intersection type identifier indicates a roundabout intersection, a railroad crossing intersection, or a standard [intersection].” Final Act. 8 (citing Kimura, 6:28–35, 6:53, 7:1–26, Figs. 1, 4, 12, 17–34).

Appellant argues that the “cited portions [of Kimura] disclose a lane marker detector, not an intersection type identifier that indicates specific types of intersections.” Appeal Br. 17 (citing Kimura, 6:28–35, 6:53, 7:1–26). The Examiner responds by finding that “Kimura teaches intersection data that includes [an] intersection type identifier indicative of a standard intersection.” Ans. 10. The Examiner explains that, “[i]n Kimura, the database 24 stores the route/map data. As shown in FIG. 3, this ro[ute]/map data includes various data such as map data, road data, node data, *intersection data*, fork data which includes fork information used in this invention.” *Id.* (some emphasis omitted) (citing Kimura, 8:19–27); *see also id.* at 10–11 (“The intersection data includes information indicating the type of intersection, the intersection number, the presence or absence of traffic signals, and the like.” (quoting Kimura, 8:43–45)). In this regard, Appellant does not contest the Examiner’s position. *See generally* Reply Br. Given Kimura’s teaching that “ro[ute]/map data includes various data such as . . . intersection data” (Kimura, 8:20–21, Fig. 3) and that “intersection data includes information indicating the *type of intersection*” (*id.* at 8:43–44 (emphasis added)), we are unpersuaded by Appellant’s argument that Kimura only discloses a lane marker detector (Appeal Br. 17).



For the above reasons, Appellant does not apprise us of error in the Examiner's determination that the subject matter of claim 7 would have been obvious. Accordingly, we sustain the rejection of claim 7.

*Claims 18, 20, and 21*

In contesting the rejection of claims 18, 20, and 21, Appellant presents arguments for independent claim 18 and does not separately argue dependent claims 20 and 21. *See* Appeal Br. 17–20. We select claim 18 as representative, and claims 20 and 21 stand or fall with claim 18.

Appellant initially relies on the arguments advanced for the patentability of claim 2. *See* Appeal Br. 17–19 (arguing that Froeberg does not disclose the claimed confidence value). For the reasons discussed above, Appellant's arguments fail to apprise us of error in the rejection of claim 2 and, likewise, fail to apprise us of error in the rejection of claim 18.

Appellant also argues that,

Even assuming, *arguendo*, that the correlation data and accuracy of the determined path of Froeberg correspond to the claimed confidence value, . . . the correlation data and accuracy information do not relate to a maneuver through a standard intersection, as claimed, namely an intersection having one or more paths from at least one incoming lane to at least one outgoing lane.

Appeal Br. 19 (emphasis omitted). Appellant asserts that “Froeberg does not teach or suggest determining travel paths through a standard intersection, as claimed, but rather simply tracks which path of two diverging paths a vehicle is actually on.” *Id.* We are not persuaded by this argument because the Examiner does not rely on Froeberg for teaching data relating to an intersection having one or more paths from at least one incoming lane to at least one outgoing lane. *See* Final Act. 11; *see also* Ans. 15. Instead, the

Examiner relies on Kaji for teaching “navigation data [that] includes a set of legal maneuvers through a standard intersection having one or more paths from at least one incoming lane to at least one outgoing lane.” Final Act. 10 (citing Kaji, Figs. 4, 6, 8, 16; 5:51–6:32). In other words, the Examiner’s rejection is based on the combined teachings of Kaji, Kimura, and Froeberg, and, thus, Appellant’s argument against Froeberg individually is unpersuasive of error. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (“[O]ne cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references.”).

Moreover, we are unpersuaded by Appellant’s argument that “Froeberg does not teach or suggest determining travel paths through a standard intersection, as claimed” (Appeal Br. 19) because it is not commensurate with the scope of claim 18. Claim 18 recites, in relevant part, “receiv[ing] navigation data from the road database, wherein the navigation data includes a set of legal maneuvers through a standard intersection having one or more paths from at least one incoming lane to at least one outgoing lane.” *Id.* at 32–33 (Claims App.). The claim does not recite “determining travel paths through a standard intersection,” as asserted by Appellant. *Id.* at 19; *see also In re Self*, 671 F.2d at 1348.

For the above reasons, Appellant does not apprise us of error in the Examiner’s determination that the subject matter of claim 18 would have been obvious. Accordingly, we sustain the rejection of claim 18, and claims 20 and 21 falling therewith.

*Rejection II – Obviousness based on Kaji, Kimura, Froeberg,  
and Kinoshita*

*Claims 11–13, 16, 17, and 26–28*

In contesting the rejection of claims 11–13, 16, 17, and 26–28, Appellant presents arguments for independent claim 11 and does not separately argue dependent claims 12, 13, 16, 17, and 26–28. *See* Appeal Br. 20–25. We select claim 11 as representative, and claims 12, 13, 16, 17, and 26–28 stand or fall with claim 11.

The Examiner’s rejection of claim 11 relies on substantially similar findings and reasoning as to the combination of Kaji, Kimura, and Froeberg discussed above with respect to the rejection of claim 2. *See* Final Act. 12–15. Additionally, the Examiner finds that “Kaji, Kimura, and Froeberg disclose the invention as indicated, but do not particularly mention providing a safety or another driving assistance function based on the deviation and the confidence value.” *Id.* at 15. However, the Examiner finds that

Kinoshita teaches . . . providing, by a processor, a safety or another driving assistance function (collision warning; col. 5, lines 23–25; col. 6, lines 22–34) based on a deviation (vehicle deviates from a vehicle path; figs. 5, 8, 11; col. 6, lines 22–34; col. 6, lines 49–64) and the confidence value (standard deviation of transverse displacements from course or lane; col. 6, lines 22–34; col. 6, lines 49–64).

*Id.* at 15–16 (emphasis omitted). The Examiner determines that it would have been obvious “to modify Kaji, Kimura, Froeberg, as taught by Kinoshita[,] for the purpose of implementing safety driving by providing a collision warning to a driver when a vehicle the driver is driving deviates from a path.” *Id.* at 16.

Appellant initially relies on the aforementioned arguments advanced for the patentability of claim 2. *See* Appeal Br. 21–22 (arguing that

Froeberg does not disclose the claimed confidence value). For the reasons discussed above, Appellant's arguments fail to apprise us of error in the rejection of claim 2 and, likewise, fail to apprise us of error in the rejection of claim 11.

Appellant also argues that Kinoshita's driving assistance function is not based on a deviation of the actual path of a vehicle from a predicted path or a confidence value, as claimed. Appeal Br. 24. According to Appellant,

The Office Action equates the standard deviation of transverse displacements to the claimed confidence value. *See* Office Action, p. 1[6]. However, a standard deviation is not the same thing as a confidence value. A standard deviation is a measure or quantity calculated to indicate an amount of variation between values, or to indicate the extent of a deviation of values.

*Id.* This argument is unpersuasive because Appellant does not proffer any evidence to support the contention that Kinoshita's standard deviation of transverse displacements "is not the same thing as a confidence value." *Id.* Appellant's assertion amounts to nothing more than attorney argument unsupported by evidence and, thus, does not apprise us of error. *See In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (holding that attorney arguments or conclusory statements are insufficient to rebut a prima facie case of obviousness). Moreover, Appellant's argument does not address the combination of reference teachings relied on by the Examiner to address the disputed limitation. Here, the Examiner relies on Froeberg for teaching the claimed confidence value and determining whether the vehicle deviates from an indicated path (Final Act. 14–15), and the Examiner relies on Kinoshita for teaching providing another driving assistance function based on a deviation and a confidence value (*id.* at 15–16). In other words, Appellant's

argument against Kinoshita alone does not identify error in the Examiner's proposed combination of Kaji, Kimura, Froeberg, and Kinoshita.

For the above reasons, Appellant does not apprise us of error in the Examiner's determination that the subject matter of claim 11 would have been obvious. Accordingly, we sustain the rejection of claim 11, and claims 12, 13, 16, 17, and 26–28 falling therewith, as unpatentable over Kaji, Kimura, Froeberg, and Kinoshita.

#### *Claim 15*

In contesting the rejection of claim 15, Appellant relies on the same arguments advanced for the patentability of claim 7. *See* Appeal Br. 25 (asserting that “Kimura fails to teach or suggest that the ‘type of intersection’ data includes one of standard, roundabout, and railroad crossing as recited in claim 7”), 17 (asserting that Kimura “disclose[s] a lane marker detector, not an intersection type identifier that indicates specific types of intersections”). For the reasons discussed above, Appellant's arguments fail to apprise us of error in the rejection of claim 7 and, likewise, fail to apprise us of error in the rejection of claim 15. Accordingly, we sustain the rejection of claim 15.

#### *Claim 25*

In contesting the rejection of claim 25, Appellant relies on the same arguments advanced for the patentability of claims 2 and 11. *See* Appeal Br. 26 (asserting that “Froeberg fails to teach or suggest a confidence value”), 27 (asserting that, “As discussed above for claim 11, while Kinoshita may disclose a driving assistance command, the driving assistance command of Kinoshita is not based on a deviation of a vehicle's actual path from a predicted path of the vehicle, as claimed.”). For the reasons

discussed above, Appellant’s arguments fail to apprise us of error in the rejections of claims 2 and 11 and, likewise, fail to apprise us of error in the rejection of claim 25. Accordingly, we sustain the rejection of claim 25.

CONCLUSION

In summary,

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>References</b>	<b>Affirmed</b>	<b>Reversed</b>
2–4, 6–10, 18, 20, 21	103(a)	Kaji, Kimura, Froeberg	2–4, 6–10, 18, 20, 21	
11–13, 15–17, 25–28	103(a)	Kaji, Kimura, Froeberg, Kinoshita	11–13, 15–17, 25–28	
<b>Overall Outcome</b>			<b>2–4, 6–13, 15–18, 20, 21, 25–28</b>	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED