IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

FACET TECHNOLOGY CORP., *Plaintiff*, v. MOBILEYE GLOBAL, INC. *Defendant*.	Case No. 2:24-CV-00058-RWS-RSP **JURY TRIAL DEMANDED**

DEFENDANT'S INVALIDITY CONTENTIONS

Pursuant to Local Patent Rules 3-3 and 3-4 and the Court's Docket Control Order (Dkt. 25), Defendant Mobileye Global, Inc. ("Mobileye" or "Defendant") provides these Invalidity Contentions and accompanying document production to Plaintiff Facet Technology Corporation ("Facet" or "Plaintiff").

I. Overview

In this action, Plaintiff asserted in its P.R. 3-1 and 3-2 Disclosures of August 26, 2024 ("Infringement Contentions") that Defendant allegedly infringes claims 12-15 and 17 of U.S. Patent No. 9,335,255 (the "'255 patent"), and claims 1, 3-4, 9-13, and 17-19 of U.S. Patent No. 9,671,328 (the "'328 patent") (collectively, the "Patents-in-Suit" and the "Asserted Claims").

This Court has not yet construed any of the terms in the Patents-in-Suit. Defendant's Invalidity Contentions are based on Defendant's present understanding of Plaintiff's apparent interpretation of the Asserted Claims, as advanced by Plaintiff in its Complaint and Infringement

Contentions, and Defendant's own understanding of the scope of the Asserted Claims. Defendant takes no position on any matter of claim construction or interpretation in these contentions. Defendant's contentions herein are not, and should in no way be seen as, admissions about or adoptions of any particular claim scope or construction, or any admission that any particular element is met in any particular way. Defendant objects to any attempt to imply claim constructions from any identification or application of potential prior art. Any statement herein describing or tending to describe any claim element is provided solely for the purpose of understanding the relevant prior art. By including prior art that anticipates or renders obvious claims based on Plaintiff's apparent claim construction, Defendant does not thereby adopt Plaintiff's apparent claim construction.

Moreover, nothing herein should be construed as an admission that Defendant agrees with Plaintiff's claim interpretations or that Plaintiff has a plausible basis to allege infringement. Similarly, nothing herein shall be construed as an admission regarding the application of the Asserted Claims to any of Defendant's accused products. Defendant does not agree with Plaintiff's application of the claims to the accused products, and Defendant denies infringement. Furthermore, these contentions do not represent an agreement with Plaintiff's views as to the meaning, definiteness, written description support for, or enablement of any of the Asserted Claims. In fact, Defendant provides grounds for invalidity under § 112 below. Pursuant to the Court's Docket Control Order (Dkt. 25), Defendant reserves the right to include arguments directed to indefiniteness in their *Markman* briefing. Nothing stated herein shall be construed as a waiver of any argument available under 35 U.S.C. §§ 101, 102, 103, and/or 112. Defendant expressly reserves the right to propose alternative interpretations to those advocated by Plaintiff and to rebut Plaintiff's actual claim interpretation and infringement positions. Defendant reserves

the right to modify or supplement these contentions in response to the Court's construction of the claim terms at issue.

Prior art not included in this disclosure may also become relevant. Defendant is currently unaware of the extent, if any, to which Plaintiff may contend that certain limitations of the Asserted Claims are not disclosed in the prior art identified by Defendant. Defendant reserves the right to identify other relevant prior art with respect to such allegedly missing limitation(s).

Defendant's invalidity claim charts attached hereto cite to exemplary portions, teachings, and disclosures of the prior art as applied to limitations of the Asserted Claims. Persons skilled in the art, however, would recognize these as exemplary and may view an item of prior art in the context of other publications, literature, products, and understanding. Again, this is because the cited portions of prior art identified herein are exemplary only. The citations and discussion in the charts are organized by claim (and claim limitation) for convenience, but each limitation or claim section applies to the larger context of each claim, to any related dependent or independent claims, as well as all claims containing similar limitations or elements in the particularly asserted patent or other related patents also being asserted by Plaintiff. For example, citations as to any recited limitation, step, or component in the claims apply wherever each such limitation, step, or component is repeated elsewhere in the claim of that patent or other related patent also being asserted by Plaintiff. Any and all citations to particular figures in the attached charts or elsewhere in these contentions shall be deemed to wholly incorporate the figure by reference, and include the figure as if it had been inserted into the chart itself, as well as any text discussing the figure. Similarly, where Defendant cites to particular text in a prior art reference concerning a drawing or figure, the citation encompasses that drawing or figure as well as any other associated information in the prior art reference. Defendant may therefore rely on the entirety of the prior art references

listed herein, including uncited portions of those prior art references, as well as additional information including products, documents, materials, and expert testimony.

The references cited herein disclose the limitations of the Asserted Claims explicitly or inherently, and/or they may be relied upon to demonstrate how the state of the art in the relevant time frame invalidates each asserted patent claim. In the context of the knowledge of a person of ordinary skill in the art, each reference's disclosure applies in the context of both anticipation and obviousness. Therefore, any suggested single reference obviousness positions and obviousness combinations are provided in the alternative to Defendant's anticipation contentions and are not to be construed to suggest that any reference included in the combinations is somehow deficient or is not by itself anticipatory. Further, the combinations listed herein are exemplary and not exhaustive. There are many possible invalidating combinations of the references listed herein, and it is not practical, at this early stage, to identify and list all potentially relevant combinations without the benefit of further factual investigation and the Court's claim construction.

In addition to the positions and prior art identified below, and the accompanying invalidity claim charts, Defendant also incorporates by reference all invalidity contentions, prior art, invalidity claim charts, and expert declarations (including, without limitation, all anticipation positions, obviousness positions (including all prior art combinations and motivations to combine), indefiniteness positions, written description positions, and enablement positions) that have been or will be disclosed in any other action involving any of the Patents-in-Suit, as well as any U.S. Patent and Trademark Office (USPTO) proceeding involving any of the Patents-in-Suit (e.g., IPR2024-01110, IPR2024-01111, and Application No. 90/019,546) and that have or will be disclosed in any pending USPTO proceeding involving related patents. Such art and positions would have been obvious to combine with the prior art and combinations identified in these

Invalidity Contentions. To the extent Plaintiff or the Board puts forth an argument in any USPTO proceedings contrary to the positions in the litigation, Defendant reserves the right to raise and/or address such argument or position in this litigation.

Defendant expects to rely on testimony of one or more expert witnesses and materials referenced by those expert witnesses in support of these contentions and incorporate those forthcoming expert reports as if fully set forth herein. Subsequent expert statements—including deposition and trial testimony, declarations, and reports—related to invalidity, interrogatory responses, and other discovery or pleadings may expand and elaborate upon the positions contained in these Invalidity Contentions as originally prepared or subsequently amended, and Defendant reserves the right to incorporate such by reference. Defendant may further rely on any inventor admissions concerning the scope of the prior art relevant to the Patents-in-Suit found in, *inter alia*: the patent prosecution histories for the Patents-in-Suit and related patents, patent applications, and/or re-examinations; deposition testimony of the named inventors listed on the Patents-in-Suit; and the papers and any evidence submitted by Plaintiff in these actions.

Discovery has only just begun, and Defendant's investigation into prior art—including third-party prior art, and related evidence, documents, and knowledgeable witnesses—remains ongoing. Moreover, prior art may become relevant depending on the claim interpretations and/or validity positions Plaintiff or its expert witness(es) may assert, Defendant's further understanding of Plaintiff's Infringement Contentions, and any findings as to the priority date of the Asserted Claims. Accordingly, Defendant reserves the right to supplement or modify these Invalidity Contentions based on further discovery and in a manner consistent with the Federal Rules of Civil Procedure and the Court's rules and schedule. To the extent Plaintiff contend that any prior art presented in these contentions does not qualify as prior art to one or more Patents-in-Suit, the prior

art remains relevant as evidence of simultaneous development as an indicia of obviousness. *See George M. Martin Co. v. Alliance Mach. Sys. Int'l LLC,* 618 F.3d 1294, 1305 (Fed. Cir. 2010) ("Independently made, simultaneous inventions … are persuasive evidence that the claimed apparatus was the product only of ordinary mechanical or engineering skill.").

As set forth in detail below, and in the claim charts which accompany these Invalidity Contentions as exhibits A-1 to A-9, B-1 to B-9, in IPR2024-01110 & IPR2024-01111 (herein, incorporated by reference), and in Application No. 90/019,546 (herein, incorporated by reference), the Asserted Claims of the Patents-in-Suit are invalid over the cited prior art listed below under pre-AIA 35 U.S.C. §§ 102 and/or 103 and their post-AIA counterparts. Regarding the obviousness of certain claims under 35 U.S.C. § 103, one or more of the principles enumerated by the United States Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) apply to the Asserted Claims of the Patents-in-Suit, including, for example:

(a) combining various claimed elements known in the prior art according to known methods to yield a predictable result;

(b) making a simple substitution of one or more known elements for another to obtain a predictable result;

(c) using a known technique to improve a similar device or method in the same way;

(d) applying a known technique, known device or method ready for improvement to yield a predictable result;

(e) choosing from a finite number of identified, predictable solutions with a reasonable expectation of success or, in other words, the solution was one which was "obvious to try;

(f) a known work in one field of endeavor prompting variations of it for use either in the same field or a different based on given design incentives or other market forces in which the variations were predictable to one of ordinary skill in the art; and/or

(g) a teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill in the art to modify the prior art reference or to combine the teachings of various prior art references to arrive at the claimed invention.

The above criteria may be collectively referred to herein as the "*KSR* Criteria."

Based on these considerations, as further detailed below and/or in the attached exhibits, one of ordinary skill in the art could and would have readily combined the teachings of the prior art references discussed and charted in those exhibits. The combinations of these references would have rendered obvious to one of ordinary skill in the art the subject matter of the Asserted Claims. The references identified in the attached exhibits for the respective Asserted Claims are analogous prior art to the subject matter of the Asserted Claims and, for at least the reasons set forth below and/or in the claim chart exhibits, are properly combinable. Because many, if not all, of these prior art references exist within a single field of art, particularly one in which individuals in the field often shared and/or collaborated on their work, it would have been obvious for one of ordinary skill in the art to look from one piece of prior art to another in order to find any missing functionality they desired to implement. The art is replete with instances of skilled artisans looking to the same field or related fields for purposes of implementing techniques for identifying reflective objects, measuring their reflective characteristics, and determining their location. Therefore, these references provide interrelated teachings and one of ordinary skill would have looked to the concepts in any of these references when seeking to solve the problems purportedly addressed by the Patents-in-Suit.

Numerous prior art references and/or systems, including in the attached exhibits, reflect common knowledge and the state of the prior art before the earliest effective priority date of the Patents-in-Suit. As it would be unduly burdensome to create detailed claim charts for all of the invalidating combinations, for at least the reasons described in these Invalidity Contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any admitted prior art or any combination of those identified in the attached exhibits, to meet the limitations of the Asserted Claims. Defendant's inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude Defendant from identifying other invalidating combinations and/or motivations as appropriate.

No showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, because each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR*, 127 S. Ct. at 1739-40 (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach). That said, the Supreme Court's rationale, that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle," applies equally here. *Id.* at 1742.

Additional evidence that there would have been a motivation or reason to combine the prior art references identified herein includes but is not limited to the interrelated teachings of multiple prior art references; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution; the existence of a known need or problem in the field of endeavor at the time of the alleged inventions;

and the background knowledge that would have been possessed by one of ordinary skill in the art. For example, the prior art references are generally directed to the same problems. Thus, a skilled artisan seeking to solve these problems would look to these cited references in combination.

Defendant contends there are no secondary considerations of non-obviousness evidencing the validity of any of the Asserted Claims. If Plaintiff presents any alleged evidence of secondary considerations of non-obviousness, Defendant reserves its right to respond to any such alleged evidence. Further, to the extent Plaintiff identifies any product as allegedly practicing the claims and having been successful, there is no nexus between the claimed invention and the products' success and Defendant reserves its right to respond to any such alleged evidence.

II. P.R. 3-3(a): Identification of Prior Art

Pursuant to Patent Rule 3-3 and subject to Defendant's reservations of rights in these Invalidity Contentions, Defendant identifies the following prior art that anticipates and/or renders obvious one or more Asserted Claims of the Patents-in-Suit as detailed in the claim chart exhibits and elsewhere in these Invalidity Contentions. Below are tables identifying individual items of prior art. The prior art references, systems, and products listed below and in the accompanying claim chart exhibits may be relied upon for certain limitations, state of the art, and background of the art; indicia of obviousness; as evidence of the level of skill in the art at the time of the filing of the Patents-in-Suit; and/or in support of assertions that it is proper to combine certain prior art references in certain ways.

Defendant also incorporates by reference each and every prior art reference of record in the prosecution of the Patents-in-Suit and patents or patent applications related to the Patents-in-Suit, the prior art referred to in the specifications of the Patents-in-Suit, as well as the prior art identified in the USPTO proceeding involving any of the Patents-in-Suit (e.g., IPR2024-01110,

IPR2024-01111, and Application No. 90/019,546). In these Invalidity Contentions, Defendant has identified each item of prior art, based on currently available information, including:

(a) each patent, constituting prior art under pre-AIA 35 U.S.C. §§ 102(a), (b), and/or (e) or under AIA 35 U.S.C. §§ 102(a)(1) and/or (a)(2), by its patent number, country of origin, and date of issue;

(b) each non-patent publication, constituting prior art under pre-AIA 35 U.S.C. §§ 102(a) and/or (b) or under AIA 35 U.S.C. §§ 102(a)(1) and/or (a)(2), by its title, date of publication, and, where feasible, author and publisher;

(c) sales or public disclosures, constituting prior art under pre-AIA 35 U.S.C. § 102(a) and/or (b) or under AIA 35 U.S.C. § 102(a)(1), by the item offered for sale or publicly used or known, the date the offer or use took place or the information became known, and the identity of the person or entity which made the use or which made and received the offer, or the person or entity which made the information known or to whom it was made known;

(d) prior art under pre-AIA 35 U.S.C. § 102(f), by the name of the person(s) from whom and the circumstances under which the invention or any part of it was derived; and

(e) prior art under pre-AIA 35 U.S.C. § 102(g), by the identities of the person(s) or entities involved in and the circumstances surrounding the making of the invention before the patent applicant(s).

Defendant's identification of patents and publications as prior art herein and in the attached invalidity claim charts includes the publications themselves as well as the use of the products and systems described therein. Defendant's investigation continues, but information available to date indicates that such products and systems were (1) known or used in the country before the alleged

invention(s) of the claimed subject matter of the Asserted Claims, (2) were in public use and/or on sale in this country more than one year before the filing date of the Patents-in-Suit, and/or (3) were invented by another who did not abandon, suppress, or conceal, before the alleged invention(s) of the claimed subject matter of the Asserted Claims. Upon information and belief, these prior art products and systems and their associated references anticipate and/or render obvious one or more of the Asserted Claims of the Patents-in-Suit.

A. Prior Art Patents, Patent Applications, and Publications

Table 1: Prior Art Patents and Patent Applications

Country	Patent/ Application/ Publication No.	Date of Filing	Date of Issue/ Publication	Inventor(s)	Bates Range
DE	19730414A1	July 16, 1997	January 21, 1999	Hamann et al.	PA_FACET-00000096- PA_FACET-00000106
DE	19756706A1	December 19, 1997	June 24, 1999	Hoyer	PA_FACET-00000107- PA_FACET-00000129
JP	0546242A	August 8, 1991	February 26, 1993	Koiwai et al.	PA_FACET-00000524- PA_FACET-00000541
JP	2000-242887	February 18, 1999	September 8, 2000	Noda et al.	PA_FACET-00000501 PA_FACET-00000523
RU	2,116,208 C1	September 17, 1996	July 27, 1998	Stashevsky	PA_FACET-00001151- PA_FACET-00001164
US	4,368,982	June 9, 1980	January 18, 1983	Van Arnam et al.	PA_FACET-00001616- PA_FACET-00001630
US	4,721,389	April 18, 1985	January 26, 1988	Dejaiffe	PA_FACET-00001631- PA_FACET-00001642
US	5,162,643	February 26, 1991	November 10, 1992	Currie	PA_FACET-00001643- PA_FACET-00001653
US	5,202,742	October 3, 1990	April 13, 1993	Frank et al.	PA_FACET-00001654- PA_FACET-00001684
US	5,221,959	March 12, 1991	June 22, 1993	Ohyama et al.	PA_FACET-00001789 PA_FACET-00001822
US	5,293,162	March 9, 1992	March 8, 1994	Bachalo	PA_FACET-00001685- PA_FACET-00001693

Country	Patent/ Application/ Publication No.	Date of Filing	Date of Issue/ Publication	Inventor(s)	Bates Range
US	5,477,332	April 5, 1995	December 19, 1995	Stone et al.	PA_FACET-00001823 PA_FACET-00001837
US	5,604,580	February 9, 1995	February 18, 1997	Uehara	PA_FACET-00001694- PA_FACET-00001713
US	5,699,056	December 28, 1995	December 16, 1997	Yoshida	PA_FACET-00001838 PA_FACET-00001932
US	5,706,355	September 19, 1996	January 6, 1998	Raboisson et al.	PA_FACET-00001933 PA_FACET-00001945
US	5,796,094	March 25, 1996	August 18, 1998	Schofield et al.	PA_FACET-00001714 PA_FACET-00001734
US	5,835,614	November 29, 1994	November 10, 1998	Aoyama et al.	PA_FACET-00001735 PA_FACET-00001749
US	5,875,408	July 17, 1995	February 23, 1999	Bendett et al.	PA_FACET-00001946 PA_FACET-00001965
US	5,987,174	December 24, 1996	November 16, 1999	Nakamura et al.	PA_FACET-00001966 PA_FACET-00002025
US	6,005,492	July 1, 1998	December 21, 1999	Tamura et al.	PA_FACET-00002026 PA_FACET-00002033
US	6,038,496	March 6, 1996	March 14, 2000	Dobler et al.	PA_FACET-00002034 PA_FACET-00002045
US	6,091,833	August 27, 1997	July 18, 2000	Yasui et al.	PA_FACET-00002046 PA_FACET-00002092
US	6,097,491	April 10, 1997	August 1, 2000	Hartrumpf	PA_FACET-00002093 PA_FACET-00002102
US	6,120,879	April 9, 1998	September 19, 2000	Szczech et al.	PA_FACET-00002103 PA_FACET-00002136

Country	Patent/ Application/ Publication No.	Date of Filing	Date of Issue/ Publication	Inventor(s)	Bates Range
US	6,226,389	December 28, 1999	May 1, 2001	Lemelson et al.	PA_FACET-00002137 PA_FACET-00002163
US	6,226,592	March 22, 1999	May 1, 2001	Luckscheiter et al.	PA_FACET-00002164 PA_FACET-00002167
US	6,266,442	October 23, 1998	July 24, 2001	Laumeyer et al.	PA_FACET-00002168 PA_FACET-00002187
US	6,314,354	May 8, 2000	November 6, 2001	Shimizu et al.	PA_FACET-00002188 PA_FACET-00002214
US	6,317,202	November 12, 1999	November 13, 2001	Hosokawa et al.	PA_FACET-00002215 PA_FACET-00002235
US	6,359,274	May 7, 1999	March 19, 2002	Nixon et al.	PA_FACET-00001750 PA_FACET-00001788
US	6,449,383	January 27, 1999	September 10, 2002	Oike et al.	PA_FACET-00002236 PA_FACET-00002246
US	6,594,600	July 13, 1999	July 15, 2003	Arnoul et al.	PA_FACET-00002247 PA_FACET-00002262
US	7,382,274	January 21, 2000	June 3, 2008	Kermani et al.	PA_FACET-00002263 PA_FACET-00002276
US	2002/0063638	March 5, 1998	May 30, 2002	Gallagher	PA_FACET-00001606- PA_FACET-00001615
WO	1996/017258	December 1, 1994	June 6, 1996	Popovich	PA_FACET-00002300 PA_FACET-00002331
WO	1996/035196	May 1, 1995	November 7, 1996	Bantli et al.	PA_FACET-00002332 PA_FACET-00002369

Table 2: Non-Patent Publications

Title	Publication Date	Author(s)	Publisher	Bates Range
Unified Reflective Sign, Pavement And Delineation Treatments for Night Traffic Guidance	1960	Fitzpatrick	3M	PA_FACET-00002277 PA_FACET-00002284
A Vehicle Position and Heading Measurement System Using Corner Cube and Laser Beam	1988	Tsumura et al.	IEEE	PA_FACET-00002389- PA_FACET-00002395
Sign Luminance as a Methodology for Matching Driver Needs, Roadway Variables, and Signing Materials	1989	Woltman et al.	Transportation Research Record, Volume 1213	PA_FACET-00001546- PA_FACET-00001551
A mobile system for measuring retroreflectance of traffic signs	November 1990	Lumia	SPIE – the International Society for Optical Engineering	PA_FACET-00000001- PA_FACET-00000017
Raised Pavement Marker Retroreflectivity	November 1990	Pezoldt et al.	Texas Transportation Institute	PA_FACET-00001165- PA_FACET-00001286
The Influence of Truck Driver Eye Position on The Effectiveness of Retroreflective Traffic Signs	September 1991	Sivak et al.	University of Michigan Transportation Research Institute	PA_FACET-00001552- PA_FACET-00001571
Report No. 346 Implementation Strategies for Sign Retroreflectivity Standards	April 1992	Black et al.	National Cooperative Highway Research Program	PA_FACET-00000426 PA_FACET-00000477

Title	Publication Date	Author(s)	Publisher	Bates Range
A Method of Position and Attitude Measurement of Vehicle Using Fan Shaped Laser Beam and Corner Cube	1993	Tsumura et al.	IEEE	PA_FACET-00002396-PA_FACET-00002399
Exact Road Geometry Output Program for Retroreflective Road Sign Performance	1993	Uding	Transportation Research Record, Volume 1421	PA_FACET-00000408-PA_FACET-00000420
Roadway Delineation Practices Handbook	August 1994	Migletz et al.	Federal Highway Administration	PA_FACET-00001287-PA_FACET-00001545
Development and Implementation of an Automated Facility Inventory System	1995	Mastandrea et al.	Transportation Research Record, Volume 1500	PA_FACET-00000130-PA_FACET-00000136
Statistical Characterization of the Visual Characteristics of Painted Lane Markings	September 1995	Kluge et al.	IEEE	PA_FACET-00002383-PA_FACET-00002388
Characterization of Road-Edge Markings in Support of Road-Departure Prevention Systems	October 1995	Johnson et al.	University of Michigan Transportation Research Institute	PA_FACET-00001572-PA_FACET-00001605
Precursor Systems Analyses of Automated Highway Systems	November 1995	U.S. Dep't of Transportation	Federal Highway Administration	PA_FACET-00000867-PA_FACET-00001150
Field Test of a Portable Retroreflectometer for Retroreflective Raised Pavement Markings	January 1996	Ullman et al.	Transportation Research Record, Volume 1529	PA_FACET-00000421-PA_FACET-00000425

Title	Publication Date	Author(s)	Publisher	Bates Range
Introduction to the Scene Matching Missile Guidance Technologies	August 13, 1996	Tsai	National Air Intelligence Center	PA_FACET-00000478-PA_FACET-00000500
Annual Book of ASTM Standards	1997	ASTM	ASTM, Volume 04.03	PA_FACET-00000018-PA_FACET-00000028
Road Traffic Sign Detection and Classification	December 1997	Escalera et al.	IEEE	PA_FACET-00002370-PA_FACET-00002382
An Implementation Guide for Minimum Retroreflectivity Requirements for Traffic Signs	April 1998	McGee et al.	Federal Highway Administration	PA_FACET-00000029-PA_FACET-00000088
Development of a Mobile System for Measuring Traffic Sign Retroreflectivity	August 1998	Nordlund et al.	Michigan Department of Transportation	PA_FACET-00000137-PA_FACET-00000165
An integrated approach to automotive safety systems	March 5, 2000	Rohr et al.	SAE International	PA_FACET-00000089-PA_FACET-00000095
Vehicle-mounted imaging system Measures road Conditions	October 1, 1998	Todd et al.	Vision Systems Design	PA_FACET-00002285 PA_FACET-00002299
Laserlux®: Automated Real Time Pavement Marking Retroreflectivity Measurements	January 14, 1999	Maerz et al.	Transportation Research Board	PA_FACET-00000631-PA_FACET-00000644
Driver-Adapted Lane Departure Warning Systems	September 20, 1999	Batavia	Carnegie Mellon University Robotics Institute	PA_FACET-00000166-PA_FACET-00000323

Title	Publication Date	Author(s)	Publisher	Bates Range
Evaluation Findings of the Ecodyn Mobile Pavement Marking Retroreflectometer	December 1999	Neal, Jr. et al.	Civil Engineering Research Foundation (CERF)	PA_FACET-00000324-PA_FACET-00000407
Evaluation Findings of the Laserlux Pavement Marking Retroreflectometer	December 1999	Neal, Jr. et al.	Civil Engineering Research Foundation (CERF)	PA_FACET-00000749-PA_FACET-00000828
Pavement Marking Management System Reference Manual	1999	Minnesota Department of Transportation	Minnesota Department of Transportation	PA_FACET-00000829-PA_FACET-00000866
Evaluation of the Performance of Permanent Pavement Markings and Retroreflectors in Snowplowable Raised Pavement Markings (SRPMs)	September 2006	Parker	New Jersey Department of Transportation / Federal Highway Administration	PA_FACET-00000645-PA_FACET-00000748
Operations Manual for Mobile Retroreflectivity Units	February 2013	Upshaw et al.	Florida Department of Transportation	PA_FACET-00000542-PA_FACET-00000630

Defendant further incorporates by reference all "U.S. Patent Documents" and "Other Publications" cited on the face of the Patents-in-Suit. Any citation to one or more of the above prior art references, or other prior art references regarding any method or system, should be construed to constitute not only a citation to the prior art reference itself, but also a reference to the system itself. Discovery has only just begun in this case, and Defendant will supplement if and when more information becomes available from Plaintiff or third parties.

B. Prior Art Disclosures—Known/Use/Sales/Offers for Sale

Defendant believes that there were prior art disclosures in the form of sales, offers for sale, and/or uses by others of products that qualify as prior art under pre-AIA 35 U.S.C. § 102(a) and/or (b) or under AIA 35 U.S.C. § 102(a)(1) against one or more of the Asserted Claims of the Patents-in-Suit. The below-identified prior art products include products Defendant is currently aware of through an on-going diligent and reasonable investigation at this early stage of discovery and/or based on publicly available information. Details regarding such offers for sale and public uses may be within the possession of third parties. As discovery progresses, Defendant intends and reserves the right to promptly supplement and/or amend the lists below to include additional prior art products that anticipate and/or render obvious the asserted claims. To the extent Plaintiff contends that any systems presented below do not qualify as prior art to one or more Patents-in-Suit, Defendant reserves the right to rely on any of such systems as evidence of simultaneous development as an indicia of obviousness.

Table 3: Prior Art Products

System	Sale or Use Date
Roadware Corporation, Potter Industries, and Advanced Retro Technology's Laserlux Mobile Pavement Marking Retroreflectometer	At least as early as December 1994
Traffic Safety Systems's Ecodyn Mobile Pavement Marking Retroreflectometer	At least as early as December 1999
University of Michigan Transportation Research Institute's trailer enclosed apparatus for detecting stripe edges in images	At least as early as September 1995
Roadware Corporation's Surveyor, automated facility inventory and location system for right-of-way measurements	At least as early as 1995

For the public uses identified herein, Defendant is investigating the identities of the individuals who knew about and/or were involved in the making, first public use, offer for sale and/or sale of these products and systems. Defendant is also investigating the exact date that these products and systems were first made, first publicly used, offered for sale and/or sold. In addition, Defendant is currently investigating the dates of conception and reduction to practice of these products and systems and when these products and systems were first known or used by others.

In the course of their investigation, Defendant may identify additional prior art documents describing these products, systems, and/or disclosures that may also anticipate and/or render obvious as invalidating printed publications. Any citation to one or more of prior art references regarding these products, systems, and/or disclosures should be construed to constitute not only a citation to the prior art reference itself, but also a reference to the associated products, systems, and/or disclosures.

C. Invalidity by Anticipation or Obviousness

Subject to the Defendant's reservation of rights stated in these Invalidity Contentions and based on Defendant's present understanding of the Asserted Claims and the apparent interpretations that Plaintiff are asserting based on Plaintiff's Complaint and its Infringement Contentions, Defendant provides below exemplary references and combinations of references that anticipate and/or render obvious the Asserted Claims of the '255 patent in Table 4, and exemplary references and combinations of references that anticipate and/or render obvious the Asserted Claims of the '328 patent in Table 5.

Aspects of these Invalidity Contentions are based, in whole or in part, on Defendant's present understanding of Plaintiff's apparent interpretations of the Asserted Claims based on Plaintiff's Complaint and its Infringement Contentions. Given Plaintiff's apparent interpretations

of the Asserted Claims, Defendant has attempted to apply those interpretations, but this application of Plaintiff's interpretations is not an agreement or admission that any of Plaintiff's interpretations are correct. To be clear, Defendant does not agree with Plaintiff's Infringement Contentions but are merely offering Invalidity Contentions based on those interpretations.

The references identified in the exhibits attached to these Invalidity Contentions may disclose the elements of the Asserted Claims explicitly and/or inherently, and/or they may be relied upon to show how the state of the art in the relevant time frame invalidates the asserted patent claims. In some instances, multiple prior art publications discuss the same underlying system, software, or other project. For example, some patents and published patent applications reflect commercial products or services offered in the market. It would have been obvious to consider and combine the teachings of a patent or patent application that relate to a certain product or service with the features of that product or service as provided commercially. Similarly, where multiple publications discuss the same underlying product, service, project, or system, it would have been obvious to combine the discussions and disclosures of the publications as they would have been understood to describe features or potential features of the underlying subject matter. Likewise, where one publication discusses another publication, it would have been obvious to consider and combine the teachings of each publication in combination with each other.

Defendant's contentions that the references in this section, in various combinations, render the Asserted Claims of the Patents-in-Suit obvious under pre-AIA 35 U.S.C. § 103 or AIA 35 U.S.C. § 103 are in no way an admission or suggestion that each reference does not independently anticipate the Asserted Claims under pre-AIA 35 U.S.C. § 102 or AIA 35 U.S.C. § 102. Any of these references may be combined with other disclosed references, the disclosed products and systems, and/or with the knowledge of one of ordinary skill in the art during the

relevant time period to render obvious, and, therefore, invalidate, the Asserted Claims of the Patents-in-Suit.

Although Defendant has identified at least one disclosure of a limitation for each prior art reference, each and every disclosure of the same limitation in the same reference is not necessarily identified. To focus on the issues, Defendant cites only exemplary and representative portions of an identified reference, even where a reference may contain additional support for a particular claim limitation. Persons of ordinary skill in the art read an item of prior art as a whole and in the context of other publications and literature. Thus, to understand and interpret any specific statement or disclosure within a prior art reference that Defendant identifies as exemplary and representative, such persons of ordinary skill in the art would rely on other information within the reference, along with other publications and their general scientific or engineering knowledge. As such, Defendant may rely upon uncited portions of the prior art references and on other publications and expert testimony to provide context, and as aids to understanding and interpreting the exemplary portions that are cited.

No showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR*, 127 S. Ct. at 1739-40 (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach). That said, the Supreme Court's rationale, that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle," applies equally here. *Id.* at 1742. Nevertheless, in addition to the information contained in the

section(s) above and elsewhere in these contentions, Defendant hereby identifies additional motivations and reasons to combine the cited art. Further motivations are provided in the attached charts.

One or more combinations of the prior art references identified herein would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompts variations based on predictable design incentives and/or market forces either in the same field or a different one. In addition, the combinations of the prior art references identified above would have been obvious because the combinations represent the known potential options with a reasonable expectation of success.

Motivation to combine any two or more of the identified references, systems, and/or products comes from the fact that one would have been motivated by considerations of identifying objects of interest, improving identification and/or measurement accuracy, reducing time, improving driver safety, and facilitating data analysis, to combine the various teachings. Additional evidence that there would have been a motivation or reason to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution; the existence of a known need or problem in the field of endeavor at the time of the invention; and the background knowledge that

would have been possessed by a person having ordinary skill in the art. For example, the prior art references, systems, and/or products are generally directed to the same or similar problems. Thus, a skilled artisan seeking to solve these problems would have looked to these cited references in combination.

Thus, the motivation or reason to combine the teachings of the prior art references disclosed herein is found in the references themselves and in: (1) the nature of the problem being solved; (2) the express, implied, and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the fact that the prior art is generally directed towards the same problem; (5) the predictable results obtained in combining the different elements of the prior art; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions having a reasonable expectation of success; and/or (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

1. ’255 Patent

Table 4: Exemplary Anticipatory and Combinations for the Asserted Claims of the ’255 Patent

Chart	Prior Art References
A-1	Laserlux either alone or in combination with one or more of Lumia, Gallagher, Currie, UMTRI, and/or Ecodyn
A-2	Ecodyn either alone or in combination with one or more of Lumia, Gallagher, Currie, Laserlux, and/or UMTRI
A-3	UMTRI either alone or in combination with one or more of Gallagher, Lumia, Ecodyn, and/or Laserlux

Chart	Prior Art References
A-4	Gallagher either alone or in combination with one or more of UMTRI, Lumia, Ecodyn, and/or Laserlux
A-5	Uehara either alone or in combination with one or more of Laserlux, Ecodyn, UMTRI, Gallagher, Currie, Schofield, and/or Lumia
A-6	Aoyama either alone or in combination with Gallagher
A-7	Arnam either alone or in combination with Gallagher
A-8	Bachalo either alone or in combination with Gallagher
A-9	Johnson either alone or in combination with one or more of Gallagher, Lumia, McGee, and/or Intelligent Vehicles ’95 Symposium Paper

The prior art identified above, and in the attached ’255 charts, individually anticipate and/or can properly be combined in multiple ways to demonstrate the obviousness of the Asserted Claims of the ’255 patent. Various combinations of the references would have naturally been considered as part of the exercise of ordinary skill by one skilled in the art. The references disclosed in the attached charts and herein are also directed to the same or similar features as the purported invention claimed in the Asserted Claims of the ’255 patent. To the extent Plaintiff contends that any of these features solved a problem in the art, the references cited herein show that that problem was known to those of ordinary skill and had already been solved using obvious solutions.

To that end, the Asserted Claims of the ’255 patent simply combine elements already disclosed and well known in the art and yield no more than what one skilled in the art would have expected from such a combination. For example, with respect to the ’255 patent, when confronted with the alleged problems described in the ’255 patent, one of ordinary skill in the art at the time of the alleged invention would have been motivated to consider the techniques taught by the prior art cited in these Invalidity Contentions. Consideration of the teachings of this prior art, both individually and in combination, would necessarily lead to the alleged invention claimed in the

’255 patent. This is demonstrated by the cited prior art, which disclose all of the elements of the Asserted Claims of the ’255 patent, as well as motivations to modify or combine their individual teachings. One of skill in the art would have been motivated to either modify the prior art identified in the claim charts or to combine that prior art in the manner indicated by, for example, their background knowledge, design incentives, effects of demands known to the design community, or other market forces. Moreover, the cited prior art share commonalities. To the extent it is argued that any cited prior art does not expressly disclose a particular claim or element, it would have been inherent in the disclosure and/or obvious to a person of ordinary skill in the art to include the claimed element to perform the invention as claimed in the ’255 patent.

As described in the attached charts, all the elements of the Asserted Claims of the ’255 patent were commonplace before the alleged date of inventions. For each element, there exists evidence from the cited prior art that it was well known in the art prior to the date of invention. To the extent it is argued that any of the cited prior art references, systems, and/or products do not anticipate the Asserted Claims, it would have been obvious to a person of ordinary skill in the art that the Asserted Claims are merely combinations of well-known methods and systems resulting in expected results.

Additionally, Defendant hereby incorporates by reference the motivations to combine references set forth during the prosecution of the Asserted Claims of the ’255 patent, including the statements and reasoning set forth by the examiner, as to why it would have been obvious to modify or combine references to arrive at the limitations of the Asserted Claims of the ’255 patent. Defendant also incorporates by reference the admissions made in the ’255 patent and/or during prosecution regarding what was already known in the art.

2. ’328 Patent

Table 5: Exemplary Anticipatory and Combinations for the Asserted Claims of the ’328 Patent

Chart	Prior Art References
B-1	Laserlux either alone or in combination with one or more of Surveyor, Gallagher, Frank, Schofield, UMTRI, and/or Uehara
B-2	Ecodyn either alone or in combination with one or more of Laserlux, Surveyor, UMTRI, Schofield, Gallagher, Frank, and/or Uehara
B-3	UMTRI either alone or in combination with one or more of Laserlux, Ecodyn, Gallagher, Schofield, Frank, and/or Uehara
B-4	Gallagher either alone or in combination with one or more of Laserlux, Schofield, and/or Frank
B-5	Uehara either alone or in combination with one or more of Laserlux, Schofield, and/or Gallagher
B-6	Aoyama either alone or in combination with one or more of Schofield, Frank, Laserlux, and/or Uehara
B-7	Arnam either alone or in combination with one or more of Gallagher, Schofield, Escalera, and/or Frank
B-8	Bachalo either alone or in combination with one or more of Schofield, Escalera, and/or Frank
B-9	Johnson either alone or in combination with one or more of Schofield, Escalera, Frank, and/or Intelligent Vehicles ’95 Symposium Paper

The prior art identified above, and in the attached ’328 charts, individually anticipate and/or can properly be combined in multiple ways to demonstrate the obviousness of the Asserted Claims of the ’328 patent. Various combinations of the references would have naturally been considered as part of the exercise of ordinary skill by one skilled in the art. The references disclosed in the attached charts and herein are also directed to the same or similar features as the purported invention claimed in the Asserted Claims of the ’328 patent. To the extent Plaintiff contend that

any of these features solved a problem in the art, the references cited herein show that that problem was known to those of ordinary skill and had already been solved using obvious solutions.

To that end, the Asserted Claims of the ’328 patent simply combine elements already disclosed and well known in the art and yield no more than what one skilled in the art would have expected from such a combination. For example, with respect to the ’328 patent, when confronted with the alleged problems described in the ’328 patent, one of ordinary skill in the art at the time of the alleged invention would have been motivated to consider the techniques taught by the prior art cited in these Invalidity Contentions. Consideration of the teachings of this prior art, both individually and in combination, would necessarily lead to the alleged invention claimed in the ’328 patent. This is demonstrated by the cited prior art, which disclose all of the elements of the Asserted Claims of the ’328 patent, as well as motivations to modify or combine their individual teachings. One of skill in the art would have been motivated to either modify the prior art identified in the claim charts or to combine that prior art in the manner indicated by, for example, their background knowledge, design incentives, effects of demands known to the design community, or other market forces. Moreover, the cited prior art share commonalities. To the extent it is argued that any cited prior art does not expressly disclose a particular claim or element, it would have been inherent in the disclosure and/or obvious to a person of ordinary skill in the art to include the claimed element to perform the invention as claimed in the ’328 patent.

As described in the attached charts, all the elements of the Asserted Claims of the ’328 patent were commonplace before the alleged date of inventions. For each element, there exists evidence from the cited prior art that it was well known in the art prior to the date of invention. To the extent it is argued that any of the cited prior art references, systems, and/or products do not anticipate the Asserted Claims, it would have been obvious to a person of ordinary skill in the art

that the Asserted Claims are merely combinations of well-known methods and systems resulting in expected results.

Additionally, Defendant hereby incorporates by reference the motivations to combine references set forth during the prosecution of the Asserted Claims of the ’328 patent, including the statements and reasoning set forth by the examiner, as to why it would have been obvious to modify or combine references to arrive at the limitations of the Asserted Claims of the ’328 patent. Defendant also incorporates by reference the admissions made in the ’328 patent and/or during prosecution regarding what was already known in the art.

III. Invalidity Under 35 U.S.C. § 112

Defendant contends that one or more of the Asserted Claims are invalid under 35 U.S.C. § 112. As explained below, these claims are indefinite and/or fail to satisfy the written description and/or enablement requirements.[1]

A. ’255 Patent

Defendant contends one or more of the Asserted Claims of the ’255 patent are invalid because the patentee failed to provide sufficient written description support for, and failed to enable, the full scope of the claims.

[1] For each of the asserted patents, there exists a wealth of prior art that leads to conclusions of prior art invalidity under Sections 102 and 103. In terms of the teachings provided by this prior art and the motivations to combine different individual prior art references within this wealth of art, these Invalidity Contentions provide numerous examples. Should Plaintiff try to later dispute the teachings provided by this prior art and/or dispute any of the motivations to combine individual references within this wealth of prior art, Plaintiff’s later arguments in dispute of what would have been known to person of ordinary skill may well raise additional Section 112 bases for the invalidity of the Asserted Claims, including additional examples of written description deficiencies as well as a lack of an enabling disclosure. Since Plaintiff has not yet shared those positions, should it later choose to do so, Defendant reserves its rights to amend these contentions based on this later provided information.

For example, the specification does not "convey with reasonable clarity to those skilled in the art that, as of the filing date sought, [the inventor] was in possession of the invention." *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1955, 1563-64 (Fed. Cir. 1991). Nor does the specification permit a person of ordinary skill in the art to practice the full scope of the claimed invention without undue experimentation. 35 U.S.C. § 112, ¶ 1; *Genentech Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997).

For example, the '255 patent and/or its priority application(s) do not provide sufficient support—by itself or through any disclosure incorporated by reference—for at least the following claim terms in combination with the other recited limitations of the claim:

- "**identify a portion of at least one light intensity value of the plurality of light intensity values**" (claims 12 and 17); and
- "**analyze the portion of the at least one light intensity value of the plurality of light intensity values**" (claims 12 and 17).

For example, the '255 patent states that "[a] computer processing system is used to identify a portion of the light intensity values associated with a reflective surface and analyze the portion of the light intensity values to determine at least one retroreflectivity value for that reflective surface." '255 patent, 4:2-6. The specification, however, does not provide written description support or enable a person of ordinary skill in the art to identify and analyze "a portion of at least one light intensity value of the plurality of light intensity values." Specifically, the quote falls short of providing adequate written description because it refers to identifying and analyzing "a portion of the light intensity values" (plural), not "a portion of at least one light intensity value" (singular) as claimed. In fact, the specification and figures do not provide any examples or explanations of how to identify or analyze a portion of a single light intensity value. Therefore, the claim language is

inconsistent with the specification's disclosure. While the specification consistently refers to analyzing multiple light intensity values, the claims introduce the concept of analyzing a portion of a single value, which is not described or supported in the specification.

As another example, the '255 patent and/or its priority application(s) do not provide sufficient support—by itself or through any disclosure incorporated by reference—for at least the following claim terms in combination with the other recited limitations of the claim:

- "**synchronizing activation of a plurality of light sources to optimize light intensity reflected from the road marker**" (claim 13).

For example, the '255 patent does not use the term "optimize" or any variation thereof in the specification.

Because the '255 patent and/or its priority application(s) do not support these claim elements, the foregoing claims—and any claim(s) depending directly or indirectly therefrom—are either invalid under 35 U.S.C. § 112, ¶ 1, or 35 U.S.C. § 112(a).

The Asserted Claims of the '255 patent are also invalid because they are indefinite under 35 U.S.C. § 112, ¶ 2, or 35 U.S.C. § 112(b), as they fails to inform, with reasonable certainty, those skilled in the art about the scope of the invention. *See Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). For example, the phrases and terms used in the claims, including but not limited to at least the following, do not allow one of ordinary skill in the art to ascertain their meanings in light of his or her knowledge of the art and in light of the disclosures of the '255 patent.

- "**identify a portion of at least one light intensity value of the plurality of light intensity values**" (claims 12 and 17);
- "**analyze the portion of the at least one light intensity value of the**

plurality of light intensity values" (claims 12 and 17); and

- "**synchronizing activation of a plurality of light sources to optimize light intensity reflected from the road marker**" (claim 13).

For example, the '255 patent states that "[a] computer processing system is used to identify a portion of the light intensity values associated with a reflective surface and analyze the portion of the light intensity values to determine at least one retroreflectivity value for that reflective surface." '255 patent, 4:2-6. But the '255 patent does not inform, with reasonable certainty, the meaning of "a portion of at least one light intensity value of the plurality of light intensity values." Additionally, the '255 patent does not inform, with reasonable certainty, what it means for light intensity reflected from the road marker to be optimized.

Because the '255 patent does not inform, with reasonable certainty, those skilled in the art about the scope of at least these claim elements, the foregoing claims—and any claim(s) depending directly or indirectly therefrom—are either invalid under 35 U.S.C. § 112, ¶ 2, or 35 U.S.C. § 112(b).

The Asserted Claims of the '255 patent are also invalid because they fail to set forth what the applicant regarded as his invention, as required under 35 U.S.C. § 112, ¶ 2, or 35 U.S.C. § 112(b). *See Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1349 (Fed. Cir. 2002). For example, the '255 patent states that "[t]he present invention is a system for classifying different types of sheeting materials of road signs depicted in a videostream." '255 patent, 3:45-47. The '255 patent also states that "to remove the manual element of determining sheeting type and measuring retroreflectivity, the automated system of the present invention must accurately distinguish between these sheeting types" and that, "[t]o accomplish this, the present invention utilizes the fact that all signs use the same sheeting type for foreground and background colors,

that each road sign will have at least two colors and that the reflectivity for each color for each type of sheeting material has a relatively unique minimum initial retroreflectivity value." *Id.*, 6:2-12. At least under Plaintiff's apparent interpretations of the Asserted Claims of the '255 patent, the Asserted Claims are invalid for failing to claim what the applicant regarded as his invention.

B. '328 Patent

Defendant contends one or more of the Asserted Claims of the '328 patent are invalid because the patentee failed to provide sufficient written description support for, and failed to enable, the full scope of the claims.

For example, the specification does not "convey with reasonable clarity to those skilled in the art that, as of the filing date sought, [the inventor] was in possession of the invention." *Vas-Cath*, 935 F.2d at 1563-64. Nor does the specification permit a person of ordinary skill in the art to practice the full scope of the claimed invention without undue experimentation. 35 U.S.C. § 112, ¶ 1; *Genentech*, 108 F.3d at 1365.

For example, the '328 patent and/or its priority application(s) do not provide sufficient support—by itself or through any disclosure incorporated by reference—for at least the following claim terms in combination with the other recited limitations of the claim:

- "**a computer processing system operably connected to the image capture system, and the active light sensor and configured to detect objects of interest within the field of view and for each object of interest: determine whether the object of interest includes a reflective surface based on the light intensity values; determine whether the reflective surface is a road marker based on an assessment of the reflective surface; and determine a location of the road marker**" (claim 1); and

- "**a computer processing system operably connected to the active light sensor and configured to detect objects of interest within the field of view and for each object of interest: determine whether the object of interest includes at least one light intensity value associated with a reflective surface of a road marker in the field of view; and analyze the at least one light intensity value to determine an assessment of a discrete location of the road marker within the field of view**" (claim 9);
- "**using a computer processing system configured to: identify at least one light intensity value of the plurality of light intensity values associated with one of the at least one reflective surface of the road marker in the field of view; and analyze the at least one light intensity value of the plurality of light intensity values to determine an assessment of a discrete location of the road marker within the field of view**" (claim 17); and
- "**wherein the computer processing system is configured to operate in a mode selected from post-processing or on-the-fly**" (claims 3 and 11).

For example, the '328 patent states, "No post-processing is performed in the data recording system 260. As computer power increases in the future, one skilled in the art could produce a system whereby most, if not all, of the post-processing functions were performed in the capture vehicle 225, perhaps even in real time. The inventors can imagine several uses for the production of real-time information from the image capture system 250 in the future, but the cost of obtaining such information with today's computing power makes this option prohibitively expensive today." '325 patent, 9:67-10:9. The specification does not provide written description support or enable a person of ordinary skill in the art to use a computer processing system that processes information in real

time.

As another example, the ’328 patent and/or its priority application(s) do not provide sufficient support—by itself or through any disclosure incorporated by reference—for at least the following claim terms in combination with the other recited limitations of the claim:

- “**wherein the computer processing system is further configured to determine a lateral distance between the light source and the illuminated portion of the reflective road marker**” (claim 19).

For example, the ’328 patent’s specification only uses the term “lateral distance” once, when it refers to “the sign 190 lateral distance 210 from the highway 150.” ’328 patent, 7:57-61.

Because the ’328 patent and/or its priority application(s) do not support these claim elements, the foregoing claims—and any claim(s) depending directly or indirectly therefrom—are either invalid under 35 U.S.C. § 112, ¶ 1, or 35 U.S.C. § 112(a).

The Asserted Claims of the ’328 patent are also invalid because they are indefinite under 35 U.S.C. § 112, ¶ 2, or 35 U.S.C. § 112(b), as they fails to inform, with reasonable certainty, those skilled in the art about the scope of the invention. *See Nautilus*, 572 U.S. at 901. For example, the phrases and terms used in the claims, including but not limited to at least the following, do not allow one of ordinary skill in the art to ascertain their meanings in light of his or her knowledge of the art and in light of the disclosures of the ’328 patent.

- “**a computer processing system operably connected to the . . . active light sensor**” (claim 1); and
- “**a computer processing system operably connected to the active light sensor**” (claim 9).

For example, dependent claims 3 and 11 both recite that "the computer processing system is configured to operate in a mode selected from post-processing or on-the-fly." The '328 patent does not inform, with reasonable certainty, the meaning of "a computer processing system operably connected to the active light sensor," for example, when the computer processing system operates in a post-processing mode.

Because the '328 patent does not inform, with reasonable certainty, those skilled in the art about the scope of at least these claim elements, the foregoing claims—and any claim(s) depending directly or indirectly therefrom—are either invalid under 35 U.S.C. § 112, ¶ 2, or 35 U.S.C. § 112(b).

The Asserted Claims of the '328 patent are also invalid because they fail to set forth what the applicant regarded as his invention, as required under 35 U.S.C. § 112, ¶ 2, or 35 U.S.C. § 112(b). *See Allen Eng'g*, 299 F.3d at 1349. For example, the '328 patent states that "[t]he present invention is a system for classifying different types of sheeting materials of road signs depicted in a videostream." '255 patent, 3:51-53. The '255 patent also states that "to remove the manual element of determining sheeting type and measuring retroreflectivity, the automated system of the present invention must accurately distinguish between these sheeting types" and that, "[t]o accomplish this, the present invention utilizes the fact that all signs use the same sheeting type for foreground and background colors, that each road sign will have at least two colors and that the reflectivity for each color for each type of sheeting material has a relatively unique minimum initial retroreflectivity value." *Id.*, 6:8-17. At least under Plaintiff's apparent interpretations of the Asserted Claims of the '328 patent, the Asserted Claims are invalid for failing to claim what the applicant regarded as his invention.

IV. P.R. 3-4: Document Production Accompanying Invalidity Contentions

Defendant has produced documents, including PA_FACET-0000001 through PA_FACET-00002399, pursuant to P.R. 3-4(a) and P.R. 3-4(b).

Dated: November 4, 2024

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on November 4, 2024, copies of the foregoing Defendant's Invalidity Contentions and Exhibits have been served to Plaintiff through its counsel of record via email.

/s/ Mya Allison
Mya Allison
Litigation Clerk