

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TRW AUTOMOTIVE US LLC,  
Petitioner,

v.

MAGNA ELECTRONICS INC.,  
Patent Owner.

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Case IPR2014-00261  
Patent 7,339,149 B1

Before JUSTIN T. ARBES, PATRICK R. SCANLON, and  
JO-ANNE M. KOKOSKI, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge*.

DECISION  
Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

Petitioner TRW Automotive US LLC filed a corrected Petition (Paper 17, “Pet.”)<sup>1</sup> to institute an *inter partes* review of claims 1-5, 7, 8, 13, and 41 of U.S. Patent No. 7,339,149 B1 (Ex. 1002, “the ’149 patent”) pursuant to 35 U.S.C. §§ 311-319. Patent Owner Magna Electronics Inc. filed a Preliminary Response (Paper 7, “Prelim. Resp.”) opposing institution of review. We have jurisdiction under 35 U.S.C. § 314. For the reasons that follow, the Board has determined to institute an *inter partes* review.

## I. BACKGROUND

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a):

**THRESHOLD.**—The Director may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

Petitioner challenges claims 1-5, 7, 8, 13, and 41 as unpatentable under 35 U.S.C. § 103(a). Pet. 11-39. For the reasons discussed below, we institute an *inter partes* review as to claims 1-5, 7, 8, and 13 on certain grounds and deny the Petition as to claim 41.

### A. Related Matters

Petitioner indicates that the ’149 patent is involved in a district court case, to which it is a party, titled *Magna Electronics Inc. v. TRW Automotive*

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<sup>1</sup> Paper 17 is a corrected Petition for *inter partes* review, filed May 9, 2014. See Paper 16 (granting Petitioner’s motion to correct). The original Petition for *inter partes* review (Paper 1) has been accorded the filing date of December 17, 2013.

*Holding Corp.*, No. 1:12-cv-00654-PLM (W.D. Mich.). Pet. 5.

*B. The '149 Patent (Ex. 1002)*

The '149 patent, titled “Vehicle Headlight Control Using Imaging Sensor,” issued on March 4, 2008. The '149 patent describes a system for “controlling [a] vehicle’s headlamps in response to sensing the headlights of oncoming vehicles and taillights of leading vehicles.” Ex. 1002, 1:33-35. According to the '149 patent, prior attempts at automatic vehicle headlight controls included a single light sensor, wherein the headlights were dimmed in response to sensed light exceeding a threshold. *Id.* at 1:50-53. The '149 patent states that such systems are ineffective at detecting oncoming headlights at a distance and detecting taillights of leading vehicles. *Id.* at 1:54-62.

The '149 patent describes vehicle headlight dimming control 12 comprising imaging sensor module 14, imaging control circuit or digital signal processor 13, and vehicle lighting control logic module 16. *Id.* at 3:54-58, Fig. 2. Imaging sensor module 14 includes optical device 36, light sensing array 38, and spectral separation device 40 disposed between optical device 36 and light sensing array 38. *Id.* at 4:32-37, Fig. 2. Imaging sensor module 14 may be mounted to, or near, the vehicle’s windshield via bracket 34. *Id.* at 4:13-15, Fig. 2. This positioning provides an interior location that substantially eliminates environmental dirt and moisture problems and provides a relatively clear view forward of the vehicle. *Id.* at 4:16-20.

Light sensing array 38 includes a plurality of photosensor elements 42 arranged in a matrix. *Id.* at 4:43-45, Fig. 4. Digital signal processor 13, which receives output 56 from light sensing array 38, includes taillight

detection circuit 76 and headlight detection circuit 78. *Id.* at 4:64-5:1, Fig. 3. Taillight detection circuit 76 detects red light sources above a particular threshold, and headlight detection circuit 78 detects white light sources above a particular threshold. *Id.* at 5:12-30. Thus, “the control identifies light sources that are either oncoming headlights or leading taillights by identifying such light sources according to their spectral makeup.” *Id.* at 2:50-52.

Vehicle lighting control logic module 16 receives input 20 from digital signal processor 13. *Id.* at 4:6-7, Fig. 2. Vehicle lighting control logic module 16 responds to the input by switching headlights 18 to an appropriate mode. *Id.* at 5:57-59. For instance, the headlights might be switched from high-beam mode to low-beam mode in response to detecting oncoming headlights. *Id.* at 7:47-50.

### *C. Illustrative Claim*

Claim 1 of the '149 patent is illustrative of the claims at issue:

1. A control system for automatically controlling the state of the headlamps of a controlled vehicle, said control system comprising:

an optical system for imaging external sources of light within a predetermined field of view; and

an imaging processing system for processing images from said optical system and providing a control signal for controlling the state of the headlamps as a function of the output of pixels imaging the same spectral band of light.

### *D. The Prior Art*

Petitioner relies on the following prior art:

1. Japanese Kokai Application No. S62-131837, published June 15, 1987 (“Yanagawa”) (Ex. 1005);<sup>2</sup>
2. U.S. Patent No. 4,521,804, issued June 4, 1985 (“Bendell”) (Ex. 1006);
3. Oliver Vellacott, *CMOS in camera*, IEE Review, 111-114 (May 1994) (“Vellacott”) (Ex. 1007);
4. U.S. Patent No. 4,758,883, issued July 19, 1988 (“Kawahara”) (Ex. 1008); and
5. U.S. Patent No. 5,075,768, issued December 24, 1991 (“Wirtz”) (Ex. 1009).

#### *E. The Asserted Grounds*

Petitioner challenges claims 1-5, 7, 8, 13, and 41 of the ’149 patent on the following grounds:

<b>References</b>	<b>Basis</b>	<b>Claim(s) Challenged</b>
Yanagawa and Bendell	§ 103	1-4 and 8
Yanagawa, Bendell, and Vellacott	§ 103	5
Yanagawa, Bendell, and Kawahara	§ 103	7 and 41
Yanagawa, Bendell, and Wirtz	§ 103	13

#### *F. Claim Interpretation*

Petitioner contends, and Patent Owner does not dispute, that the ’149 patent has expired. Pet. 1. The Board’s interpretation of the claims of an

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<sup>2</sup> Petitioner’s Exhibit 1005 contains both the Japanese patent document and an English translation of the document; Petitioner has provided an affidavit attesting to the accuracy of the translation. *See* Ex. 1005; 37 C.F.R. § 42.63(b). Our references to Yanagawa in this decision refer to the English translation.

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