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IN THE UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, DISTRICT OF COLUMBIA

In The Matter of:

CERTAIN VISION-BASED DRIVER
ASSISTANCE SYSTEM CAMERAS AND
COMPONENTS THEREOF

Investigation No. 337-TA-_____

COMPLAINT OF TRW AUTOMOTIVE U.S. LLC
UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED

Complainant:
TRW Automotive U.S. LLC
12001 Tech Center Dr.,
Livonia, Michigan 48150

Proposed Respondent:
MAGNA ELECTRONICS, INC.
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Exhibit G	FPGA for LDW, TRW Conekt, <i>available at</i> http://www.conekt.co.uk/capabilities/electronic-hardware/50-fpga-for-ldw .
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Exhibit J	Magna Press Release, March 21, 2013, <i>available at</i> http://www.magna.com/media/press-releases-news/news-page/2013/03/21/news-release---magna-celebrates-new-production-line-in-china
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Exhibit O	“Magna Electronics and Mobileye Announce Partnership to Develop and Supply a Combined Automatic Headlamp Controller and Lane Departure Warning System,” <i>available at</i> http://www.magna.com/media/press-releases-news/news-page/2009/01/12/magna-news---magna-electronics-and-mobileye-announce-partnership-to-develop-and-supply-a-combined-automatic-headlamp-controller-and-lane-departure-warning-system .

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I. Introduction

1. This Complaint is filed by Complainant, TRW Automotive U.S. LLC (“TRW”), pursuant to Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337).

2. This Complaint is based upon the unlawful importation into the United States and/or sale after importation by the Proposed Respondent of certain Vision-Based Driver Assistance System Cameras and Components Thereof (the “Accused Products”).

3. TRW has established a domestic industry (“TRW Domestic Industry”) and has invested substantial capital, labor and resources in the research and development of driver assistance technology and, in particular, of forward-facing camera systems. TRW’s product, developed as a result of its domestic investment, is the Scalable Camera or “S-Cam” forward-facing driver assistance system.

4. As a result of TRW’s predecessor’s research and development activities, TRW developed and is the owner of the inventions claimed in U.S. Patent No. 6,807,287, which issued on October 19, 2004, and is entitled “Road Profile Prediction” (the “’287 Patent”). Exhibit A. The inventions claimed in the ‘287 Patent are embodied in the TRW S-Cam.

5. One or more claims of the ‘287 Patent are infringed by the Accused Products, including Vision-Based Driver Assistance System Cameras and Components Thereof of respondent Magna Electronics, Inc. (“Magna”). Infringing “EYERIS” forward-facing camera products including components of Vision-Based Driver Assistance System Cameras and Components Thereof which infringe the claims of the ‘287 Patent have been sold for importation, imported by or on behalf of, and/or sold after importation by Magna in violation of Section 337(a)(1)(B) of the Tariff Act of 1930. Accused Products are also sold for importation into the United States in passenger vehicles assembled outside the United States, including specifically the Chevrolet Equinox, assembled in Canada and imported into the United States.

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Additionally, manufacture of certain key components of Accused Products including semiconductor components occurs outside the United States, and therefore, Accused Products have been and continue to be imported into the United States and/or sold after importation.

6. Accordingly, the Proposed Respondent Magna has engaged in unfair acts in violation of Section 337 of the Tariff Act of 1930, as amended, through the importation and sale after importation within the United States of Accused Products.

7. Therefore, TRW seeks a Limited Exclusion Order (or Orders), as provided by Section 337(d) and (g) of the Tariff Act of 1930, as amended, excluding the Accused Products of the proposed Respondents, including components thereof, from entry into the United States.

8. TRW further seeks a cease and desist order (or orders) pursuant to Section 337(f) of the Tariff Act of 1930, as amended, compelling the Proposed Respondent Magna to stop the importation, sale for importation, sale after importation, promotion, marketing, advertising, demonstrating or warehousing of Accused Products within the United States.

9. Current alternatives to the Accused Products include a number of competing driver assistance systems from suppliers including but not limited to TRW and alternative non-infringing driver assistance technology.

10. As such, vehicle manufacturers will not be substantially burdened by the exclusion of the Accused Products due to the availability of non-infringing alternative products.

II. Complainant

11. TRW is a Delaware corporation with its corporate offices at 12001 Tech Center Dr., Livonia, Michigan 48150. Exhibit B, Delaware Department of Corporations, TRW Automotive U.S. LLC, Exhibit C, *available at* <http://www.trw.com/AboutTRW/locations>.

12. TRW has a Global Electronics facility at 902 S. Second St., Marshall, Illinois 62441. Exhibit C.

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13. TRW is a leading developer and innovator in the rapidly-growing field of Driver Assist Systems (DAS). These camera and radar-based technologies assist drivers by providing information and acting on environmental data at the front, side and rear of vehicles to help warn drivers of impending danger. They can also provide intuitive cues or actions such as braking and steering inputs to help “coach” the driver to stay in lane or offer convenience functions like Adaptive Cruise Control. Exhibit D, *available at* http://www.trw.com/integrated_systems/driver_assist_systems.

14. TRW’s lateral support systems include Lane Departure Warning (LDW). These technologies use a forward-facing video camera mounted behind the rearview mirror to detect lane markings alongside many types of roadways. Exhibit E, *available at* http://www.trw.com/integrated_systems/driver_assist_systems/lateral_support.

15. LDW is comparable to a virtual road rumble. Drivers who unintentionally cross a road lane marking or the edge of the road receive a visual, audible or haptic warning helping to remind them to correct the situation. Haptic feedback options include a vibrating steering wheel. Exhibit E, *available at* http://www.trw.com/integrated_systems/driver_assist_systems/lateral_support.

16. Lucas Industries Limited (“Lucas Industries”) pioneered various technologies in the field of driver assistance systems.

17. Lucas Industries was acquired by TRW Inc., a predecessor to TRW, in 1999. Exhibit F, *available at* <http://www.nytimes.com/1999/01/29/business/trw-outbidding-federal-mogul-to-buy-lucas-variety-of-britain.html>.

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18. Including its work through Lucas, TRW has been working with Driver Assistance Systems since the 1960s. Exhibit G, *available at* <http://www.conekt.co.uk/capabilities/electronic-hardware/50-fpga-for-ldw>.

19. In the 1990s, Lucas Industries developed systems using image processing of forward-facing cameras to control the lateral behavior of the car, with the Prometheus program providing a major demonstration vehicle of a car which could be driven “no-hands, no-feet” on the motorway. *Id.*

20. As part of Lucas’s research and development in this field, Lucas Industries was awarded protection within the United States with the ‘287 patent, among others.

III. Proposed Respondent

21. Magna Electronics, Inc. (“Magna”) is a Delaware Corporation with offices at 601 Abbott Road, East Lansing, Michigan 48823. Exhibit H, Delaware Department of Corporations, Magna Electronics, Inc.

22. Magna is a subsidiary of Magna International, Inc., a vehicle parts manufacturer based in Aurora, Canada.

23. Upon information and belief, Magna sells for importation, manufactures and imports into the United States and/or sells for importation into the United States and/or sells after importation a variety of Vision Based Driver Assistance System Cameras and components thereof that infringe the TRW Patents, including those discussed above at paragraph 5. Exhibit I, *available at* <http://www.magna.com/media/press-releases-news/news-page/2011/12/01/media-release---magna-launches-camera-based-driver-assistance-system-which-offers-affordable-safety-and-convenience>.

24. In particular, a Magna affiliate has opened a new Chinese production line for driver assistance products, including adding production for forward facing image modules.

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Exhibit J, *available at* <http://www.magna.com/media/press-releases-news/news-page/2013/03/21/news-release---magna-celebrates-new-production-line-in-china>.

25. Upon information and belief, Magna supplies its components and systems to, among other customers, General Motors, and Honda, including components and systems from its Chinese factory.

26. Accused Products are included in passenger vehicles assembled both inside and outside the United States, including in passenger vehicles imported into the United States from Canada. Exhibit K, Declaration of Adam Heenan.

27. Magna does not use its own recognition technology and algorithms in its forward-facing, vision-based driver assistance system cameras. Rather, Magna purchases components including image processors from Mobileye, an Israeli electronics designer and manufacturer. Exhibit I, *available at* <http://www.magna.com/media/press-releases-news/news-page/2011/12/01/media-release---magna-launches-camera-based-driver-assistance-system-which-offers-affordable-safety-and-convenience>.

28. Magna purchases from Mobileye “EyeQ2” chipsets which implement various algorithms in Magna driver assistance systems and implements such chipsets as components of all current Accused Products. Exhibit I, *available at* <http://www.magna.com/media/press-releases-news/news-page/2011/12/01/media-release---magna-launches-camera-based-driver-assistance-system-which-offers-affordable-safety-and-convenience>.

29. The Mobileye EyeQ2 chipsets perform, among other functions, road profile prediction, object detection, and headlight and taillight detection. Mobileye EyeQ2 chipsets are also used in TRW products, including its S-Cam driver assistance system. Exhibit L, ¶ 8. Declaration of John Prainito.

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30. Mobileye EyeQ2 chipsets are manufactured by STMicroelectronics. Exhibit M, “EyeQ2: Vision System on Chip,” *available at* <http://www.slideshare.net/Mobileye/eyeq2-vision-system-on-a-chip>.

31. STMicroelectronics’ several “back-end” (final) manufacturing sites are all located outside of the U.S. Exhibit N, *available at* http://www.st.com/web/en/resource/corporate/financial/quarterly_report/ST_at_glance_page.pdf. Additionally, STMicroelectronics’ sole U.S. facility was sold in 2010 and ceased production Q1 2011. *Id.*

32. Magna Accused products have been found installed in vehicles manufactured in the United States, including, for example, a 2012 Honda Accord, and in vehicles manufactured outside the United States, including, for example, a 2013 Chevrolet Equinox manufactured in Ontario, Canada. Exhibit K at ¶¶ 3, 15.

33. Accordingly, Magna Accused Products, including at least the image processor components thereof, are sold for importation, imported into and/or sold after importation within the United States.

34. Upon information and belief, Mobileye and Magna have previously collaborated on forward-facing, camera-based driver assistance systems before the current line of accused products. Exhibit O, “Magna Electronics and Mobileye Announce Partnership to Develop and Supply a Combined Automatic Headlamp Controller and Lane Departure Warning System,” *available at* <http://www.magna.com/media/press-releases-news/news-page/2009/01/12/magna-news---magna-electronics-and-mobileye-announce-partnership-to-develop-and-supply-a-combined-automatic-headlamp-controller-and-lane-departure-warning-system>.

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35. Upon information and belief, Magna's collaboration with Mobileye comprised use of Mobileye's Lane Departure Warning (LDW) Technology (technology Magna lacked) and Magna's Automatic Highbeam Control (AHC) technology. *Id.*

IV. TRW's Products and the TRW Patents

36. TRW is a pioneer in the field of driver assistance systems. TRW's predecessor by acquisition, Lucas Industries, was involved in early efforts, and early successes, in using forward-facing camera technology to detect and recognize road features, attributes and dimensions for the purpose of providing information to the vehicle driver and providing assistive control inputs of various vehicle systems. *See, e.g., "Robot Car," available at <http://www.youtube.com/watch?v=AILZhcnpXYI>, a copy of which is submitted separately on disc.*

37. A goal of driver assistance systems and technology has been to provide a system for recognizing a vehicle's position within a road lane, and for control of an autonomous cruise control system.

38. A challenge faced in creating an algorithm which is effective in recognizing road features and attributes is creating a method of road profile prediction to accurately determine left and right lane offset values, lane heading and lane curvature when the horizon is above or below its expected location.

39. Previous efforts to recognize the lane in which the vehicle is travelling are computer intensive and produce lane information in screen co-ordinates, rather than real co-ordinates.

40. From its research and development driver assistance systems, Lucas Industries obtained, on October 19, 2004, the duly, properly and legally issued U.S. Patent No. 6,807,287,

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entitled “Road Profile Prediction.” Lucas Industries obtained the ‘287 Patent as assignee of Inventor and Lucas Industries employee, Filip Jozef Johan Hermans.

41. The ‘287 Patent is the product of U.S. Patent Application No. 09/622,984 filed August 25, 2000 based on a Patent Cooperation Treaty (“PCT”) application no. PCT/GB99/00584 filed February 26, 1999. The certified copies of prosecution history and cited references of the Patent are submitted on the Attachment Compact Disc provided with this Complaint.

42. Generally speaking, the TRW ‘287 Patent is directed to an apparatus and method for road profile prediction, looking at image data derived from the road ahead of the vehicle, processing that data to locate lane markers, and finding the lane positions, heading, curvature and horizon.

43. Filip Jozeph Johan Hermans, the Inventor of the ‘287, assigned all rights, title, and interest in the ‘287 patent to Lucas Industries. A certified copy of the Assignment documents for the ‘287 Patent is submitted with this Complaint as Exhibit P.

44. Lucas Industries, in turn, has assigned all rights, title and interest—including the right to sue for past acts of infringement—to TRW. A certified copy of the Assignment documents for the ‘287 Patent is submitted with this Complaint as Exhibit Q.

45. The ‘287 patent is based on a Patent Cooperation Treaty application, No. PCT/GB99/00584 (“the ‘584 PCT”).

46. Other applications related to the ‘584 PCT include: (a) German patent DE69926868 (T2), (b) Spanish patent ES2247819 (T3), and (c) European Patent Office EP1057141.

47. The ‘287 patent has not been licensed.

V. Plain English Statement of Accused Products

48. The Accused Products are camera devices and semiconductor components for driver assistance systems made, sold, and imported by Magna. It is believed that many or all such Accused Products are sold under the trademark “EYERIS,” though not all “EYERIS” products are Accused Products.

VI. The Domestic Industry

49. A Domestic Industry, under Section 337(a)(3), exists in the articles protected by the ‘287 patent.

50. A Domestic Industry, under Subparts (A), (B) and (C) (“the economic prong”) Section 337(a)(3), exists by virtue of TRW’s activities within the United States, including TRW’s manufacture and research and development of its driver assistance systems.

51. TRW’s domestic activities include its significant investment in plant and equipment and significant investment in labor and capital. TRW’s domestic industry includes substantial investments in research and design employees at its research and design facilities in Farmington Hills, Michigan, and significant investments in production employees and equipment at its manufacturing facility in Marshall, Illinois, and other assets allowing for, among other things, the research, development and production of driver assistance systems. Exhibit L, Exhibit T, Declaration of Christopher Hazlegrove. [

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52. TRW S-Cam products are manufactured domestically in Marshall, Illinois at a TRW facility. Exhibit L.

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53. TRW has made and continues to make significant investments in plant and equipment and significant employment of labor and capital specifically related to research and development of its S-Cam Driver Assistance System Camera products.

54. TRW's production-related activity alone suffices for TRW to meet the domestic industry requirements of Section 337. TRW's research and development activities alone also suffice for TRW to meet the domestic industry requirements of Section 337. Indeed, TRW's Driver Assistance System Research and Development Facility in Farmington Hills Michigan has []

55. Additionally, TRW has made significant investment related to research and development of its S-Cam Driver Assistance System Camera products, including the significant gross engineering spend to date for TRW's Driver Assistance System Research and Development Facility in Farmington Hills Michigan. Exhibit T, ¶ 5 (Confidential).

56. TRW domestically practices at least one claim of the '287 patent in its Scalabe Camera of "S-Cam" forward driver assistance system. See Exhibit R, Domestic Industry, technical prong claim chart.

VII. Unfair Acts Of The Proposed Respondents – Patent Infringement

57. Claims 1, 2, 3, and 8 of the TRW Patents are infringed by Magna driver assistance systems.

58. The Magna driver assistance systems directly and indirectly infringe the '287 Patent. A claim chart applying claims 1, 2, 3, and 8 of the '287 patent to Magna's driver assistance systems are submitted with this Complaint as Exhibit S.

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59. As noted above at paragraphs 21-35, Accused Products and components thereof which infringe the claims of the '287 patent are imported into the United States and/or sold after importation.

60. In addition to direct infringement, Magna actively induces the infringement by vehicle manufacturers which incorporate Magna products into finished vehicles (such as a Chevrolet Equinox). Magna is aware of the '287 patent by at least the related action filed in the United States District Court for the Western District of Michigan, and by this complaint, and has continued to sell and/or offer to sell infringing Accused Products to vehicle manufacturers, with specific knowledge of the existence and Magna's infringement of '287 patent.

61. Magna's infringing Accused Products constitute a material part of the invention claimed in the '287 patent, are not a staple article or commodity of commerce, and have no noninfringing uses. Magna is aware of the '287 patent by at least the related action filed in the United States District Court for the Western District of Michigan, and by this complaint, and has continued to sell and/or offer to sell infringing Accused Products to vehicle manufacturers, with specific knowledge of the existence and Magna's infringement of '287 patent.

62. Importation, sale after importation, offers for sale and use of Magna driver assistance systems in or into the United States constitute patent infringement and violation of section 337.

VIII. Other Proceedings.

63. TRW filed a Complaint on June 24 in the U.S. District Court for the Western District of Michigan, case No. 13-cv-00687. That case alleged infringement of the '287 patent and U.S. Patent No. 8,233,045 by Magna. The filing of the complaint provided notice to Magna of its infringement of the '287 patent. TRW has amended that lawsuit to realign infringement of the '287 patent to case no 13-cv-00324, discussed below.

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64. Magna filed a Complaint in the Western District of Michigan, 12-cv-654, on June 20, 2012 alleging infringement of eight U.S. Patents, Nos. 6,097,023, 7,423,248, 7,459,664, 7,339,149, 7,344,261, 7,655,894, 7,994,462, and 8,203,440. On July 18, 2012, Magna amended its original complaint in that lawsuit to add an additional claim of infringement of U.S. Patent No. 8,222,588. On December 26, 2012, Magna filed a second amended complaint to add additional claims of infringement of U.S. Patent Nos. 8,314,689 and 8,324,552.

65. On March 26, 2013, Magna filed a separate lawsuit No. 13-cv-00324 in the Western District of Michigan alleging infringement of an additional U.S. Patent No. 8,405,726. On June 21, 2013, Magna amended its original complaint in that lawsuit to add a second claim of infringement of U.S. Patent No. 7,533,998. TRW has answered alleging infringement of the '287 patent as a counterclaim. Magna has subsequently filed second and third amended complaints adding allegations of infringement of U.S. Patents Nos. 8,179,437; 8,481,916; 8,508,593; 8,513,590; 8,531,278; and 8,531,279. TRW has moved to consolidate the -324 action with the original -654 case.

66. On August 8, 2013, Magna asserted counterclaims in case No. 13-cv-00687 adding two patents from the same family as the complaint filed June 20, 2012, U.S. Patents Nos. 8,481,910 and 8,492,698. TRW has moved for those patents to be severed from the -687 action and transferred to Magna's original case asserting patents from the same family.

67. All claims of infringement of all thirteen patents in Magna's two lawsuits are directed against TRW's S-Cam products.

IX. Harmonized Tariff Schedule Numbers

68. TRW states on information and belief that the HTSUS numbers that the accused products may be imported under include:

- a. 8541.29.00

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- b. 9006.40.40
- c. 9006.40.60
- d. 9006.40.90
- e. 8529.90.06
- f. 8529.90.09
- g. 8525.80.50
- h. 8529.90.81

69. TRW has no direct information regarding the HTSUS Numbers under which any of the Accused Products are imported.

X. Requests for Relief

70. Wherefore, pursuant to ITC Rule 210.12 (a)(10), TRW respectfully requests that the Commission:

- A. Institute an immediate investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, into the Proposed Respondent's unfair acts and methods of competition in the importation into the United States, the sale for importation into the United States, and the sale after importation into the United States, of the Accused Products that infringe the TRW Patents;
- B. Set a target date of no more than twelve months;
- C. Schedule and conduct a hearing pursuant to Section 337(c) for purposes of receiving evidence and hearing argument concerning whether there has been a violation of Section 337, and following the hearing, to determine that there has been a violation of Section 337;

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- D. Issue a permanent Limited Exclusion Order pursuant to Section 337(d), excluding from entry into the United States the Accused Products that infringe the TRW Patents;
- E. Issue an order or orders pursuant to Section 337(f) to cease and desist unfair acts and methods of competition relating to assembly, testing, marketing, distributing, offering for sale, selling, or otherwise transferring in the United States the Accused Products that infringe the TRW Patents; and
- F. Grant such other and further relief as the Commission finds appropriate and just under the law, based upon the facts complained of herein and determined in the investigation.

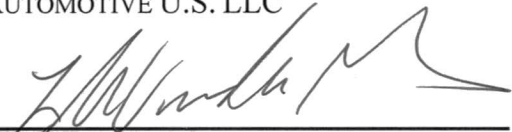
Dated: September 20, 2013

Respectfully submitted,

Counsel for Complainant

TRW AUTOMOTIVE U.S. LLC

By:


Counsel for TRW Automotive U.S. LLC