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June 15, 2016

Scott Yon and Sharon Yukevich  
U.S. Department of Transportation  
National Highway Traffic Safety Administration  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Dear Mr. Yon and Ms. Yukevich,

**RE: NHTSA Information Request DP16-001**

This letter responds to NHTSA's May 16, 2016 inquiry (the "IR") to IEE S.A. ("IEE") relating to certain Pontiac Solstice and Saturn Sky vehicles that incorporate a passenger sensing system mat manufactured by IEE. IEE remains dedicated to providing full cooperation to NHTSA on this IR.

The IR seeks information relating to occupant classification systems supplied by IEE for vehicles sold in the United States for the above mentioned car lines for model years 2006-2010. These vehicles included IEE Occupant Classification System ("OCS"), a component consisting of sensor mats with cables, interconnectors, hot-melt, electronics and software (including algorithm and calibration), which were sold to Lear, and integrated into Pontiac Solstice and Saturn Sky vehicles.

**IEE's OCS and BodySense™ Sensor Mats**

IEE is a global leader in automotive safety sensing systems for occupant detection and classification, with products such as OCS, BodySense™ and Seat Belt Reminders providing enhanced safety and comfort in vehicles produced by major automobile manufacturers worldwide.

IEE manufactures two distinct occupant classification sensing products: 1) OCS and 2) BodySense™. OCS classifies vehicle occupants based upon data from an array of sensors using a combination of pattern recognition and pressure profiles. BodySense™, on the other hand, does not utilize pattern recognition or pressure profiles to classify vehicle occupants. Instead, BodySense™ classifies vehicle occupants based upon capacitive measurements which detect electromagnetic fields. In addition, OCS sensor mats have substantially different material compositions and application processes from BodySense™ sensor mats.

### **IEE OCS Systems As Component vs. IEE OC Sensor Mat As Subcomponent**

IEE sold its OCS as a Component, and also sold OC sensor mats as a Subcomponent.



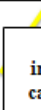
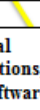
For IEE OCS as a Component, IEE's product is comprised of several different elements, with hardware consisting of:

- Sensor Mat,
- Cable,
- Interconnector,
- Hot-melt,
- Electronics, and
- Software (including algorithm and calibration).

Beside the OCS, IEE sold IEE OC as well. The IEE OC Subcomponent product consisted of the sensor mat only. The IEE OC did not include cables, interconnectors, hot-melt, electronics or software. IEE's OC product sensor mat represents a Subcomponent, which were sold to Continental AG ("Continental").

### **Contents of IEE OCS Component And IEE OC Sensor Mat Subcomponent**

Below are illustrations of an IEE OC sensor mat as a Subcomponent vs. a full IEE OCS Component:

IEE OC (sensor mat only, no other elements)	IEE OCS (sensor mat with cables, interconnectors, hot-melt, electronics and software (including algorithm and calibration))
	
 <p data-bbox="516 1537 672 1604">No electrical interconnections, cables or software</p>	 <p data-bbox="961 1537 1117 1604">Electrical interconnections, cable and software</p>

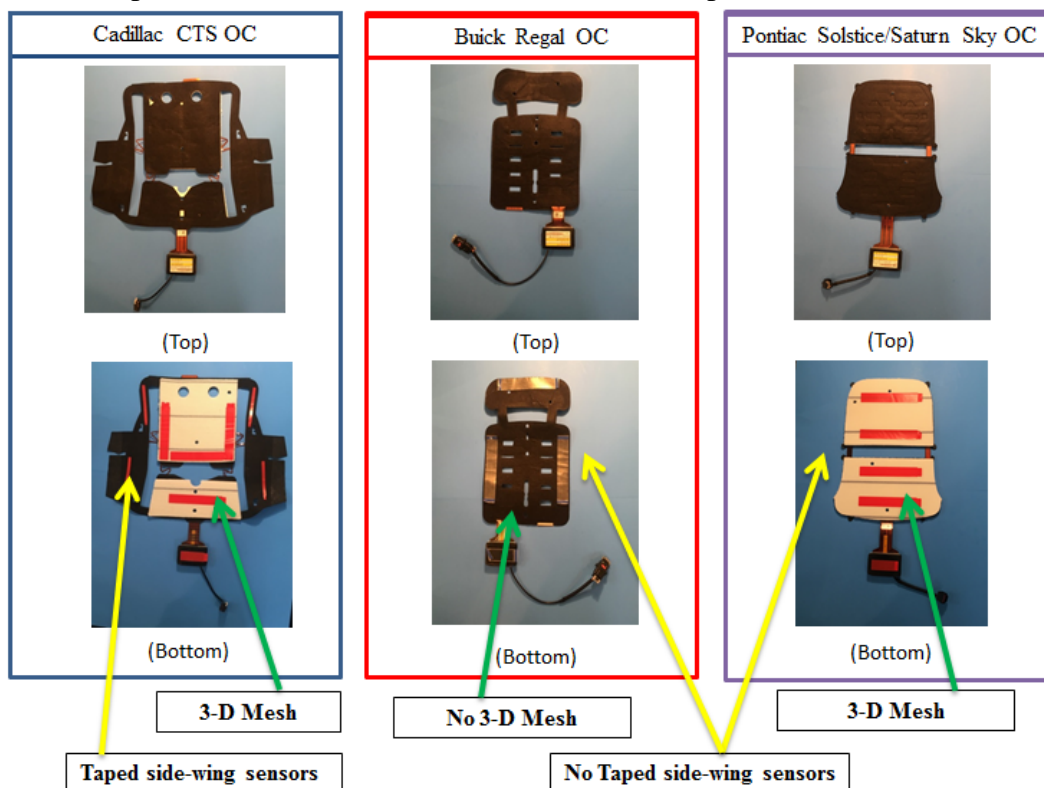
IEE sold OCS as Components and OC as Subcomponents to Tier 1 Suppliers, including Lear, Mobis, Autoliv and Continental, who then incorporated IEE's product into vehicles for OEM customers. Specifically, IEE sold OCS as a Component (including sensor mats with cables, interconnectors, hot-melt, electronics or software (with algorithm and calibration)), to Lear (and other seat manufacturers, for example, Faurecia, Magna, Johnson Controls Inc. and others), Mobis and Autoliv, who then incorporated IEE's OCS into vehicles for OEM customers,

which were used on various General Motors, Hyundai and Kia vehicles sold in the United States. In addition, IEE also sold OC as a Subcomponent to Continental AG (“Continental”), without cables, interconnectors, hot-melt, electronics or software. Continental incorporated IEE’s OC Subcomponent sensor mat into Continental’s OCS, which were sold and delivered by Continental as system supplier to BMW, Nissan and Suzuki.

### Properties of the IEE OCS

The OCS development is an iterative process. The overall seat design, geometry and vehicle environment affect the pressure that an occupant or child seat places on different parts of the seat. As a result, each OCS must be designed for the unique seating environment within each vehicle model, requiring the occupant classification system manufacturer to utilize different sensor mats, calibrations, and algorithms to properly classify occupants. The placement of the sensors, and the amount of pressure each sensor will recognize for an occupant, will vary among the different seat designs and car design. Thus, OCS supplied by IEE are different in design not only from one manufacturer to another, but for different vehicle models for the same manufacturer.

For example, illustrations of various IEE OCS as Components are shown below:



In addition, differing performance specifications between vehicle manufacturers mandate different designs for each occupant classification system. IEE’s role in meeting diverse specifications is different between applications, and depends upon the contractual agreements between IEE, the vehicle manufacturer and the seat manufacturer (Tier 1). IEE’s responsibilities

among the various carlines varied significantly depending on the applicable roles and responsibilities agreed upon between the OEM, Tier 1 supplier and IEE.

### **Pontiac Solstice and Saturn Sky OCS As Components**

The IEE OCS incorporated into MY 2007-2010 Saturn Sky and 2006-2010 Pontiac Solstice vehicles, were designed and developed for these vehicles' unique seating design, geometry, vehicle environment, car design and program specifications. IEE developed the OCS in partnership with General Motors and Lear Corp. ("Lear"), General Motors' seating supplier for the Pontiac Solstice and Saturn Sky vehicles, to meet the distinctive requirements and specifications for that vehicle platform as defined by General Motors. The testing of the final integration, including durability testing, of the system into the seat and airbag system in the vehicle was the responsibility of General Motors, as the vehicle manufacturer, and the responsibility of the seat manufacturer.

### **IEE's Response to the NHTSA IR Questions 1 and 2**

Given the unique design, geometry, vehicle environment, car design and program specifications of each IEE OCS, other IEE OCS incorporated into vehicles other than the MY 2006-2010 Pontiac Solstice and MY 2007-2010 Saturn Sky would not be substantially similar. Nevertheless, IEE is committed to working with the NHTSA to provide all information responsive to this IR, and thus IEE has also provided information on IEE OCS and OC products incorporated into vehicles other than the MY 2006-2010 Pontiac Solstice and MY 2007-2010 Saturn Sky. Per the requirements set forth in the IR, below is the specific request and IEE's response to each request, as of June 15, 2016.

- 1.) Identify by company name, address, and the name, title, and contact details for an appropriate representative, each OEM that utilized the subject component supplied by IEE from the start of production to present.

**IEE Response:** ATTACHMENT 1 contains company name, address, and contact details for the various IEE OCS and OC customers for the IEE sensor mats used in vehicles sold in the United States. As discussed above, IEE sold OCS as Components (including sensor mats with electronic cable connections, hot-melt, and software (with algorithm and calibration)) to Lear, Mobis, and Autoliv, which were used on various vehicles sold in the United States.

In addition, IEE sold Subcomponent OC to Continental (sensor mat, **without** electronic cable connections, hot-melt, algorithm and calibration) which were used on BMW, Nissan and Suzuki vehicles.

The list of contacts contained in ATTACHMENT 1 represents current contacts that IEE uses to conduct its business with its customers.

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- 2.) Separately, for each OEM identified in response to number 1, to the extent the information is available, in tabular form, identify the model and model year of each vehicle produced for sale in the United States since start of production that utilized the subject component and each subject component (sensor mat) IEE and OEM part number. Year of subject component production is an acceptable alternative to vehicle model year.

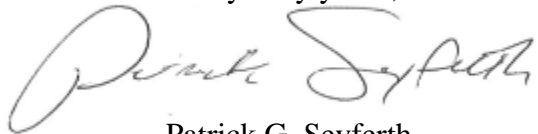
**IEE Response:** ATTACHMENT 2 contains IEE's part number, the OEM part number, and make and model year of vehicles sold in the United States that include IEE's OCS as a Component or OC as a Subcomponent. Because IEE's contact is often a Tier 1 supplier rather than an OEM, IEE has provided OEM part numbers, make and model year of each vehicle based upon IEE's current understanding and documentation.

**Conclusion:**

IEE is committed to working with the NHTSA to provide all information responsive to this IR. IEE's submission of information responsive to this IR represents IEE's current information and documentation as of June 15, 2016. For various IEE and GM part numbers identified in ATTACHMENT 2, IEE is working to confirm which IEE and GM part numbers correspond to the vehicle model year range identified. IEE will provide these part numbers when they are confirmed. IEE will supplement its response to this IR as soon as possible.

If you have any questions or comments, please contact me.

Very truly yours,

A handwritten signature in black ink, appearing to read "Patrick G. Seyferth". The signature is fluid and cursive, with the first name "Patrick" being more prominent and the last name "Seyferth" following in a similar style.

Patrick G. Seyferth