



May 3, 2022

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Scott Paxton
Director, Regulatory Legal Counsel
ZF Active Safety US, Inc.
12200 Tech Center Drive
Livonia, MI 48150-2177

NEF-102dp
EA19-001

Dear Mr. Paxton,

This letter is to inform you that the Office of Defects Investigation (ODI) of the National Highway Traffic Safety Administration (NHTSA) opened an Engineering Analysis (EA) EA19-001 on April 19, 2019 to investigate allegations of the failure of the airbag control units (ACUs) supplied by ZF Group (ZF) in certain vehicles produced by the affected vehicle manufacturers identified in Enclosure Two, and to request certain information.

For all affected vehicle manufacturers believed to be using the subject ACU, this office has investigated more than 15 incidents where the frontal airbags did not deploy in a medium or high severity frontal collision. All of these incidents were identified through proactive efforts conducted by NHTSA, primarily by staff working at the Vehicle Research and Test Center in East Liberty, Ohio (and therefore no Vehicle Owner Questionnaire report numbers are identified). Assessment of these incidents found that at least 5 of the vehicles experienced confirmed damage to the vehicle electrical system during the crash, which produced electrical overstress (EOS) damage to an internal ACU component, specifically an application specific integrated circuit (ASIC) denominated DS84. In these confirmed incidents, the EOS failure of the DS84 ASIC subsequently prevented deployment of one or more air bags, and/or other restraint system components during the crash event.

Unless otherwise stated in the text, the following definitions apply to these information requests:

- **Subject vehicles:** All affected vehicle manufacturers' vehicles equipped with the Subject Component manufactured for sale or lease in the United States, including, but not limited to, the District of Columbia, and current U.S. territories and possessions.
- **Subject component:** All Airbag Control Units manufactured by ZF-TRW or any ACUs derived from ZF design(s) manufactured by any Alternate Supplier that contain the DS84 (ASIC)

- **Supplier:** ZF (including all predecessor corporate entities) and all alternate suppliers identified in question XX.
- **Alternate Supplier:** Any supplier manufacturing ACU units derived from any ZF ACU design which incorporates the DS84 ASIC.
- **Crash event:** A single or related series of crashes occurring within a time span of 1 minute or less.
- **Alleged defect:** Failure of the ACU to maintain full operational function during a crash event due to ACU reset or shutdown from electrical overstress damage of the DS84 ASIC, or an ACU reset caused by electrical transients entering the ACU on any of the DS84 ASIC communications lines to satellite crash sensors.

Indications typically associated with the alleged defect include, but are not limited to:

- A. A non-deployment frontal crash event resulting in fatal and/or serious injury (AIS Code 3 or above);
 - B. Inability to establish communication with the ACU in post-crash assessment;
 - C. One or more Event Data Recorder (EDR) record(s) was found to be incomplete for the most recent crash event;
 - D. The ACU is missing one or more crash record(s) for the most recent crash event;
 - E. Affected vehicle manufacturer's decision to submit the ACU to ZF and/or an Alternate Supplier for inspection and analysis;
 - F. Alternate Supplier's decision to submit the ACU to ZF for inspection and analysis;
 - G. Identification of physical EOS damage to the DS84 ASIC;
 - H. Resistance from Vcc to ground on the ACU measure to be less than 1.0 (one) kilo-ohm; and/or
 - I. Identification of any post-crash fault codes, as provided in Response 5, that are associated with a shutdown or reset of the ACU during a crash event.
- **Affected Vehicle Manufacturers:** Vehicle manufacturers identified in the Opening Resume for EA19-001 (Enclosure Two)
 - **ZF:** ZF Group, TRW, all of its past and present officers and employees, whether assigned to its principal offices or any of its field or other locations, including all of its divisions, subsidiaries (whether or not incorporated) and affiliated enterprises and all of their headquarters, regional, zone and other offices and their employees, and all agents, contractors, consultants, attorneys and law firms and other persons engaged directly or indirectly (e.g., employee of a consultant) by or under the control of ZF (including all business units and persons previously referred to), who are or were involved in any way as of January 1, 2008, with any of the following related to the alleged defect in the subject vehicles:
 - a. Design, engineering, analysis, modification or production (e.g. quality control);
 - b. Testing, assessment or evaluation;

- c. Consideration, or recognition of potential or actual defects, reporting, record-keeping and information management, (e.g., complaints, field reports, warranty information, part sales), analysis, claims, lawsuits or arbitrations; or
 - d. Communication to, from or intended for zone representatives, fleets, dealers, or other field locations, including but not limited to people who have the capacity to obtain information from dealers.
- **Document:** “Document(s)” is used in the broadest sense of the word and shall mean all original written, printed, typed, recorded, or graphic matter whatsoever, however produced or reproduced, of every kind, nature, and description, and all non-identical copies of both sides thereof, including, but not limited to, papers, letters, memoranda, correspondence, communications, electronic mail (e-mail) messages (existing in hard copy and/or in electronic storage), faxes, mailgrams, telegrams, cables, telex messages, notes, annotations, working papers, drafts, minutes, records, audio and video recordings, data, databases, other information bases, summaries, charts, tables, graphics, other visual displays, photographs, statements, interviews, opinions, reports, newspaper articles, studies, analyses, evaluations, interpretations, contracts, agreements, jottings, agendas, bulletins, notices, announcements, instructions, blueprints, drawings, as-builts, changes, manuals, publications, work schedules, journals, statistical data, desk, portable and computer calendars, appointment books, diaries, travel reports, lists, tabulations, computer printouts, data processing program libraries, data processing inputs and outputs, microfilms, microfiches, statements for services, resolutions, financial statements, governmental records, business records, personnel records, work orders, pleadings, discovery in any form, affidavits, motions, responses to discovery, all transcripts, administrative filings and all mechanical, magnetic, photographic and electronic records or recordings of any kind, including any storage media associated with computers, including, but not limited to, information on hard drives, floppy disks, backup tapes, and zip drives, electronic communications, including but not limited to, the Internet and shall include any drafts or revisions pertaining to any of the foregoing, all other things similar to any of the foregoing, however denominated by ZF, any other data compilations from which information can be obtained, translated if necessary, into a usable form and any other documents. For purposes of this request, any document which contains any note, comment, addition, deletion, insertion, annotation, or otherwise comprises a non-identical copy of another document shall be treated as a separate document subject to production. In all cases where original and any non-identical copies are not available, “document(s)” also means any identical copies of the original and all non-identical copies thereof. Any document, record, graph, chart, film or photograph originally produced in color must be provided in color. Furnish all documents whether verified by ZF or not. If a document is not in the English language, provide both the original document and an English translation of the document.
 - **Other Terms:** To the extent that they are used in these information requests, the terms “claim,” “consumer complaint,” “dealer field report,” “field report,” “fire,” “fleet,” “good will,” “make,” “model,” “model year,” “notice,” “property damage,” “property damage claim,” “rollover,” “type,” “warranty,” “warranty adjustment,” and “warranty claim,”

whether used in singular or in plural form, have the same meaning as found in 49 C.F.R. § 579.4.

In order for my staff to evaluate the alleged defect, certain information is required. Pursuant to 49 U.S.C. § 30166, please provide numbered responses to the following information requests. Insofar as ZF has previously provided a document to ODI, ZF may produce it again or identify the document, the document submission to ODI in which it was included and the precise location in that submission where the document is located. When documents are produced, the documents shall be produced in an identified, organized manner that corresponds with the organization of this information request letter (including all individual requests and subparts). When documents are produced and the documents would not, standing alone, be self-explanatory, the production of documents shall be supplemented and accompanied by explanation.

Please repeat the applicable request verbatim above each response. After ZF's response to each request, identify the source of the information and indicate the last date the information was gathered.

1. State the number of each of the following, received by ZF, or of which ZF is otherwise aware, which relate to, or may relate to, the alleged defect in the subject component:
 - a. Consumer complaints, including those from fleet operators;
 - b. Field reports, including subject vehicle manufacturer field reports in ZF's possession;
 - c. Reports for ACUs returned from the field or from test vehicles;
 - d. Reports involving a crash, injury or fatality;
 - e. Property damage claims;
 - f. Third-party arbitration proceedings where ZF is or was a party to the arbitration; and
 - g. Lawsuits, both pending and closed, in which ZF is or was a defendant or codefendant.

For subparts "a" through "g" state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "d" through "g" provide a summary description of the alleged problem and causal and contributing factors and ZF's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "f" and "g," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

2. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 1, state the following information:
 - a. ZF's file number or other identifier used;
 - b. The category of the item, as identified in Request No. 1 (i.e., consumer complaint, field report, etc.);

- c. Vehicle owner or fleet name (and fleet contact person), street address, email address and telephone number;
- d. Vehicle's VIN;
- e. Vehicle's make, model and model year;
- f. Vehicle's mileage at time of incident;
- g. Incident date;
- h. Report or claim date;
- i. Whether a crash is alleged;
- j. Whether property damage is alleged;
- k. Number of alleged injuries, if any;
 - i) The AIS score of the injuries; and
 - ii) Description of injury and location.
- l. Number of alleged fatalities, if any;
- m. Supplier of the subject component; and
- n. All applicable indicators for the Alleged Defect (items A through H as identified above).

Provide this information in Microsoft Access 2010, or a compatible format, entitled "REQUEST NUMBER ONE DATA." (Request TWO in previous IR Letter)

- 3. Produce copies of all documents related to each item within the scope of Request No. 1. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method ZF used for organizing the documents. Describe in detail the search methods and search criteria used by ZF to identify the items in response to Request No. 1.
- 4. Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to, the alleged defect in the subject vehicles that have been conducted by, or for, ZF. For each such action, provide the following information:
 - a. Action title or identifier;
 - b. The actual start date;
 - c. The actual or expected end date;
 - d. Brief summary of the subject and objective of the action;
 - e. Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and
 - f. Final Report of the findings and/or conclusions resulting from the action.
- 5. For the subject component, provide a list of all possible fault codes and/or diagnostic trouble codes stored in the ACU which could be associated with the alleged defect. For each fault code provide:
 - a. The identifier for the code;
 - b. The module or other hardware which contains the code;
 - c. A description of the code;
 - d. The conditions which result in the code being set; and
 - e. The tools, software, and procedures required to download the code.

6. Furnish ZF's assessment of the alleged defect in the subject component, including:
 - a. The causal or contributory factor(s);
 - b. The failure mechanism(s);
 - c. The failure mode(s);
 - d. Any prior safety recalls ZF has issued to address EOS related failures of the subject ACU.
 - e. The risk to motor vehicle safety that it poses.

Legal Authority for This Request

This letter is being sent to ZF pursuant to 49 U.S.C. § 30166, which authorizes NHTSA to conduct any investigation that may be necessary to enforce Chapter 301 of Title 49 and to request reports. It constitutes a new request for information.

Civil Penalties

ZF's failure to respond promptly and fully to this letter could subject ZF to civil penalties pursuant to 49 U.S.C. § 30165 or lead to an action for injunctive relief pursuant to 49 U.S.C. § 30163. (Other remedies and sanctions are available as well.) The Vehicle Safety Act, 49 U.S.C. § 30165(a)(3), provides for civil penalties of up to \$24,423 per violation per day, with a maximum of \$122,106,996 for a related series of daily violations, for failing or refusing to perform an act required under 49 U.S.C. § 30166. See 49 C.F.R. § 578.6(a)(3). This includes failing to respond completely, accurately, or in a timely manner to ODI information requests.

If ZF cannot respond to any specific request or subpart(s) thereof, please state the reason why it is unable to do so. If on the basis of attorney-client, attorney work product, or other privilege, ZF does not submit one or more requested documents or items of information in response to this information request, ZF must provide a privilege log identifying each document or item withheld, and stating the date, subject or title, the name and position of the person(s) from, and the person(s) to whom it was sent, and the name and position of any other recipient (to include all carbon copies or blind carbon copies), the nature of that information or material, and the basis for the claim of privilege and why that privilege applies.

Confidential Business Information

If ZF's response contains any information that you claim is confidential business information, ZF must request two secure electronic file transfer links from Daniel Pinero at daniel.pinero@dot.gov. One secure electronic file transfer link is for your request for confidential treatment and will be directed to NHTSA's Office of the Chief Counsel. Please see Enclosure 1 for additional instructions on submitting a request for confidential treatment. The second secure electronic file transfer link is for your non-confidential response to this letter. Do not submit any confidential business information along with your non-confidential submission. Please refer to EA19-001 in ZF's response to this letter and in a request for confidential treatment that ZF may submit.

Due Date

ZF's response to this letter must be submitted to this office by **June 14, 2022**. If ZF finds that it is unable to provide all of the information requested within the time allotted, ZF must request an extension from Bruce York at (202) 366-6938 no later than five business days before the response due date. If ZF is unable to provide all of the information requested by the original deadline, it must submit a partial response by the original deadline with whatever information ZF then has available, even if an extension has been granted.

If you have any technical questions concerning this matter, please call Daniel Pinero of my staff at (202) 366-5677.

Sincerely,

Stephen A. Ridella, Ph.D
Office Director
Office of Defects Investigation

Enclosure 1, Information for Requests for Confidential Treatment.

Enclosure 2, EA19-001 Opening Resume.

ENCLOSURE 1 – INFORMATION FOR REQUESTS FOR CONFIDENTIAL TREATMENT

If you believe that your response contains any material that you claim is confidential business information, submit these materials to NHTSA’s Office of the Chief Counsel in accordance with 49 C.F.R. Part 512. **All requests for confidential treatment must be submitted directly to the Office of the Chief Counsel. Upon request, ODI will provide you with a secure file transfer link for your submission to the Office of the Chief Counsel.**

Requests for confidential treatment are governed by Part 512. A current version of this regulation is available on the internet at <http://www.ecfr.gov> by selecting Title 49 “Transportation,” selecting “Parts 500 – 599” and then selecting Part 512 “Confidential Business Information.”

How to request confidential treatment:

To facilitate social distancing due to COVID-19, NHTSA is treating electronic submission as an acceptable method for submitting confidential business information to the agency under Part 512. If you claim that any of the information or documents provided in your response constitutes confidential business information within the meaning of 5 U.S.C. § 552(b)(4), or are protected from disclosure pursuant to 18 U.S.C. § 1905, you must request a secure file transfer link from the ODI contact listed in your Information Request. ODI will copy a representative from the Office of the Chief Counsel on the secure file transfer link for your request for confidential treatment. You must submit supporting information together with the materials that are the subject of the confidentiality request, in accordance with Part 512, to the Office of the Chief Counsel. Do not send a hardcopy of a request for confidential treatment to NHTSA’s headquarters.

Your request must include a request letter that contains supporting information, pursuant to Part 512.8. Your request must also include a certificate, pursuant to Part 512.4(b) and Part 512, Appendix A.

You are required to submit one unredacted “confidential version” of the information for which you are seeking confidential treatment. Pursuant to Part 512.6, the words “ENTIRE PAGE CONFIDENTIAL BUSINESS INFORMATION” or “CONFIDENTIAL BUSINESS INFORMATION CONTAINED WITHIN BRACKETS” (as applicable) must appear at the top of each page containing information claimed to be confidential. In the latter situation, where not all information on the page is claimed to be confidential, identify each item of information for which confidentiality is requested within brackets: “[].”

You are also required to submit one redacted “public version” of the information for which you are seeking confidential treatment. Pursuant to Part 512.5(a)(2), the redacted “public version” should include redactions of any information for which you are seeking confidential treatment (i.e., the only information that should be unredacted is information for which you are **not** seeking confidential treatment).

For questions about a request for confidential treatment, please contact Dan Rabinovitz in the Office of the Chief Counsel at Daniel.Rabinovitz@dot.gov or (202)366-8534.