



although the probability of this occurring appears to be low. While the ACU incorporates electrical circuitry intended to protect the ASIC from harmful signals, the level and effectiveness of the protective circuitry varies by OEM customer.

During PE18-003, Hyundai and Kia filed recalls (18V-137 and 18V-363 respectively) to address a defect that could result in ACU disablement and non-deployments. According to the filings, the disablement occurs in certain types of frontal crash events. Both filings discussed a condition known as electrical overstress (EOS) that affected the subject ASIC and was likely caused by electrical signals that entered the ACU via sensor wiring. The recalled vehicles used ACUs that had the lowest levels of ASIC protection while non-recalled Hyundai and Kia products using subject ACUs had higher levels of protection. ODI has not identified any EOS failures in the non-recalled Kia and Hyundai populations.

In September 2016, FCA filed recall 16V-668 for certain model year (MY) 2010 to 2014 Chrysler, Dodge and Jeep products also manufactured with the subject ACU. In that filing, FCA also discussed an EOS condition that resulted in a failure of the subject ASIC, which caused air bag non-deployment. FCA noted that the defect condition had only been observed in vehicles equipped with sensor harnessing routed across the front of the vehicle. Other FCA vehicles that also used the subject ACU, but not the cross-car harnessing, had not experienced EOS failures, despite similar time in service. The recalled FCA vehicles used a mid-level form of ASIC protection. Other FCA vehicles that did not use cross car wiring, or used higher levels of ASIC protection, have not been recalled. ODI has not identified any EOS failures in the non-recalled FCA population.

Recently, ODI has identified two substantial frontal crash events (one fatal) involving Toyota products where EOS is suspected as the likely cause of the non-deployments. The crashes involved a MY 2018 and a MY 2019 Corolla equipped with the subject ACU that incorporated higher levels of ASIC protection. Additionally, both ACUs were found to be non-communicative (meaning the ACU could not be read with an Event Data Recorder) after the crash, a condition found in other cases where EOS occurred with other OEMs. No other EOS events have been identified for other Toyota products (including Corolla models that used the subject ACU since MY 2011), or for the Honda and Mitsubishi vehicles that use the subject ACU.

ODI plans to evaluate the susceptibility of the subject ACU designs to electrical signals, as well as other vehicle factors that can either lead to, or reduce the likelihood of, an EOS event. Additionally, ODI will evaluate whether an unreasonable risk exists that requires further field action.