

표준 및 인증제도



DSSAD 데이터추출장치 표준제정을 위한 SAE J1698 검토

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SAE J1698 Review for Standardization of DSSAD Data Retrieval Tool

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Key Words : Automated driving(자율주행), DSSAD(자율주행 기록장치), Data retrieval tool(데이터 추출장치), Traffic accident analysis(교통사고 분석), Standardization(표준화)

ABSTRACT

This presentation deals with the standardization development of DSSAD (Data Storage System for Automated Driving) data retrieval tool, which is a driving information recording device for autonomous vehicles. The standardization activities of the data extraction and analysis system have been carried out since 2022 in the "Development of Extraction and Analysis System for DSSAD Accident Analysis" project hosted by the National Police Agency. Currently, the data retrieval tool is being fabricated and tested for data communication with the DSSAD along with prototypes. We intend to base the functional requirements of DSSAD data retrieval tool on the SAE J1698 standard for extracting information related to accident records. In particular, we review the data extraction protocol of Event Data Recorder(EDR) of SAE J1698-2 and utilize existing industry standards to identify a common physical interface and define the protocols necessary to retrieve records stored by light-duty vehicle EDRs.

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Lv.4/4+ 자율주행자동차 상용화를 위한 성능인증제도 도입방안

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Performance Certification System for Deployment of Lv.4/4+ Autonomous Vehicle

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Key Words : Autonomous vehicle(자율주행자동차), Performance certification system(성능인증제도), Autonomous vehicle act(자율주행자동차법), Conditional deployment(조건부 운행)

ABSTRACT

The purpose of this study is to develop a bill for the legislation of a performance certification system for the commercialization of autonomous vehicles. In order to effectively achieve the objectives of this study, theoretical and empirical research methodologies were employed, including literature review of prior research, government-published data, etc.

Korea has laid the legislative foundation for the deployment of autonomous vehicles(AV), such as Lv.3 autonomous vehicle safety standards and insurance systems, and manufacturers are set to sell Lv.3 AV. Following this, it seems that it is time to prepare a system to prepare for the era of Lv.4/4+ AV. Automobile safety standards, including AV, require international harmonization, but due to the delay in establishing international standards for the safety of Lv.4/4+ AV, it is predicted that the preparation of safety standards for Lv.4/4+ AV in Korea will also be delayed. In order to compensate for these impediment, it is necessary to establish a performance certification system to check safety performance even before international safety standards are not established, and to allow Lv.4/4+ AV to be sold and operated on road.

In order to promote the deployment of AV and support the spread of the ecosystem through the establishment of a performance certification system, we propose an amendment to the Autonomous Vehicle Act that considers the systemic consistency with the Motor Vehicle Management Act.

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구동축전지 안전기준 연구 및 인증체계 개발

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Development of Safety Standards and Certification System for Safety of Electric Vehicle

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Key Words : Reess(구동축전지), Kmvss(국내 기준 규정), BMS(배터리관리시스템), Thermal runaway(열폭주)

ABSTRACT

This study is research on the development of accident preventive measure, testing and Certification System based on BMS for ensuring The safety of electric vehicle, including preventing fires and explosions.

Electric vehicles have a risk of fire. which causes significant damage. Reserach is conducted on way to improve EV Safety through the real-time detection and automatic reporting of battery fires, fire spread prevention, and rapid fire suppression systems using BMS.

To increase the system's reliability, development of battery abnormal warning installation standards and research on battery thermal runaway delay and detection technology are being pursued to detect and extinguish battery fires early. In addition, thermal propagation testing standards are being developed to lead the way in evaluating battery thermal propagation technology.

The introduction of a certification system and a history management system to check the suitability of safety standards for new battery technologies and key components in advance is being promoted to minimize uncertainty regarding new technologies. Furthermore, by verifying fire and explosion scenarios in the event of an electric vehicle collision and deriving collision risk assessment and evaluation testing modes, research is being conducted to improve electric vehicle collision safety assessment technology

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SOTIF 표준 개발을 위한 Prescan 기반 IGLAD 교통사고 케이스 모델링 및 분석

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Modeling and Analysis of IGLAD Traffic Accident Case Using Prescan for SOTIF Standard Development

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Key Words : Autonomous driving(자율주행), Traffic accident(교통사고), Autonomous simulation(자율주행 시뮬레이션), IGLAD(아이글래드), ISO26262(자동차 기능안전 국제 표준), SOTIF(자율주행 시스템에 대한 안전표준), ADAS(첨단 운전자 지원 시스템), AEBS(긴급제동장치), Prescan(프리스캔)

ABSTRACT

Defects in the vehicle itself were considered the biggest risk factor for traffic accidents as the electrical and electronic components of vehicles, which were not there before, increase. Therefore, the vehicles have been developed based on ISO 26262(an international functional safety standard) which is focusing on functional defect safety evaluation of electrical and electronic component systems. However, in the future, as autonomous driving technology is applied, even vehicles without functional defects must be prepared for the dangerous traffic situation that may arise from exceptional or external factors. SOTIF (Safety Of The Intended Functionality) is a concept to prevent exceptional or external factors. The main objective of SOTIF is to decrease Unknown & Unsafe factors as much as possible by finding what we know (Known) factors and dangerous (Unsafe) factors. In this study, Prescan provided SIEMENS, one of the autonomous driving simulators, is used to make scenarios of IGLAD traffic accident cases. Through the simulation results, Unsafe & Safe cases were classified and risk factors among unsafe cases were derived.

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