

자동차 주행 안전기준 최신 동향 및 대응 방안 I



자동차로유지시스템의 안전기준 고찰을 통한 제어전략 수립에 관한 연구

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A Study on the Establishment of Control Strategy by Considering Safety Regulation for Automated Lane Keeping System

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Key Words : Automated lane keeping system(자동차로유지시스템), Transition demand(운전전환요구), Minimum risk manoeuvre(위험최소화운행), Emergency manoeuvre(비상운행), Dynamic driving task(운전)

ABSTRACT

The commercialization of Level 3 automated driving vehicles is scheduled to be realized in Korea as well. Unlike the previous regulatory method, where technology led regulations, detailed standards of safety standards to verify the safety of conditional driving automation established in a technology-leading method through a pre-regulatory method review the criteria for establishing a safe control strategy for the setting basis of the system, actual application cases of planned/unplanned Transition demand, operation procedures of Minimum Risk Manoeuvre, and response strategy of serious vehicle/system failures, and verify the safety book of the established control strategy The test procedures and methods are presented.

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운전자 지원시스템 평가방법

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Safety Evaluation Method for Driver Assist System

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Key Words : ADAS(첨단 운전지원 시스템), NCAP(자동차안전도평가), Driver Assist System(운전자 지원시스템),

ABSTRACT

ADAS technology development is developing more effectively in terms of safety as well as driving convenience. Driver assist systems for various driving situations as well as simple driving situations such as speed control and brake control are being developed. This driver assist system significantly reduced the driver's driving load. However, this has made it difficult to clearly recognize the capabilities and limitations of the driver assist system. It is time for a clear distinction between autonomous driving and driver assist systems. Two goals are to be achieved through the study of the safety evaluation method of the driver assistance system. The first is to prevent hype about the driver assistance system. The second is to create a safe traffic environment by preventing driver misuse of technology.

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자율주행차 안전성 평가방법 마련 연구에 대한 고찰

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A Study on the Development of Safety Evaluation Method for Automated Vehicles

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Key Words : Automated vehicle(자율주행차), Motor vehicle safety standard(자동차 안전기준), Scenario(평가시나리오), Test type(시험유형)

ABSTRACT

As the importance of securing safety in preparation for the introduction of a new type of automated vehicles (dual mode type automated vehicles etc.), it is necessary to preemptively respond through the development of new evaluation technology and application of evaluation system. Currently, interest in research on the safety evaluation of automated vehicles is increasing at home and abroad, and research has recently begun to be conducted in Korea to prepare a system.

Therefore, in this study, we will introduce the research on system preparation and examine the achievements so far. The study aims to derive a revision(proposal) by analyzing the improvement direction of applying the current motor vehicle safety standards in the field of driving and collision to level 4 automated vehicles, and to prepare a new standard to evaluate the safety of automated driving systems. In addition, scenarios and test types for driving safety evaluation of Level 4 automated vehicles are being developed, domestic optimization and standardization research is being conducted to Database according to domestic circumstances, and evaluation technologies are being developed through actual road and test bed evaluation. Finally, through this study, I would like to think about the direction and improvements of future research.

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국내 자율주행자동차 임시운행 허가현황에 대한 고찰

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A Study on the Status of Temporary Operating Permits for Automated Vehicles in Korea

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Key Words : Autonomus Vehicle(자율주행자동차), Temporary Operation Permit(임시운행허가)

ABSTRACT

We can feel that automated driving technology is slowly approaching us. Vehicles equipped with various sensors are occasionally seen on the road, and there are reports in the news that automated vehicles for sale to the public will be released soon. Thanks to the efforts of the relevant agencies, automated vehicles were able to drive on the road and be sold to the public. Testing on the road to develop automated vehicles is essential. The temporary operating permit system, introduced in February 2016, allows automated vehicles under development to operate on roads to support demonstration of technology development. In addition, we improved and supplemented the temporary operating permit system three times in order to respond to the rapidly developing technology development, and through this, about 250 automated vehicles were granted temporary operating permission. This paper analyze the overall status of temporary operating permits that have been in operation for over 6 years. First, we would like to examine the development direction of automated vehicles by year through the analysis of the status of temporary operating permits. Second, I would like to examine the process of changing the evaluation method for temporary operating permits according to the development of automated vehicle technology. Lastly, I would like to suggest a institutional improvement direction that can reflect the current technology trend.

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대형차 비상자동제동장치 국제안전기준 동향 및 고찰

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A Study on Trends of International Safety Standards of AEBS for Heavy Duty Vehicles

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Key Words : AEBS(비상자동제동장치), Motor Vehicle Safety Standard(자동차안전기준), UN Regulation No.131(유엔 안전기준 131번)

ABSTRACT

In Korea, in July 2021, it was mandatory to install AEBS for Heavy Duty Vehicle. Currently, domestic safety standards cover only performance standards in highway environments where Heavy Duty vehicles are mainly operated. However, in recent years, pedestrian accidents caused by large-sized trucks frequently occur in domestic city, and the need for countermeasures has emerged. AEBS(Advanced Emergency Braking System) IWG, an expert group under UNECE WP.29, which establishes international motor vehicle safety standards, revised the UN Regulation No. 131 in the urban environment of AEBS for Heavy duty vehicle, and adopted the amendment at the 187th WP.29 meeting. By analyzing relevant international safety standards and sharing the direction of future revisions of domestic safety standards, I intend to induce the manufacturer to develop the correct technology.

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후측방접근경고장치 시험방법 개선방향에 대한 연구

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A Study on the Improvement of Evaluation Test Protocol for Rear Cross Traffic Alert

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Key Words : RCTA(후측방접근경고장치), Active-RCTA(능동형후측방접근경고장치), KNCAP(한국자동차안전도평가), TTC(Time To Collision:충돌발생예상시간), ADAS(첨단안전장치)

ABSTRACT

With the development and advancement of transportation, the awareness of safety is growing, and accidents that come from the limitations of human cognitive ability are also increasing. Accordingly, the automobile industry is striving to develop and upgrade ADAS, and the rear approach warning device is also on the same line. However, since the majority of rear-end accidents occur in places other than roads such as parking lots, upgrading is slow unlike other ADAS devices. In the above circumstances, this study intends to conduct a test according to the test method currently being conducted in KNCAP to find out the current addresses of RCTA and Active-RCTA, and to talk about problems and development directions. It is also hoped that the direction of development of the test method or the development and manufacturing companies through the test will be the driving force to recognize and further enhance the limitations of the device.

운송수단의 발전과 고도화와 함께 안전에 대한 인식이 더욱 커지면서 사람의 인지능력의 한계에서 오는 사고들도 함께 증가 하고 있다. 그에 따라 자동차 업계에서는 ADAS의 개발과 고도화에 힘쓰고 있으며 후측방접근경고장치 역시 이와 같은 선상에 있는 장치이다. 하지만 후측방사고의 대다수가 주차장과 같은 도로이외의 장소에서 발생 하기 때문에 다른 ADAS장치들과 다르게 고도화가 더디게 진행되고 있는 상황이다. 위와 같은 상황에서 본 연구는 현재 KNCAP에서 진행되고 있는 시험방법에 따라 시험을 진행해 RCTA와 Active-RCTA의 현 주소를 알아보고 문제점은 무엇이며 발전방향에 대해 이야기 하고자 한다. 또한 시험 방법의 발전방향이나 해당시험을 통한 개발사 및 제작사들이 장치의 한계를 인지하고 더욱 더 고도화 할 수 있는 원동력이 되었으면 한다.

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