(9) Title

<code>STAMP/STPA Application</code> Guide for Automotive \sim From JASPAR Functional Safety WG Activity Result \sim

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Abstract

Automotive electronic control technology advancement is critical in the drive toward autonomous driving. Significant improvement in the safety, quality and efficiency for design and verification is required for automotive in-vehicle electronic control systems development. Automotive functional safety standard ISO 26262 was established in 2011, and the product application advanced, too. However, in case of autonomous driving, it becomes huge and complicated system that plural systems cooperate. It is thought that applying only conventional safety analysis method (FTA, FMEA) may derive risk of oversight and that applying STAMP/STPA additionally will be effective. Because STAMP/STPA performs hazard analysis and safety analysis by accident model that pays its attention to the interactions between each component in the system. JASPAR Functional Safety WG considered how to apply STAMP/STPA efficiently and effectively at development sites, and gathered it up as an application guide for development sites. The main contents are (1) Difference analysis against hazard analysis and safety analysis of ISO 26262 which is already operated, (2) Trial of STAMP/STPA on assumed EPB (electric parking brake) system as an example and extraction of its effect, (3) Standardization proposals of control structure diagram and analysis process description in order to operate efficiently and effectively between car manufacturers and suppliers.



Keywords

- (1) STAMP/STPA
- (2) Electric Parking Brake
- (3) Hazard analysis
- (4) Safety analysis
- (5) Control Structure Diagram