

(13) Title

Application and extension of STAMP/STPA to Railway Signalling System

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Abstract

STAMP/STPA is currently gaining attention as a new safety analysis method for complex systems. Here, the complex systems include complex human/machine interactions, internet communications or advanced software. The conventional safety analysis methods based on reliability engineering are not always applied to them, and, STAMP/STPA is expected as a top down safety analysis tool. The concept of STAMP/STPA includes an important paradigm shift in the conventional safety design process. It is important to understand the benefit of this paradigm shift through the concrete case study.

One of the advantages of STAMP / STPA is that even engineers who are not domain experts can analyze complex systems. On the other hand, the railway signalling system has been examined by domain experts based on accidents and defects so far, and the current safety is being built up. In railway signalling system, not only safety but also reliability are important factors. Therefore, STAMP / STPA is also extended for reliability, and we evaluate accidents and defects so far in the railway signal system.

Keywords

- (1) STAMP/STPA
- (2) Railway signalling system
- (3) Safety
- (4) Reliability