

## **Recent Research and Development in Railway Signalling and Telecommunications Technologies**

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This paper outlines an advanced ATP system compatible with existing systems, a train control system for local lines based on communication, and a constructing method for railway signalling systems based on RAMS evaluation. It also describes an improvement in switch and lock system, application of formal methods to signalling software, a study of lightning protection measures for signalling devices and a shunting problem of track circuits. In addition, it introduces an application of a new telecommunication technology, a safety analysis for signalling systems, EMC and some applications of image processing for railway.