

## Urban Rail Transit CBTC Computer Interlocking Subsystem Relying on Multi-Template Pen Point Tracking Algorithm

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**Abstract :** In the urban rail transit CBTC system, interlocking is considered one of the most basic systems, which has the characteristics of logical complexity and high-security requirements. The development and verification of traditional interlocking subsystems are entirely manual processes and rely too much on the designer, which often hides many uncertain factors. In order to solve this problem, this article is based on the multi-template nib tracking algorithm for model construction and verification, achieving the main safety attributes and using SCADE for formal verification. Experimental results show that this method helps to improve the quality and efficiency of interlocking software.

**Keywords :** computer interlocking subsystem, penpoint tracking, communication-based train control system, multi-template tip tracking

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