

Modeling China Metro Train Route Occlusion Operation Method Based on Time Petri Nets

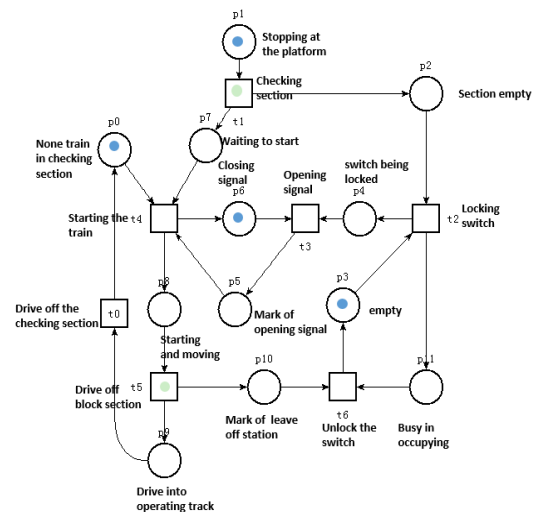
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This demo explains methodology of the Route Occlusion Method (ROM) and Improved Route Occlusion Method (IROM) work. The main idea of IROM is an independent protection system which embedded in the basic wayside signal system. It's mainly function is checking and confirming each train's position.

The fundamental workflow of ROM is as follows,

Firstly, a train stops at the platform and waits for passengers to get off or aboard. The signal system locks switches at the same time if front section is empty. Secondly, the train starts when signal light changes to green. It needs three factors to start the train. They are signal machine turning to green, front section being empty and switches being locked. Thirdly, all the equipment of

signal system return to initial state after the train leave off the block section.



A pivotal difference of IROM compared with ROM is that the train's position checking results of protection system play as a key precondition to start next train. In this case, IROM prevents train from start when signal machine turn to green once any signal equipment fail to work. It is pointed out that the checking system is very useful when signal system converts to degraded mode.