



Intelligent Train Control and Monitoring Technologies

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Message from the Guest Editors

Dear Colleagues,

Compared to conventional transportation systems, railway transportation has greater energy and transport efficiency. In a smart railway system, the train control and monitoring system (TCMS) plays a crucial role in controlling trains. For safety, modern TCMS collect vehicle information for drivers and remote monitoring personnel and provide user interfaces for them to operate and move vehicles. Although the TCMS may not be as critical as the power system or the vehicle's physical structure, it remains the essential component to achieve safety. The TCMS is also a vital system for automatic driving. The TCMS transmits information from sensors to the control center, i.e., the brain, for processing and deciding how to react.

The TCMS contains some subsystems, including train communication networks, mobile communication networks, vehicle control units, and human-machine interfaces. These subsystems assist drivers or the remote center to ensure that the train is working well. In recent years, with the rapid development of AI and communication technology, modern TCMSs can provide more functionalities.





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Message from the Editor-in-Chief

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