

# Toward Next-Generation Railway Maintenance



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Many railways today are focused on the prospect of adopting digital technologies as a key to making their maintenance processes more efficient without compromising their current levels of operational safety. This trend is inevitable since the majority of the operating costs of railways are generated from the maintenance of their assets, including infrastructures and rolling stocks. Reducing their operating costs through more efficient maintenance processes is of vital importance to railways intent on becoming more competitive against each other, as well as other transportation modes, which themselves are gaining strength and competitiveness by benefiting from the rapid progress of digital technologies.

With such a competitive environment in mind, this issue of the *Ascent* magazine features an overview of some of the solutions that RTRI has developed to identify more efficient maintenance processes for railway assets. One important trend in railway maintenance is the adoption of condition-based maintenance strategies, which is expected to revolutionize railway maintenance. Key technologies for this drastic change will be the integration of cutting-edge digital technologies including sensing, wireless communication, artificial intelligence, and big data analysis. Research and development that RTRI is pursuing in the field of railway maintenance is, of course, concentrated in this direction. In addition, this issue includes an article on the efforts of the French National Railway Company, Société nationale des chemins de fer français (SNCF), to apply digital technologies aimed at realizing efficient and effective railway maintenance.

We sincerely hope you will find this issue of *Ascent* interesting and helpful.

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