

Innovations in Transportation Control

It is impossible to increase the required freight rates using the standard information schemes on established routes. JSC "Russian Railways" is moving to dynamic traffic management schemes that can change the freight flow direction and regulate the track carrying capacity at any time.

The basis of JSC "Russian Railways" freight and passenger management is its traffic control centers (TCC), which incorporate unique technologies to control trains, rolling stock and locomotive fleets, train operation, etc., developed by the Research and Design Institute of Information, Communication and Automation in Rail Transport. The systems are designed to use modern, primarily satellite, means of identification to control the rolling stock and state of the railway infrastructure.

In 2012:

- ▶ the information and planning mode of the automatic train control system was implemented on the Saint Petersburg — Moscow route;
- ▶ the range of implementation of scheduled freight traffic was extended (499 developed schedules for 2012/2013);
- ▶ the automated system for generating expected daily energy-optimized schedules — APK Elbrus — was put into permanent operation at the Chelyabinsk — Inskaya pilot test site; five Traction Resources Management Centers were created;
- ▶ at the Yaroslavl-Glavny station of the North Traffic Management Directorate an innovative integrated station automation system (ITAJR) was implemented: the dynamic station model is based on satellite navigation systems; the automatic wagon number recognition technologies were finetuned, the station operation schedule was automated;
- ▶ in collaboration with Italian specialists, a draft of a brand new high-speed suburban traffic was developed; it will be used, in particular, for the organization of transportation on the Adler — Krasnaya Polyana — Apika- Service route during the 2014 Sochi Winter Olympic Games and afterwards for the organization of high-speed passenger rail;
- ▶ integrated microprocessor-based systems were implemented at marshal yards, including locomotive radio remote control;
- ▶ extended functions and increased reliability of the train separation control systems were provided.

INNOVATIVE DEVELOPMENT STRATEGY OF JSC "RUSSIAN RAILWAYS" FOR THE PERIOD UP TO 2015 (WHITE BOOK OF JSC "RUSSIAN RAILWAYS" 2010)

Innovative development program for the period up to 2015	Innovative development priorities:
<ul style="list-style-type: none"> ▶ 13 April 2011 Approved by the working group of the Government Commission on High Technologies and Innovation ▶ 19 April 2011 Endorsed by the Board of Directors of JSC "Russian Railways" ▶ 26 June 2011 Approved by the Board of Directors of JSC "Russian Railways" 	<ul style="list-style-type: none"> ▶ Development of existing technology platforms, development and introduction of new technology platforms; ▶ Improvement of energy efficiency and introduction of resourcesaving technologies; ▶ Creation of modern transport and logistics systems, including highspeed and express ones; ▶ Development of intelligent traffic control systems based on modern digital telecommunication and satellite technologies and specialized management information systems; ▶ Radical renewal of rolling stock and infrastructure, bringing them in line with international standards.