

## Innovation and Technological Development of JSC “Russian Railways”

In 2012, we successfully progressed a number of projects from the Innovative Development Program. First of all, we would like to highlight the advanced technology transfer projects: the creation of a world-class rolling stock, the introduction of new transportation control technologies, and the development of energy saving technologies.

### JSC “Russian Railways” Global Advanced Technology Priorities:

- ▶ Gas turbine locomotive fueled by compressed natural gas
- ▶ Digital train operational and technological communication system
- ▶ Large-scale traffic management technologies based on intelligent systems using passenger and freight traffic forecasts and technological process integration
- ▶ Decision support system for life cycle management (URRAN)
- ▶ Station safety technology based on digital models and satellite navigation (MALS)
- ▶ Train separation control system based on the integrated use of track circuits, satellite navigation, local and distributed digital channel

Russian Railways' annual costs for R&D

**0.4%**

of revenues

JSC “Russian Railways” is one of few Russian Companies, whose R&D expenditures are comparable to those of its foreign competitors.