

## JSC RUSSIAN RAILWAYS DIGITAL RAILROAD VISION & IMPLEMENTATION



Russian Railways



OAO «Russian Railways»' CIO  
Evgenii Charkin

# DIGITAL RAILROAD

## RAIL FREIGHT



## PASSENGER TRANSPORTATION



## RAILWAY INFRASTRUCTURE MAINTENANCE AND OPERATION



## CROSS-BORDER INTERACTION



## TRAIN STATION



## TRAVEL SERVICES



## INTERACTION WITH PUBLIC AUTHORITIES





# PASSENGER TRANSPORTATION – CONVENIENCE, COMFORT, SAFETY



## DIGITAL SERVICES FOR PASSENGER

- Seamless WiFi roaming
- Multimedia services (navigation, entertainment, etc.)
- Order of services (restaurant, taxi, hotel, etc.)
- Paperless technology
- Personal offers

## INTELLIGENT CAR AND STATION

- Common passengers area
- Access control
- Individual customizing options in compartment
- Operational status control
- Access to station resources

## COMPLEX SAFETY

- Security system based on digital models
- Automated integrated monitoring (traffic flow control, face and emergency situations detection, control of the state)
- Centralized management

**INFORMATION SERVICES**  
**BOOKING SERVICES AND TICKET**  
**PURCHASE**  
**FLEXIBLE PRICING**

**TRAVEL SERVICES**  
**CUSTOMER FEEDBACK**



# RAIL FREIGHT - ACCURACY & TRANSPARENCY



## DIGITAL RAIL CAR

- Condition control
- Remote identification
- Scheduling on-condition repair
- Location and cargo control

## DIGITAL LOCOMOTIVE

- Parametric control
- Locomotives auto communication
- Scheduling on-condition repair
- Unmanned technologies (train auto navigation)
- Train driver condition control

## DIGITAL INFRASTRUCTURE

- Infrastructure condition control
- Centralized control and maintains
- Scheduling on-condition repair
- Interaction of infrastructure objects
- No traffic lights driving
- High-precision positioning

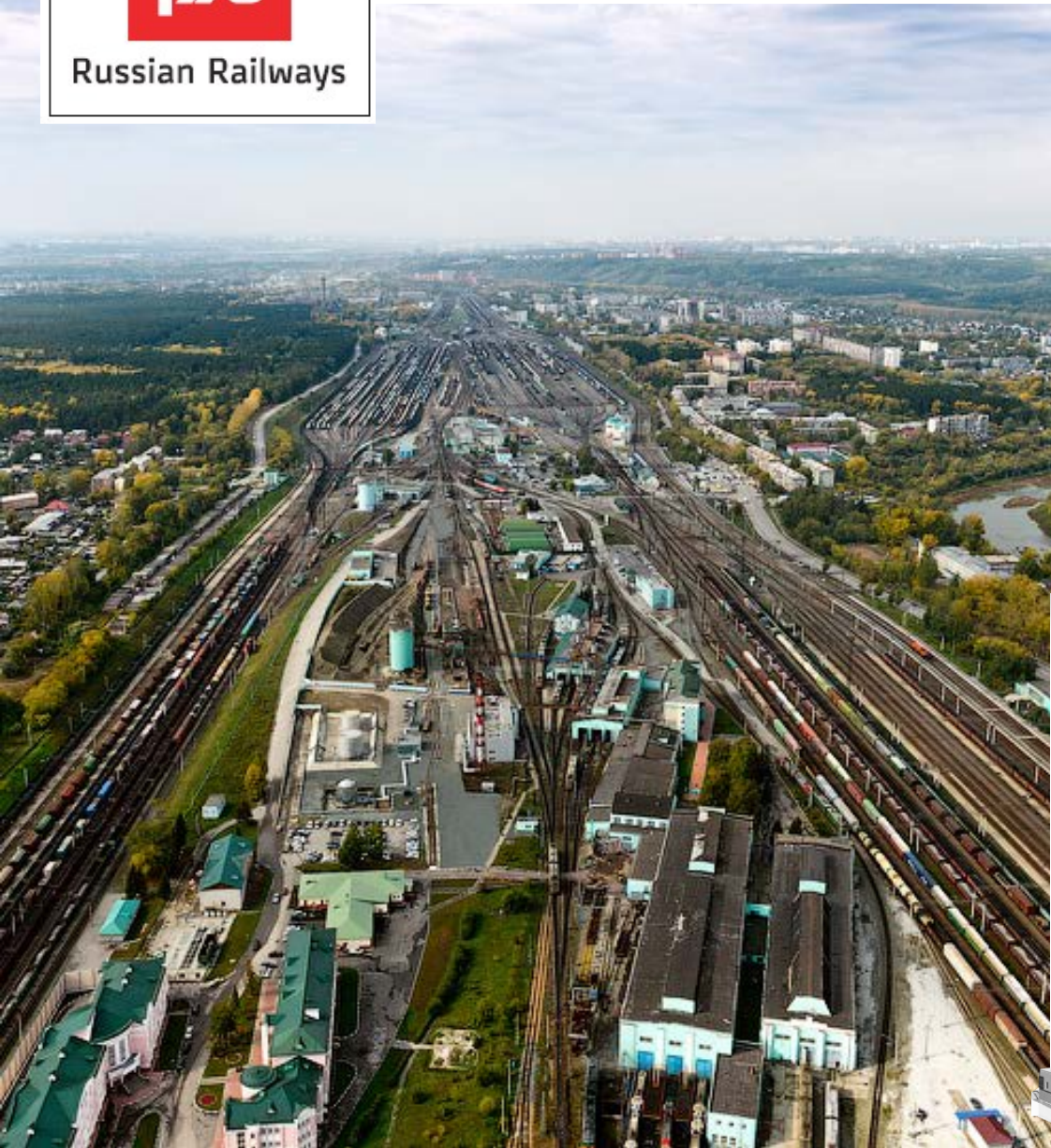
**INTELLIGENT TRAFFIC CONTROL**  
**FLEXIBLE PRICING**  
**“CARGO EXPRESS” / TRANSPORT CORRIDORS**

**PAPERLESS INTERACTION**  
**LOGISTICS SERVICES**



Russian Railways

# DIGITAL COMMUNICATION – BASE OF DIGITAL RAILROAD



TRAIN ROUTE'S DIGITAL CONTROL SYSTEM (ON STATION)



GLONASS GPS

*High-precision positioning*



*Communication services*

SUPPORT OF INTEGRATED WORK OF ALL COMPUTERISED SYSTEMS IN JSC RUSSIAN RAILWAYS



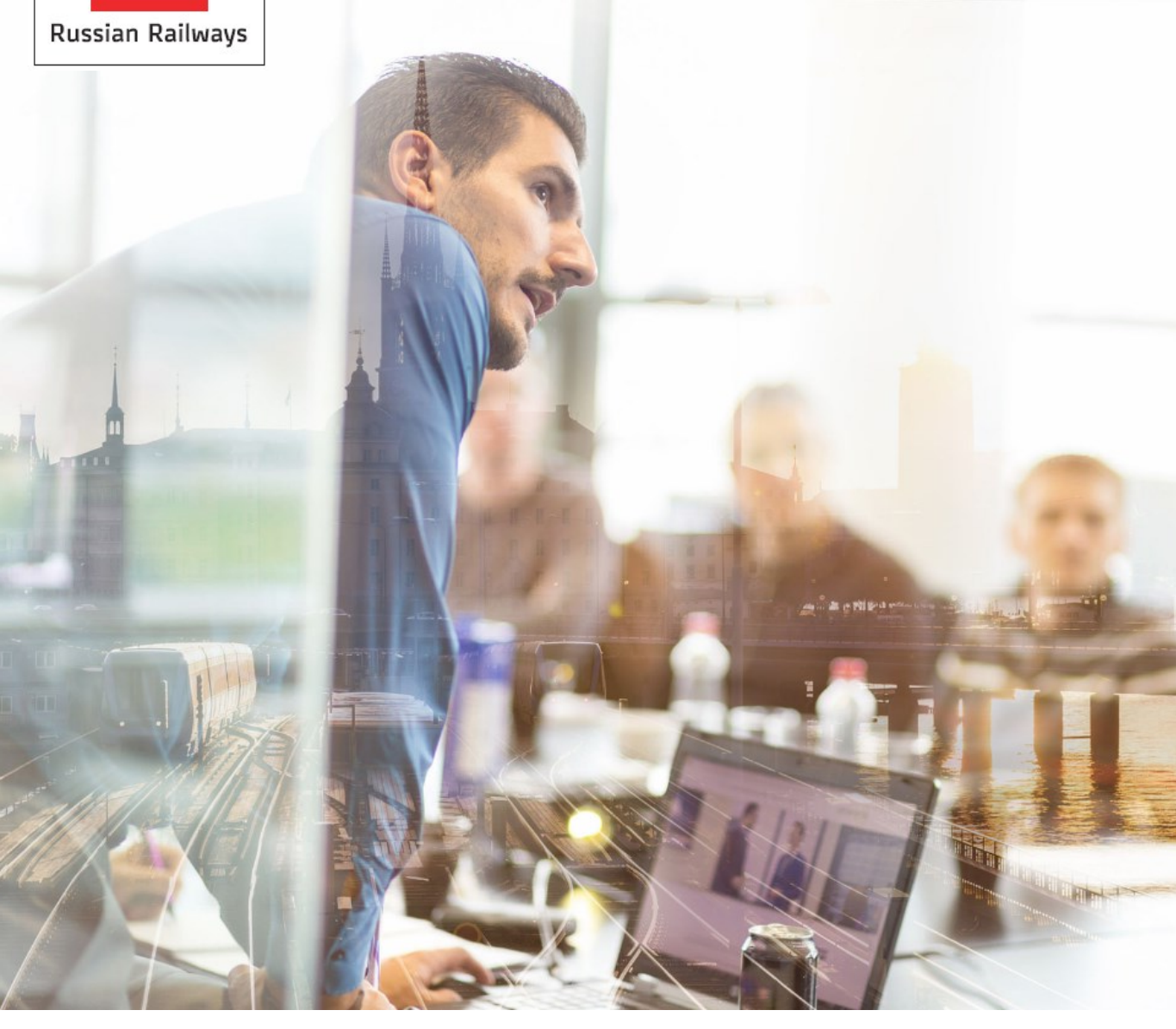
DISPATCHERS



*Automatic train operation*



## DIGITAL RAILROAD MEANS COOPERATION



### LOOKING FOR INNOVATIONS

- Russian development
- World class solution
- Best practice
- Start-up etc.

### JOINT EFFORTS

- Siemens
- Bombardier
- Public authorities
- Etc.

### UIC DIGITAL PLATFORM AS ENABLER

- Knowledge & experience sharing
- Coordination
- Standardization
- Unified solutions



Russian Railways

**THANK YOU!**