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SEAMLESS TRANSPORT CHAINS THROUGH HARMONISATION

Success Stories and Global Perspectives for Rail Freight

Session 1: Worldwide Innovation Trends and Best Practices

Moderator:

Alex Puissant, free lance journalist



GRFC 2014 VIENNA



23-26 June 2014

Boris Lapidus



Dr. Sc. in Economics, Professor

Since 1993 he has been a Member of the Board of the Russian Ministry of Railways and its corporate successor JSC RZD. From 2003 to 2010 he held a position of Vice President and Senior Vice President of JSC “RZD”. Since 2010 he is Director General of JSC VNIIZhT and Senior Advisor to the RZD President. Boris Lapidus is Chairman of the Joint Scientific Council of JSC RZD and Chairman of the International Railway Research Board (IRRB).



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Success Stories and Global Perspectives for Rail Freight

«Some innovative solutions in JSC “RZD”
Holding aimed at optimizing freight
traffic»

Boris Lapidus, Prof., Dr. Sc. in Economics, Director General
JSC “VNIIZhT”, Senior Advisor to the President of JSC
“RZD”, IRRB Chairman



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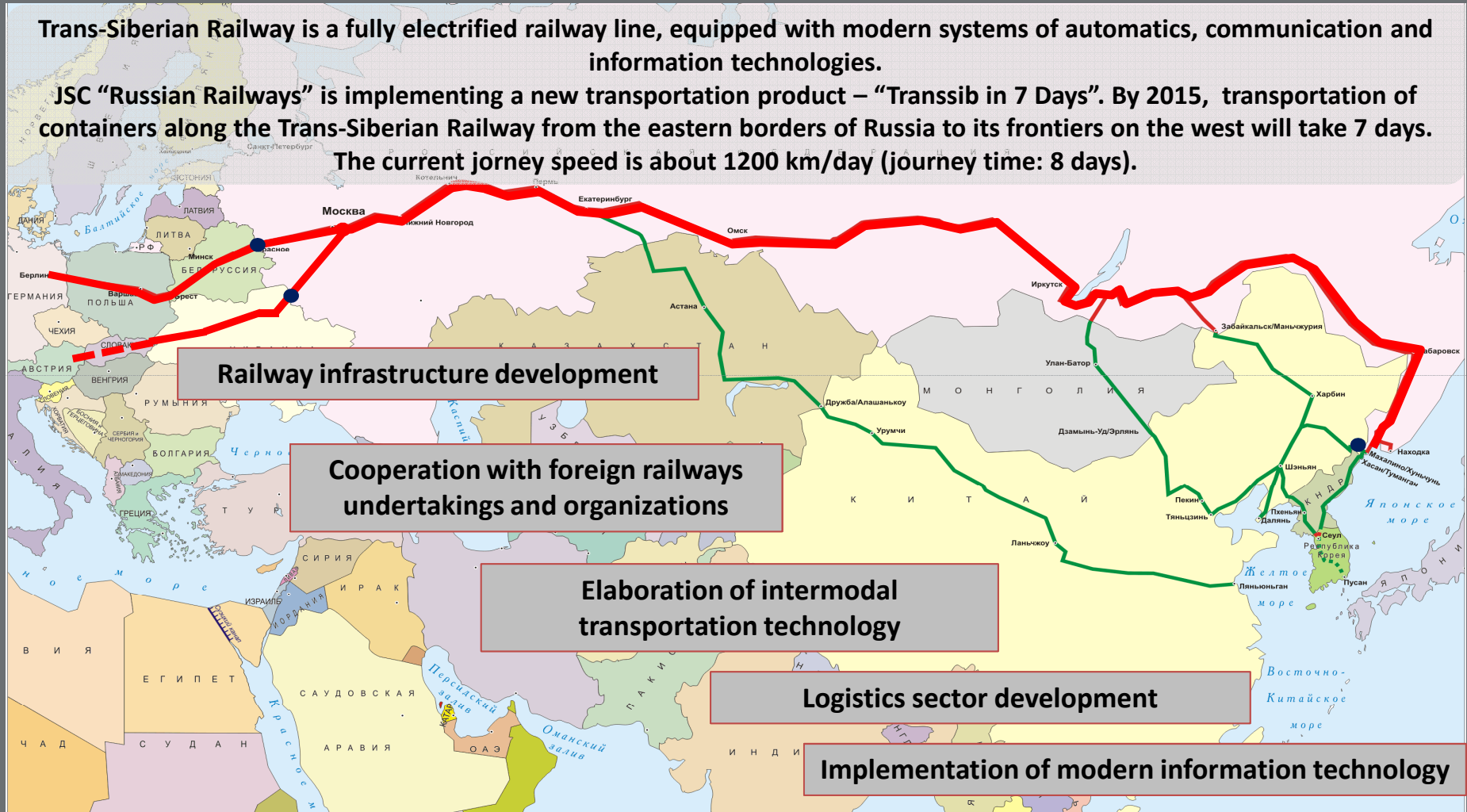
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International transportation corridor «Transsib»

Trans-Siberian Railway is a fully electrified railway line, equipped with modern systems of automatics, communication and information technologies.

JSC “Russian Railways” is implementing a new transportation product – “Transsib in 7 Days”. By 2015, transportation of containers along the Trans-Siberian Railway from the eastern borders of Russia to its frontiers on the west will take 7 days.

The current journey speed is about 1200 km/day (journey time: 8 days).



Target parameters of the transportation project “Transsib in 7 Days”



delivery speed and consistent transit time



*9806 km Nakhodka – Krasnoye,
7 days, 1400 km/day*



service provided on a regular basis



*potential capacity to accommodate up to 15
train per day*



maintaining a fixed timetable



*in terms of both journey time and time of
arrival at final destination*



*competitive tariff based on the criteria “price –
delivery time”*



target tariff deep-sea + \$1000



consistent tariff policy



for the minimum timeframe of 2 – 3 years



*information on tariff changes provided well in
advance*



60 days ahead of enactment of changes

Increase in unified tonnage rating of the train from 6,300 to 7,100 tons

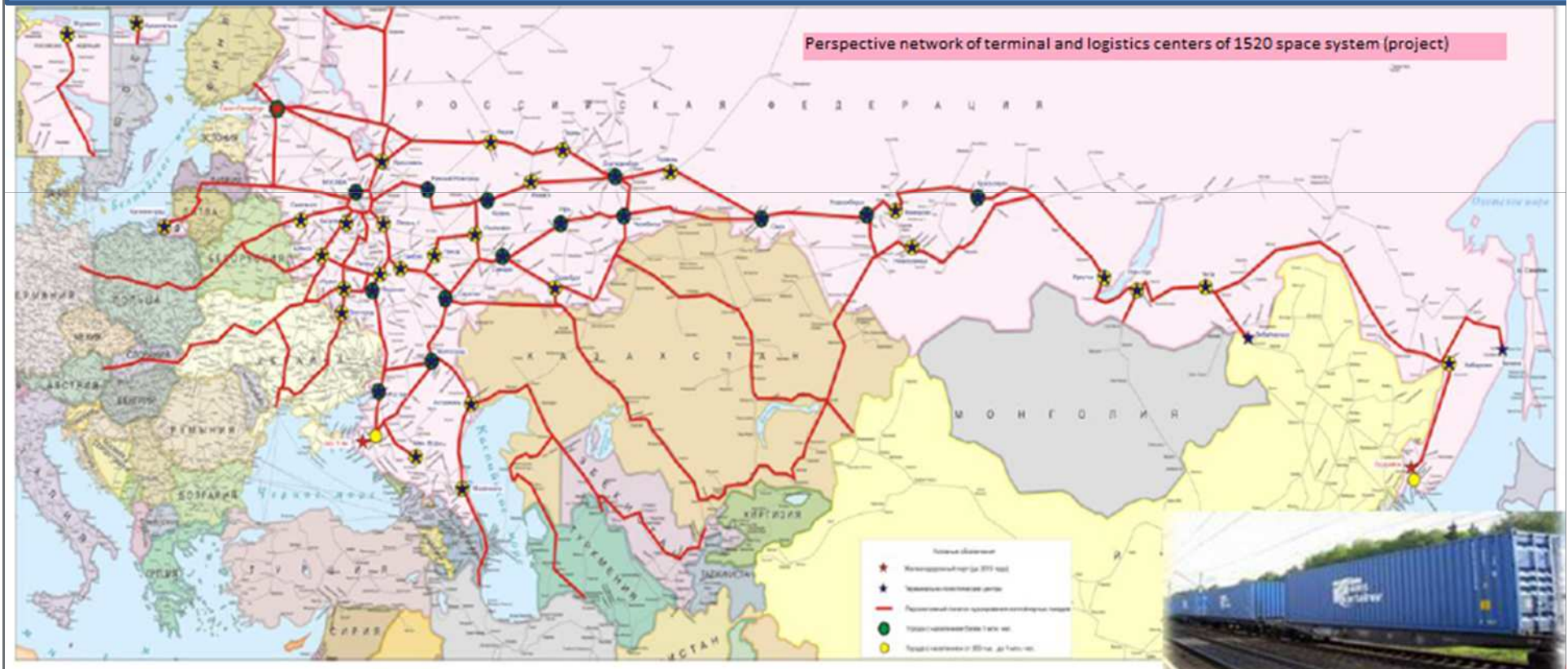


Domestic rail industry developed new cars with axle load of 25 t, which provided for the technical possibility to increase the unified tonnage rating of freight trains from 6,300 t to 7,100 t while keeping the train length of 71 conventional freight cars unchanged.

At the first stage this tonnage rating is applied to lines connecting the Kuznetsk Coal Basin (Kuzbass) with the Far East ports Sovgavan' and Vanino (5,300 km). It will result in coal traffic volume growth from 11 (realistic scenario) to 39 (optimistic scenario) million tons per year along those directions

Russian transportation corridors and network «railway port– transport and logistics hub - satellite»

Creation of terminal and logistic centers on the territory of Russian Federation is a– large-scale infrastructure project of JSC RZD that includes infrastructure development and operator performance development



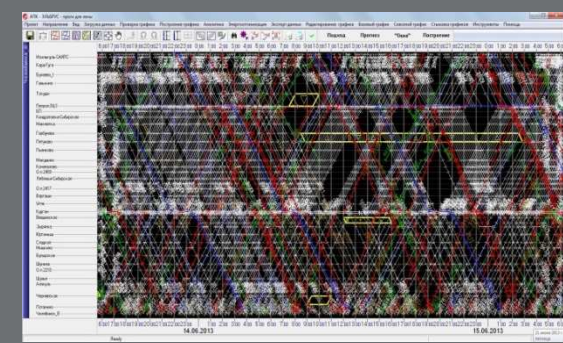
Automated system for drawing forecasting energy-saving train timetables APK ELBRUS

✓ Drawing a daily forecasting energy saving train timetable

✓ Interlinking variant timetables among different service areas of the rail network. Formation of a through timetable

✓ Automated transfer of energy saving forecasting daily timetable in the CTC system

✓ Automated calculation of parameters of the variant timetable.



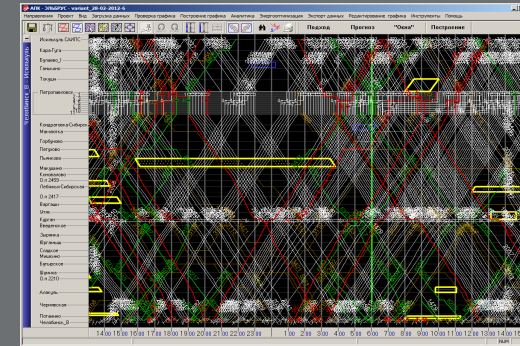
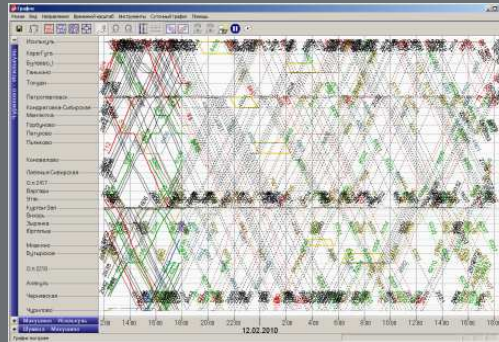
Сводная таблица параметров

Параметр	Значение
Количество поездов на маршрут	187
Средняя скорость	64
Удельная энергоемкость	572
Удельная стоимость	55,8
Удельная стоимость	46,9
Удельная стоимость	25
Удельная стоимость	13,5
Удельная стоимость	88
Удельная стоимость	78
Удельная стоимость	56
Удельная стоимость	1988
Удельная стоимость	8
Удельная стоимость	4,4

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Parameters taken into account in drawing a variant timetable

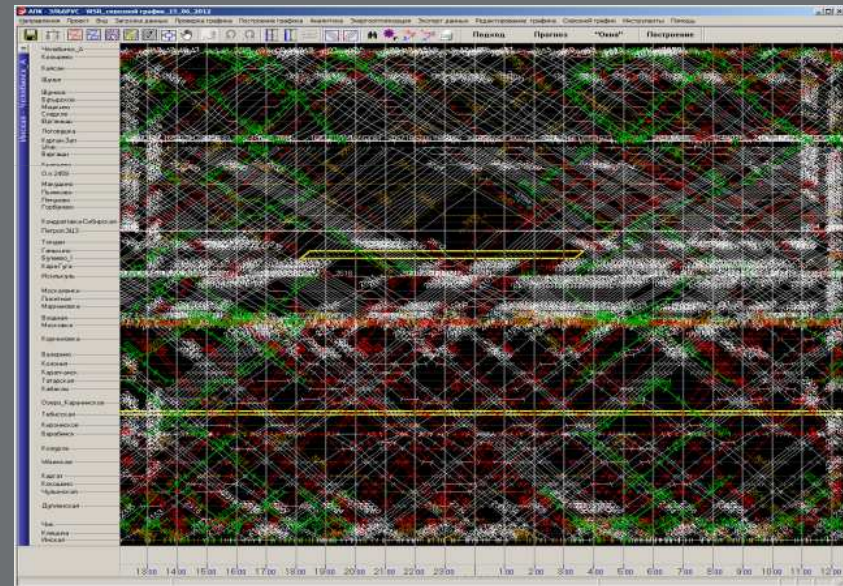


- train length
- intervals between trains
- priority handling of certain categories of trains
- counting the number of receiving and departure tracks on a station and their specialization
- the "break" and the system of "breaks"
- speed limits
- speed regaining
- number of main tracks on railway lines

Economic efficiency on the Ural-Siberian railway service area with mileage of 6,000 km

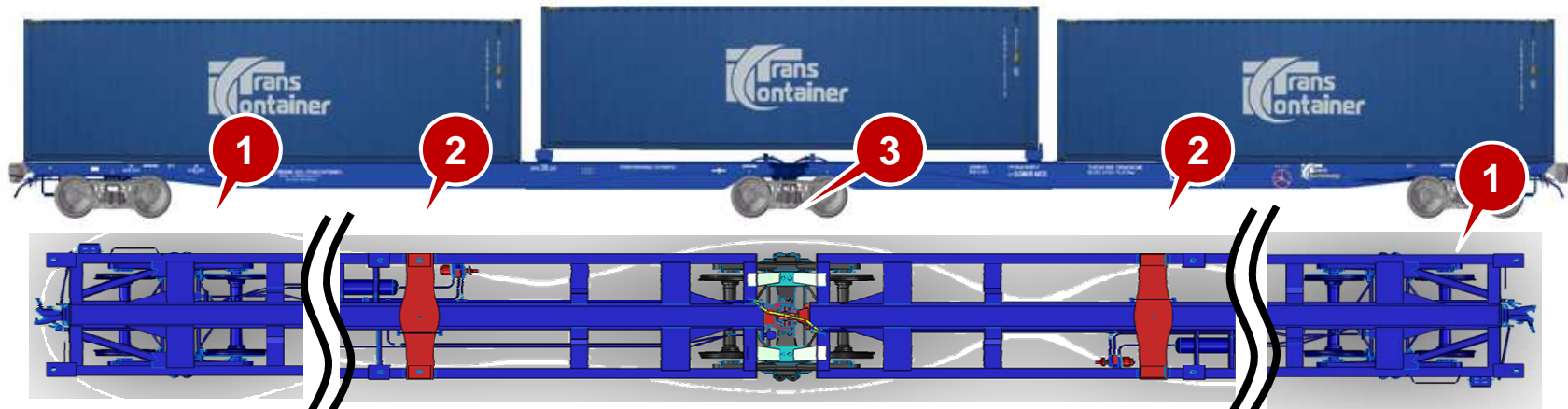
Efficiency is achieved by:

- harmonization of traffic management and dispatch control;
- improvement of the execution quality of the train timetable;
- saving of electric power and fuel for traction.



Only thanks to the decrease in the cost of electric power for traction the efficiency is more than 180 million roubles per year.

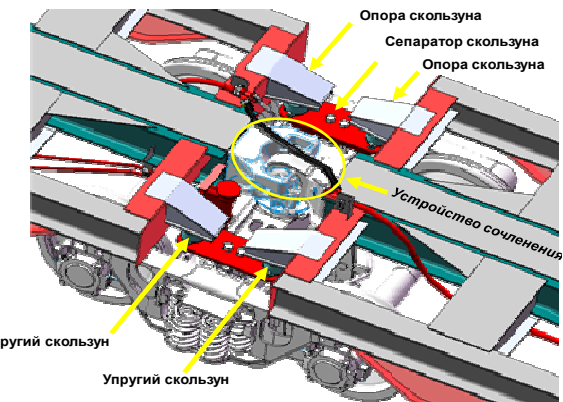
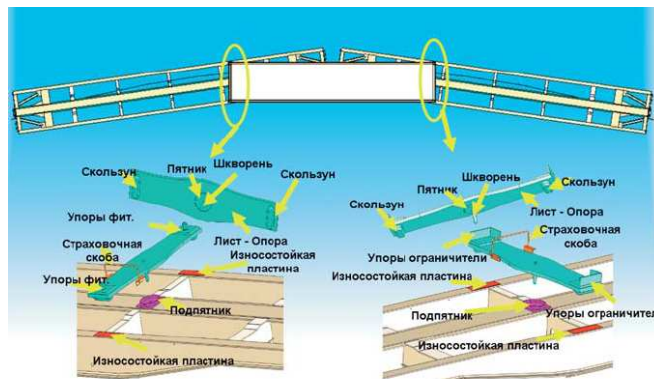
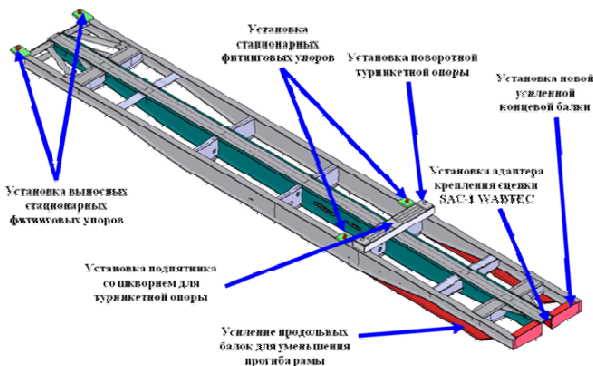
Proposed solution – an articulated container platform



1 Enhancement and modernization of the 13-740 platform frame to transform it into an articulated frame

2 Installation of tourniquet support (a set of supporting and fastening devices) with fitting elements

3 Installation of articulating device and elements transmitting loads to the bogie articulation of the platform



Modernization of two 60 ft. platforms into one 120 ft. platform

Innovative container platform with design speed up to 160 km/h

Maximal dead loading on container car axle, no more than, kN	210
Maximal impact load made by wheel on rail, no more than, kN	160
Capacity, no more than, t	61,0
Tare weight, no more than, t	21,0
Length over pulling faces of couplers, no more than, mm	13,400
Length of platform frame, no more than, mm	12,200
Clearance according to GOST-9238 (Federal standard):	
- platform;	1- BM
- bogie.	02- BM
Design speed, no more than, including, km/h	160,0
Transportable high-capacity containers	45 ft., 40 ft, 20 ft.
Platform capacity, TEU	2,25
Height of automatic coupling above the top of rail head (loaded car), no more than, mm	950

Project goal - design of innovative container platform for transportation of high-capacity containers and ensuring observance of all standards, established and developed for infrastructure of high-speed railways in Russia, CIS countries, Georgia, Latvia, Lithuania, Estonia and Finland.



It is planned to use the new innovative platform for container transportation by express container trains on high-speed railway lines (HSR) that are being established in the Russian Federation.

To increase the speed of container transportation, a shift to the next generation cars with improved performance in terms of safety and speed is needed

**Thank you very much
for your kind attention!**