



## Key Projects 2015

### **EXPANSION OF IP/MPLS DATA TRANSMISSION NETWORK, IMPLEMENTATION OF CDNSOLUTIONS**

In 2015, the Company provided technical readiness for the expansion of hardware and software WANDL IP/MPLS View system, which will analyze the traffic distribution and traffic matrix construction to plan and expand the backbone network capacity.

The Company created Internet filtering traffic system (URL-filtering), expanded upgraded IP/MPLS network nodes of Rostelecom, which will enable to expand the URL-filtering functionality of the Internet resources listed in zapret-info.gov.ru single registry database in accordance with the legislation of the Russian Federation.

Moreover, the Company organized new DWDM 100G/40G systems, including use of fiber optic links existing in the territory of Russia, and retrofitted existing DWDM 100G/40G/10G systems in all regions, including zonal systems, which are transferred into the category of the backbone.

The Company provide alternative and expanded existing bindings for the connection of regional nodes of IP/MPLS backbone network, connected 882.37 km of fiber-optic, upgraded Palladion monitoring system, completed the construction of ENIP intelligent platform of Rostelecom.

At the end of 2015, it provided the capacity of Company's IP/MPLS backbone network of over 12.3 Tbit/s.

During the 2014-2017, it is planned to further increase IP/MPLS network capacity to meet growing customer demand in all segments, as well as domestic demand for backbone capacity by providing B2B, B2C, B2G end-sales and IP-Transit sales support on the national operator's broadband market. The organization of new fiber optic of

DWDM and retrofitting of existing fiber optic links for the organization of high-speed optical channels, expansion of existing bindings to connect the regional units will also provide IP/MPLS network capacity growth and increase in the traffic transmitted.

### **SAKHALIN - MAGADAN - KAMCHATKA FOCL CONSTRUCTION (IP/MPLS BACKBONE NETWORK DEVELOPMENT)**

The project provides modern communications services to remote Russian regions: Magadan region, Kamchatka Territory and Sakhalin Island. The project envisages the construction of the marine FOCL - Magadan, Okha - Ust Bolsheretsk followed by the organization of the digital output to Magadan and Petropavlovsk-Kamchatsky.

In 2015, the Company performed a set of measures to ensure the technical availability of marine and coastal areas of the first UFOTL system Sakhalin - Magadan, obtained permits in accordance with the legislation of Russian Federation for construction of the facility, laid 883 km of fiber-optic cable. It also laid the land cable, which provides binding of the marine optical system to Rostelecom operating network, performed construction and installation works of the process equipment on the territory of Sakhalin and Magadan branches.

Technical readiness of marine and coastal areas of the second UFOTL system Sakhalin - Kamchatka is scheduled for Q4 2016.



### **ORGANIZATION AND RETROFITTING OF HIGH-SPEED TRANSIT BACKBONE NETWORK WITHIN EUROPE - ASIA TRANSIT PROJECT (BTM TEA)**

In 2015, to increase revenues and to strengthen the market position of Rostelecom in Europe – Asia backbone transit segment the Company implemented a project to increase the capacity by building a new long-distance junction Russia (Zabaykalsk) - China (Manchuria/China Telecom) with a capacity of 120 Gb/s, with the installation of DWDM systems on Zabaykalsk - Kadala section. Organization of transit channels increased the international traffic in these areas.

It also ensured technical readiness of the international junctions Kyakhta (Russia) - Sukhbaatar (Mongolia), retrofitted Rostelecom transit network, laid 87 km of fiber optic cable for 100 % geographical redundancy of the international junction. In order to maintain the leading position in Europe - Asia transit capacity market in 2016 it is planned to carry out retrofitting (modernization) of border junctions in the direction of Japan 200G (UFOTL) and China by 600G. At the same time, it is planned to organize additional DWDM system at the section Kingisepp - Narva (Estonia), Stockholm - to improve the reliability of traffic to Europe.

### **NORTH - SOUTH TELECOMMUNICATIONS PROJECT (IP/MPLS BACKBONE NETWORK DEVELOPMENT)**

In 2015, the Company bought optical fibers, laid fiber optic cable, retrofitted the existing Alcatel 1830PSS system, installed the new ECI system that provided international traffic redundancy at MN junction Russia - Azerbaijan.



The Company laid 87 km of fiber optic cable for 100 % geographical redundancy of the international junction.