# Operational DCS status report incl. EDCP implementation plans + status of implementation of best practices (ROSHYDROMET)

**Presented to CGMS-54 Working Group 1 session, agenda item 7.6**

Coordination Group for Meteorological Satellites

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## Executive summary of the WP

This document addresses the current status and technical specifications of the Russian data collection system and related future plans. The DCS is established to provide collection and distribution of meteorological data from the remote areas and to support natural hazards warning system. Roshydromet has developed and deployed the national DCS based on geostationary meteorological satellites Electro-L No.2, No.3 and No.4 (14.5W, 76E, 165.8E) with a backup option via Luch-5 series communication satellite and highly elliptical orbit satellites Arctica-M No.1 and No.2. There are 698 DCPs currently deployed. DCPs are distributed all over the Russian territory, including 141 DCPs in hard-to-reach areas. The composition of the spacecraft constellation will be further revising with the end of geostationary Electro-L No.5 satellite testing.

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## Technical specifications

- DCS comprises:
  - network of DCPs at Roshydromet' observational sites
  - relay transponders at Russian satellites of Electro-L, Luch-5 and Arctica-M series
  - ground reception stations at SRC Planeta satellite centers

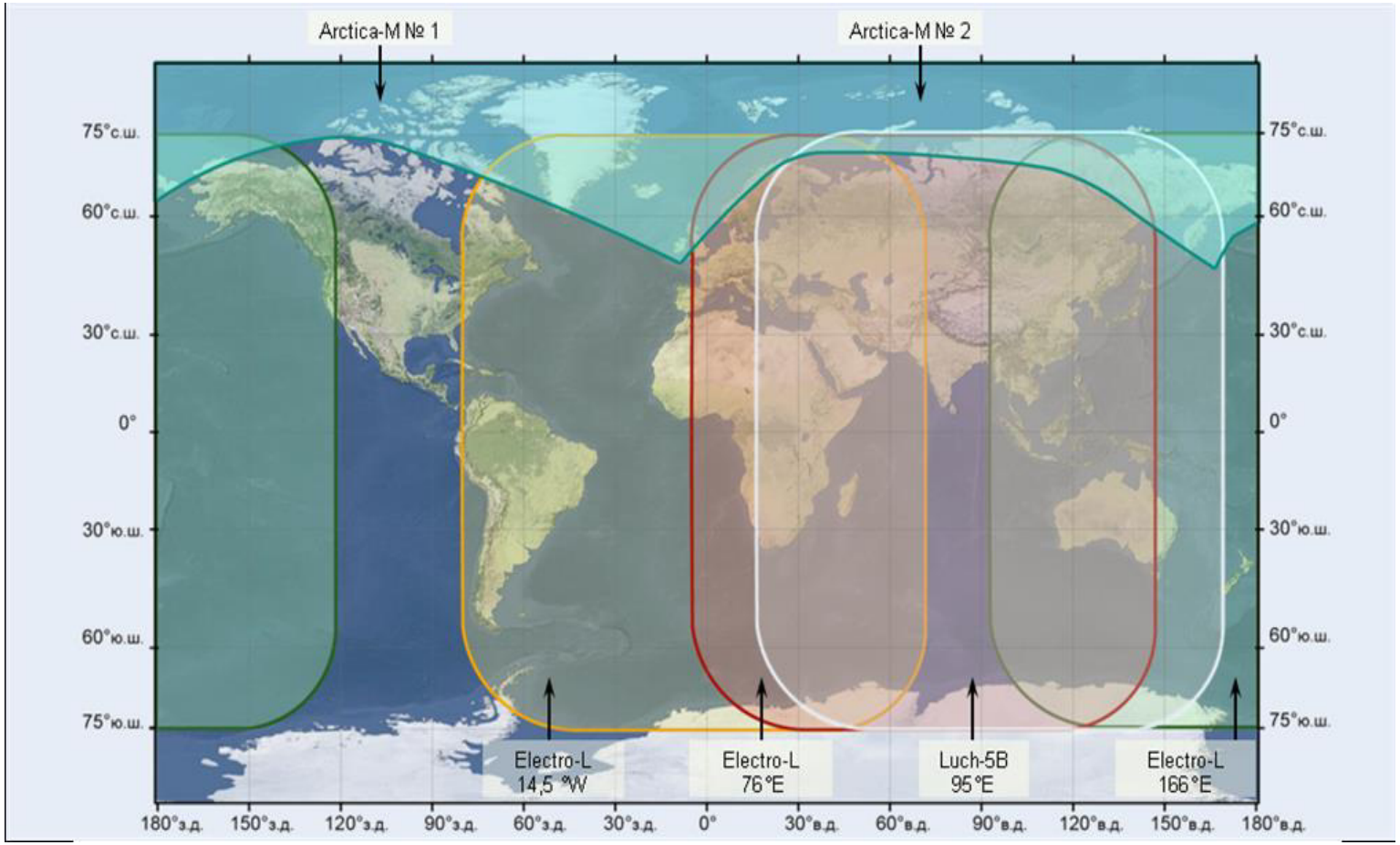
- Frequency bands:
  - 401.5-402.5 MHz (uplink) and 1696.5-1697.5 MHz (downlink) for GEO satellites
  - 402.0-403.0 MHz (uplink) and 1697.0-1698.0 MHz (downlink) for HEO satellites

- Transmission rate - 100 or 1200 bps.
  The message size is up to 15 000 bit.
  The transmission time is synchronizing with GLONASS/GPS signals.:

## Technical specifications

- The constellation of Electro-L geostationary satellites provides realtime coverage of the territory from about 75°S to about 75°N, with Arctica-M series satellites covering high Arctic latitudes

- DCP can be equipped with traditional (one-way) or two-way communication equipment (terminal). Two-way terminal is designed to increase the reliability of message transmission and remote terminal control

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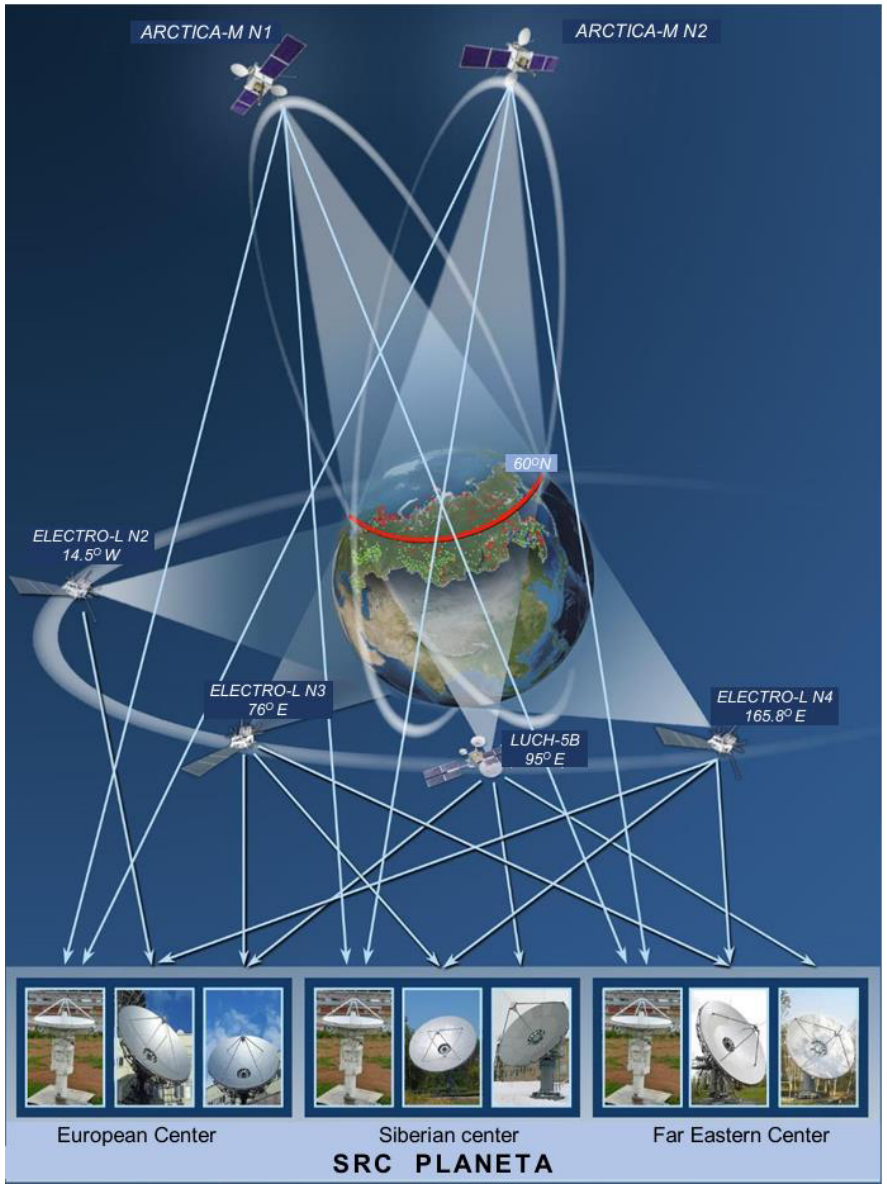
## Current status

- Russian DCS is developed for data transmission via geostationary meteorological satellites of Electro-L series (constellation of three spacecrafts at 14.5W, 76E, and 165.8E) with backup option via communication satellites of Luch-5 series (at 95E), and also highly elliptical orbit satellites of Arctica-M series (constellation of two spacecrafts)

- Messages transmitted from DCPs are relayed to the European (Moscow region), Siberian (Novosibirsk) and Far Eastern (Khabarovsk) satellite centers of SRC Planeta. Both Arctica-M satellites also are relayed to same three centers

- For this moment, Roshydromet applies one-way terminals to work via geostationary and highly elliptical orbit satellites. Two-way terminals are placed in hard-to reach areas only and work via Arctica-M satellites

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## DEVELOPMENT PERSPECTIVES

Roshydromet's plan is to increase the number of DCP with one and two-way terminals used, primarily in the Arctic and Far Eastern regions at hard-to reach hydrometeorological observation points predominantly.

# Thanks for your attention!

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