

SATELLITE SYSTEM “LOUTCH”



The QR code leads to
a video clip that tells
about the “Loutch”
system



ABOUT COMPANY

Joint-stock company “Satellite System “GONETS” — the sole operator of the State Space Corporation ROSCOSMOS for satellite communication and relay systems.

Scope of functions — satellite systems management:


- Multifunctional system for personal satellite communications “Gonets”
- Multifunctional space relay system “Loutch”




Business scope:

- Application for the intended purpose of satellite communication and relay systems with spacecraft in low and geostationary orbits
- Designing advanced satellite communication systems
- Providing of communication services:
 - data transfer
 - personal messages
 - M2M satellite communication channel
 - transmission of corrective information for GPS/GLONASS navigation systems

**The system provides
satellite communications
at any location on Earth**

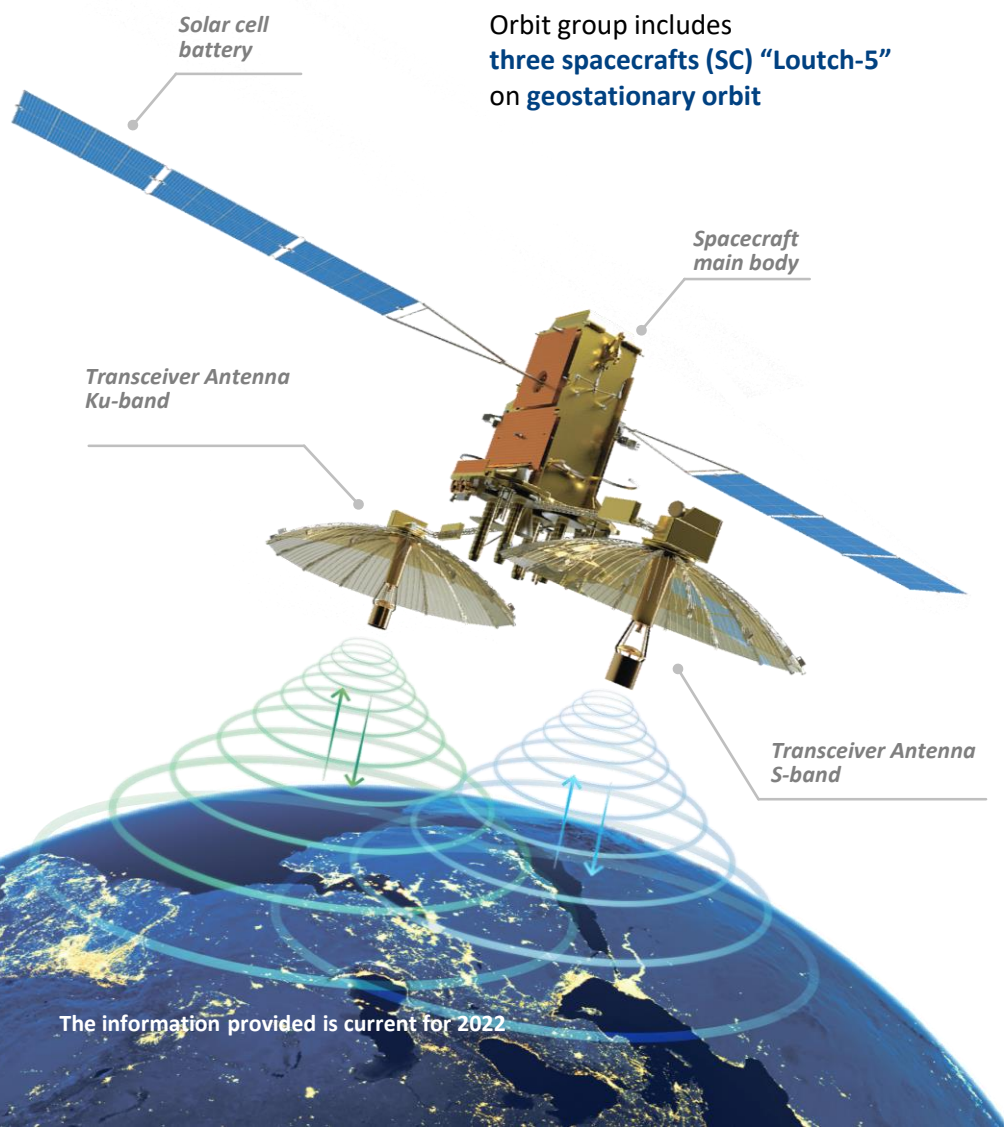
 GSM world coverage map

 World coverage map with “Gonets” and “Loutch” system services

ORBIT CONSTELLATION

“Loutch” system

Orbit group includes
three spacecraft (SC) “Loutch-5”
on geostationary orbit



Orbit height

36 000 km

Spacecraft mass

1 380 kg

Frequency bands

P, L, S, Ku

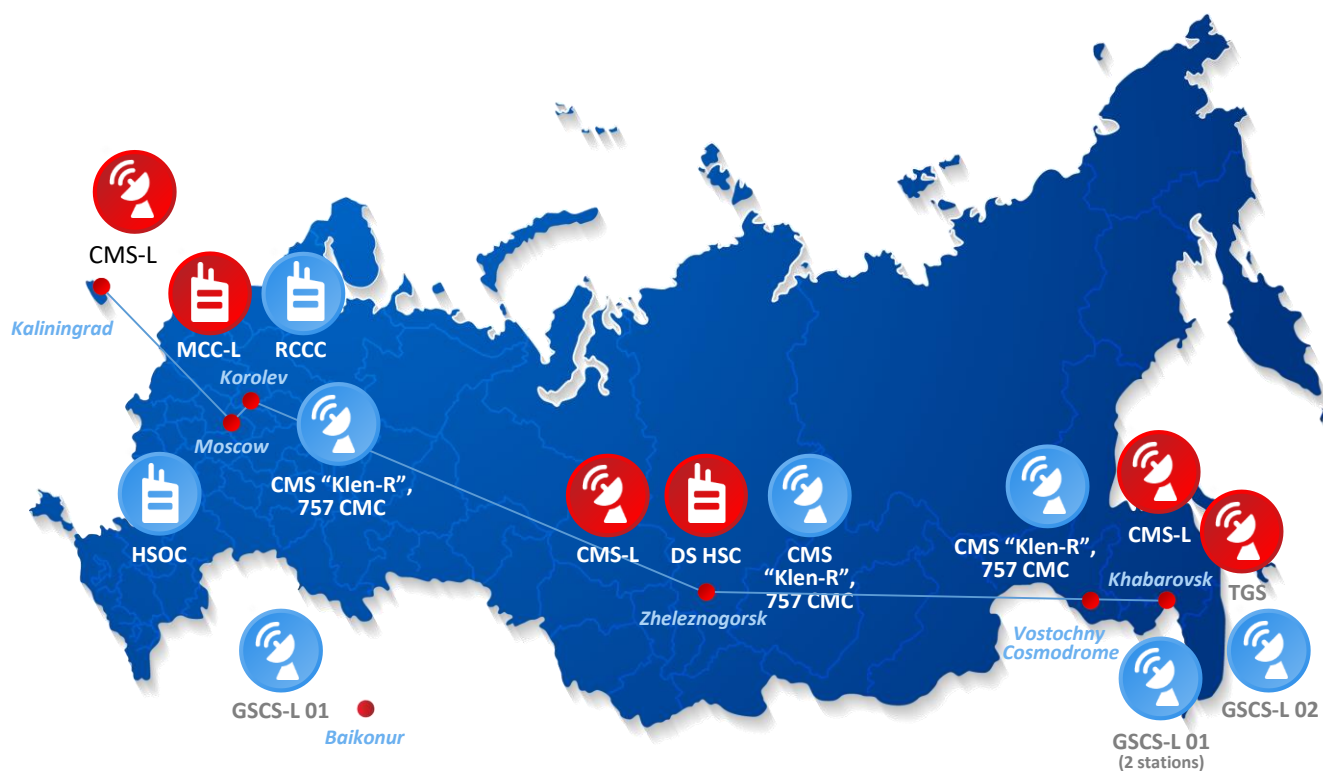
Guaranteed active shelf life

10 years

Launcher

"Proton-M" with upper
stage "Breeze-M"

EARTH SEGMENT of “Loutch” system



Ground relaying complex



provides **control, planning, using of MSRS tools, implementation of relay sessions and bringing the information received** to consumers and includes:

- Relaying & communication control center (RCCC)
- Hard & software operator complex (HSOC)
- Control & measurement retransmitting system (CMS "Klen-R")
- Ground satellite communication station (GSCS-L 01, GSCS-L 02)
- Control and measuring complex (757 CMC)
- Transportable ground station (TGS)

Ground control complex



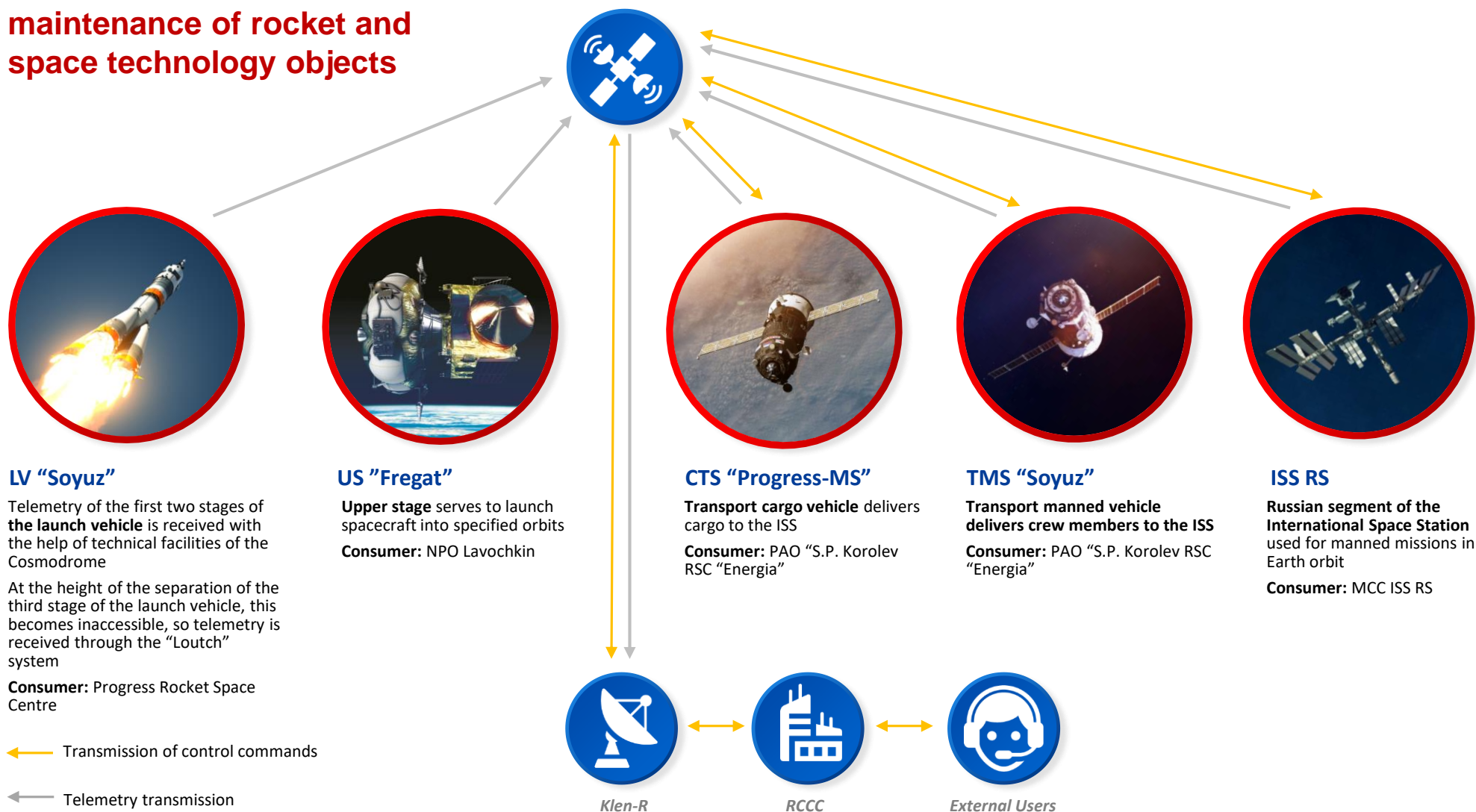
is designed to **control, continuously monitor and maintain** the specified technical and ballistic **characteristics of the orbital group** and includes:

- Mission control center (MCC-L)
- Control & measurement system (CMS-L)
- Debug stand of Hard & software complex (DS HSC)

“LOUTCH” SYSTEM SERVICES

maintenance of rocket and space technology objects

The “Loutch” system makes available broadband communication with the Russian segment of the ISS, including the transmission of large amounts of data






“LOUTCH” SYSTEM SERVICES

retransmission of meteorological information

The “Loutch” system transmits information from **670 data collection platforms** in Siberia and the Far East to regional stations of Roshydromet

Consumer: FSBI «Scientific Research Center of Space Hydrometeorology «Planeta»



-  SRDP — Stations for receiving data from platforms
-  DCP — Data collection platform
-  Data collection platform

“LOUTCH” SYSTEM SERVICES

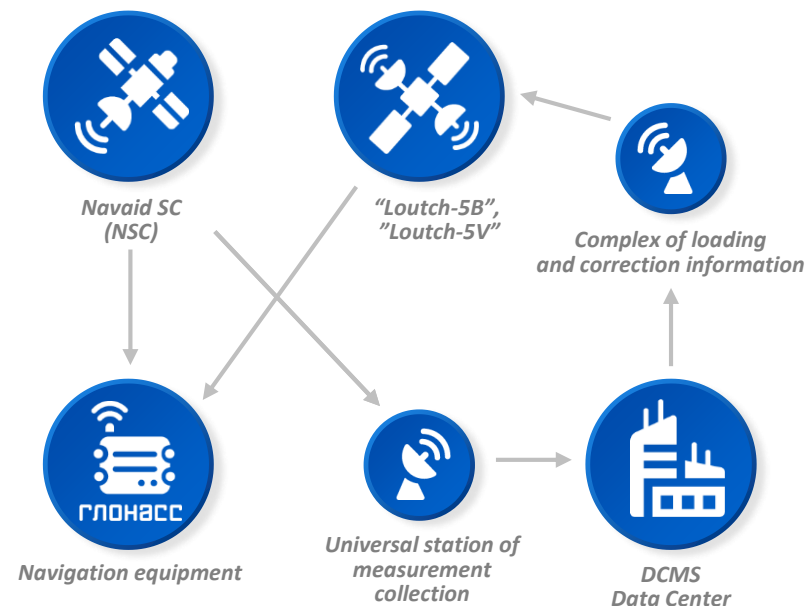
improving the accuracy of determination GLONASS and GPS coordinates

The “Loutch” system is a geostationary addition to the GLONASS system and a space segment of **differential correction and monitoring systems (DCMS)** navigational field*.

The implementation of the DCMS single-frequency scheme ensures the determination of coordinates with meter accuracy

Service consumers: aircraft and sea vessels, land transport and other users of GLONASS and GPS signals for whom **high accuracy and reliability of positioning is important.**

Consumer: navigation equipment users



* The navigation field is the field created by the orbital constellation of navigation spacecraft (NSC) to determine the current position of consumers on the ground surface. The user determines his location in the navigation field of GLONASS and GPS with an error of up to 3-4 meters.

The transmission of corrective information using the “Loutch” system allows to reduce the error in determining the coordinates to 1 meter.

“LOUTCH” SYSTEM SERVICES

data retransmission from Earth remote sensing spacecraft

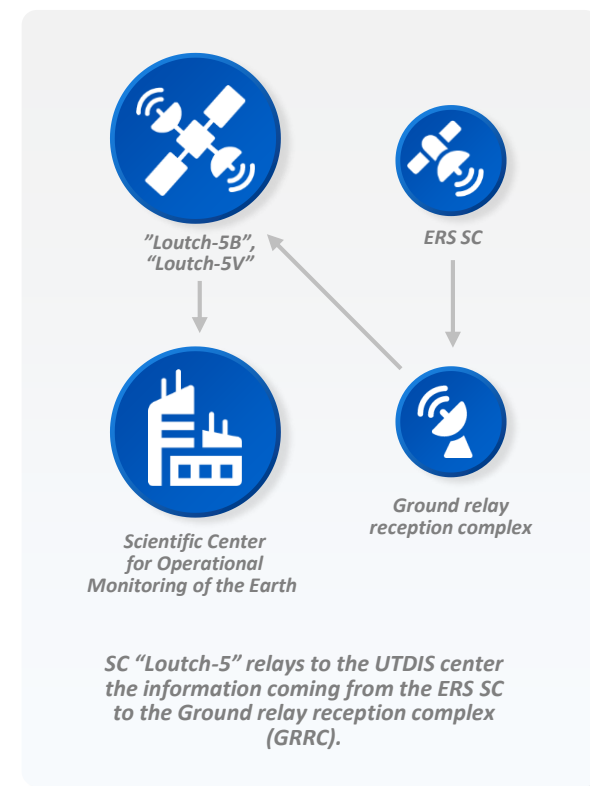
Consumer: Scientific Center for Operational Monitoring of the Earth (NTs OMZ) SC “RSS”



Ground relay reception complex (GRRC)

A unified territorially distributed information system (UTDIS) for Earth remote sensing (ERS) is formed by integrating all information resources of remote sensing in the country into a single geoinformation space

The use of GRRC as part of UTDIS ERS deployed in the city of Dudinka, the Antarctic station Progress and Cuba Island, as well as the planned deployment in the city of Anadyr, will significantly **increase the efficiency of providing ERS information** and information products based on it to a wide range of consumers.



“LOUTCH” SYSTEM SERVICES

Cospas-Sarsat Programme: the International satellite-aided search and rescue system

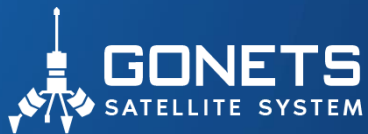
The “Loutch” system provides relaying of signals from emergency buoys within the framework of the international search and rescue system COSPAS-SARSAT. **The application is provided through the SC “Loutch-5A”.**

In the near future, it is also planned to use the COSPAS-SARSAT payload via the SC “Loutch-5V”.

The result of the system's activity is more than 50 thousand saved human lives

Consumer:
FSUE MORSVIAZSPUTNIK





Thank you for your attention!

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