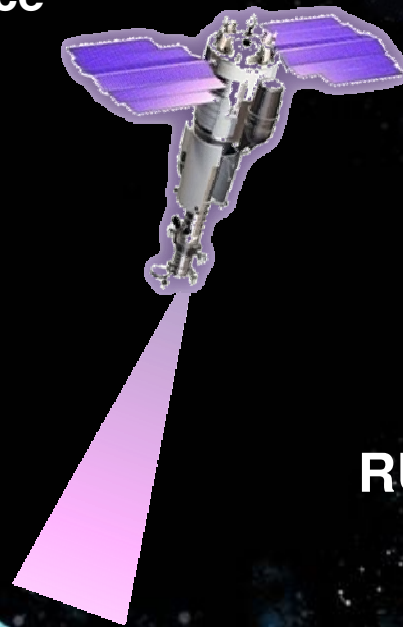




**An Operator of Russian Space
Systems of the Earth
Remote Sensing**



**RUSSIAN FEDERAL SPACE
AGENCY
(ROSCOSMOS)**





POCKOCMOC

Capabilities of Russian Orbital Constellation of Remote-sensing Systems in 2011-2012

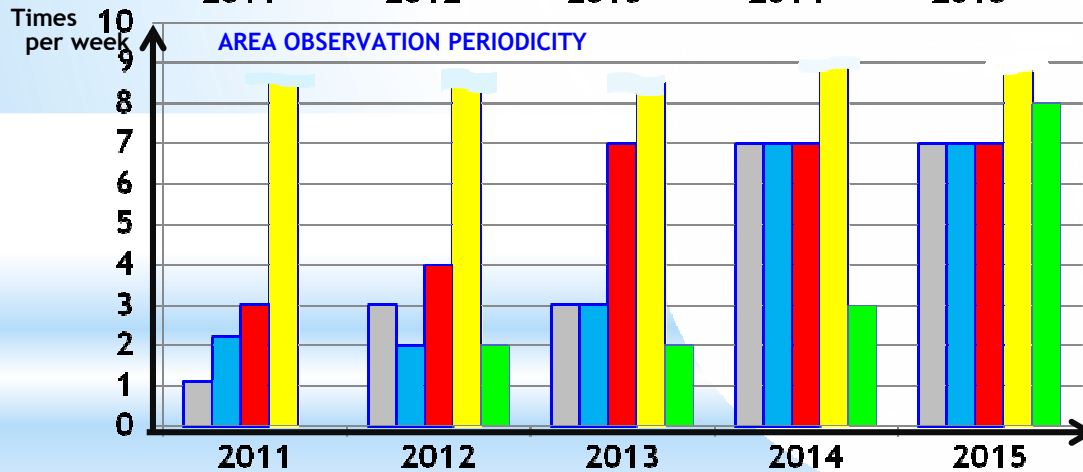
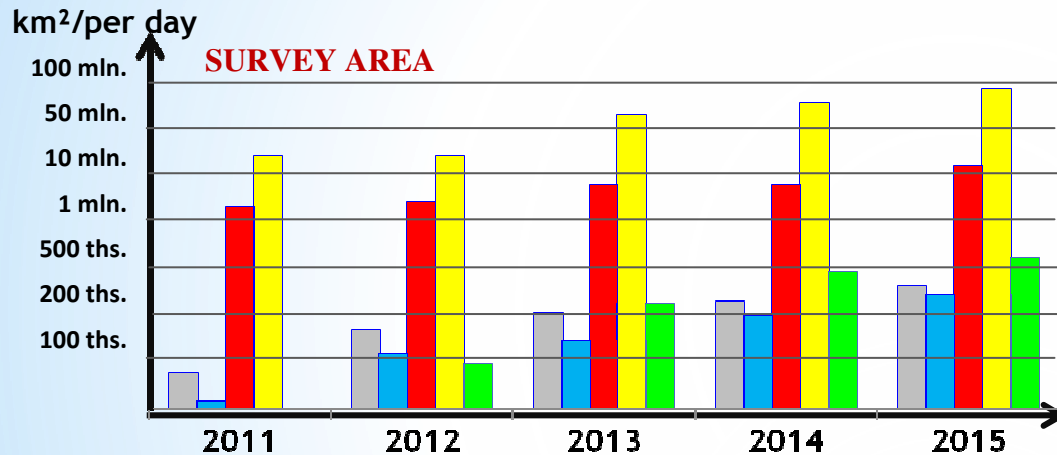


Type of spacecraft	Type of instrument	Linear resolution (meters)	Spectral bands (mkm)	Remote-sensing data acquisition
Resurs - DK	Optical-electronic: • panchromatic; • multi-zone	Up to 3 from 3,0 to 4,0	Panchromatic - 0,58 ÷ 0,8 Near IR - 0,7 ÷ 0,8	Up to 6 times per day, about 100.000 km ² each day
Meteor – M	Optical-electronic : • visible band; • infrared; •Multi-zone	1000 4000 60 and 120	0,5 ÷ 0,6 } (6 channels) 3,5 ÷ 12,5 } 0,370 ÷ 0,900 (6 channels)	2 times per day. Global Earth imaging during a day, up to 8 sessions. Russian territory imaging during 4 days
Electro - L	Optical-electronic: • multi-zone; • infrared.	1000 4000	0,5 ÷ 0,9 } (10 channels) 0,5 ÷ 12,5 }	Global imaging of Eastern hemisphere every 30 min.
Resurs – P	Optical-electronic: • panchromatic; • multi-zone; •hyperspectral	0,9, 12, 60, 24 ÷120 30	0,58 ÷ 0,80 0,45 ÷ 0,90 (5 channels) 0,40 ÷ 1,10 (up to 150 channels)	Up to 18 times per day, about 250.000 km ² each day
Kanopus – V	Optical-electronic: • panchromatic; • multi-zone	2,5 12,0	0,58 ÷ 0,86 0,46 ÷ 0,84 (4 channels)	Up to 18 times per day, about 100.000 km ² Each day
MKA FKI	Optical-electronic: • multi-zone; •hyperspectral	120 50	0,48 ÷ 0,95 (4 channels) 0,40 ÷ 1,10 (up to 150 channels)	Up to 4 times per day, each day 400.000 km ² 35 .000 km ²



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Growth Ability Dynamics of Russian Orbital ERS Satellites Constellation



	type of space surveying	spacecrafts	spatial resolution
	- panchromatic information of high and ultra-high resolution	Resurs-DK1 Resurs-P Canopus-V	to 5 m
	- multi-zone information of high resolution	Resurs-DK1 Resurs-P Canopus-V	5 – 50 m
	- multispectral and hyperspectral resolution	MKA-FKI Resurs-P Meteor-M (KMSS)	more than 50 m
	- multi-zone information of low resolution	Electro-L Meteor-M Meteor-MP	to 1000 m
	- radar information of high resolution	Kondor-E Meteor-M №3 Arkon-2M Meteor-MP	1- 20 m

Dynamics of Russian orbital remote-sensing spacecrafts' constellation growth abilities by types of survey, volume and periodicity of data acquisition beginning from 2011-2012 provides the possibility of primary usage of national remote-sensing spacecrafts for Russian consumers and its large delivery abroad



Russian Operator of ERS Space Systems - Research Center For Earth Operative Monitoring of JSC «Russian Space Systems»



Federal Space Agency exercises the following powers in the relevant sphere of activities:
organizes: in the use (operation) of space technology in order to implement the Federal space programme;
provides: works in the prescribed manner on creation, production and exploitation (application) of space complexes.

(By the Provisions of the Federal Space Agency (Government Decree dated July 30, 2007 № 490-24)

Research Center for Earth operative monitoring of JSC “Russian Space Systems” (NTs OMZ) is an operator of Russian space systems of remote-Sensing (by joint decision and order of Roscosmos, the Ministry of Russia and Roshydromet), the national operator of Russian ERS satellites (in cooperation with the Republic of Belarus) and information centre of the Federal Space Agency



NTs OMZ performs round-the-clock full technological cycle of tasks in planning, reception, registration, processing, archiving, storage and dissemination of information from Russian ERS satellites

Research Center for Earth operative monitoring of JSC “Russian Space Systems” is an organization specially created by Roscosmos in 1999 for the implementation of the Federal Space Agency’ functions for the exploitation of new Russian ERS satellites. *(From 2009 NTs OMZ is a part of the JSC “Russian Space Systems”)*



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Basic Directions of Activities of the ERS Satellites Operator



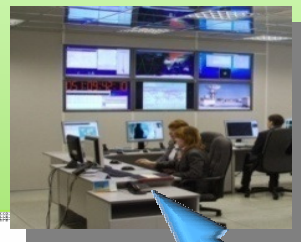
Operator of the ERS satellites

Complex planning and coordination of works on operation of the earth remote-sensing satellite constellation.

Validation of remote-sensing data.

Provision of remote-sensing data of to customers.

Provides the ERS satellites' air-trials



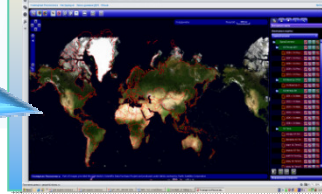
Earth Aerial Digital Imagery



Creation and administration of the ERS data archive



Roscosmos' Geoportal administration

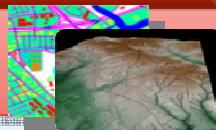


Roscosmos' Center of United nation-wide system of the information on conditions at world ocean

Research Center for Earth Operative Monitoring of JSC "Russian Space Systems"

Provides services the Earth Remote Sensing data thematic processing services

Creation and provision of Various information products



Distribution of data from the foreign ERS systems



Maintenance of participation of Roscosmos in the international Charter «Space and major disasters»



During the lifetime of the NTs OMZ its team consisting of 280 professionals (every tenth holds degrees) was formed and successfully works. Our personnel has experience in operating ERS satellites and providing successful implementation of all activities of the ERS satellites Operator.

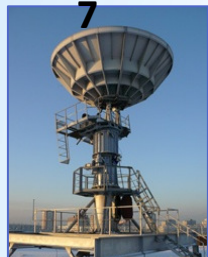


Means of Data Reception and Registration from Russian and Foreign Satellites



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PK-



PK-



PK-



PK-2.4



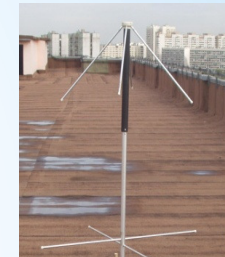
Meteocomplex



SKS-OMZ



SPI-137



PK-7 – reception of information from «Meteor-M», «Kanopus-V» satellites in X-diapason with left and right polarization at the speed up to 300 Mbyte/s
 PK-5 – reception of information from «Resurs-DK» and «Kanopus-V» satellites in X-diapason with left and right polarization at the speed up to 300 Mbyte/s and from «Meteor -M» satellite in L-diapason at the speed up to 3 Mbyte/s
 PK-3 - reception of information from в X-диапазоне с левой и правой поляризацией со скоростями до 300 Mbyte/s с КА «Resurs-DK», со скоростями до 60 Mbyte/s from «Kanopus-V», «Terra» satellites and in L-diapason at the speed up to 3 Mbyte/s from «Meteor» и «NOAA» satellites
 PK-2.4 - reception of information in X-diapason with left and right polarization at the speed up to 300 Mbyte/s and in L- diapason at the speed up to 3 Mbyte/s, provides reception from «Electro-L» satellite, there is a possibility to receive information form «Resurs» type satellites.
 SKS-OMZ – space communication station to work with «Electro-L» satellite, information transmission speed – up to 15 Mbyte/s, confirmed – up to 70 Mbyte/s
 SPI-137 – reception of information in R-diapason from NOAA satellite
 Meteocomplex – reception of meteorological information received from Roshydromet via geostationary «Express AM-33» satellite to provide meteorological data for tasking imagery planning for «Resurs-DK» satellite

ERS satellite operator can provide within 24 hours reception of data from spacecrafts' orbital constellation consisting of 30 satellites

Currently data reception and registration is organized from Russian (Resurs-DK, Meteor-M and Electro-L), and foreign (Terra, NOAA, Aqua) ERS satellites .

Starting in 2011, data will be received from «Kanopus-V», «Resurs-P» and MKA-FKI satellites.

Programme for the development of reception systems

2012 – PK-3.6

2013 – PK-5 (X and Ka) for satellites

2013 – PK-2.4M for «Electro-L» №2

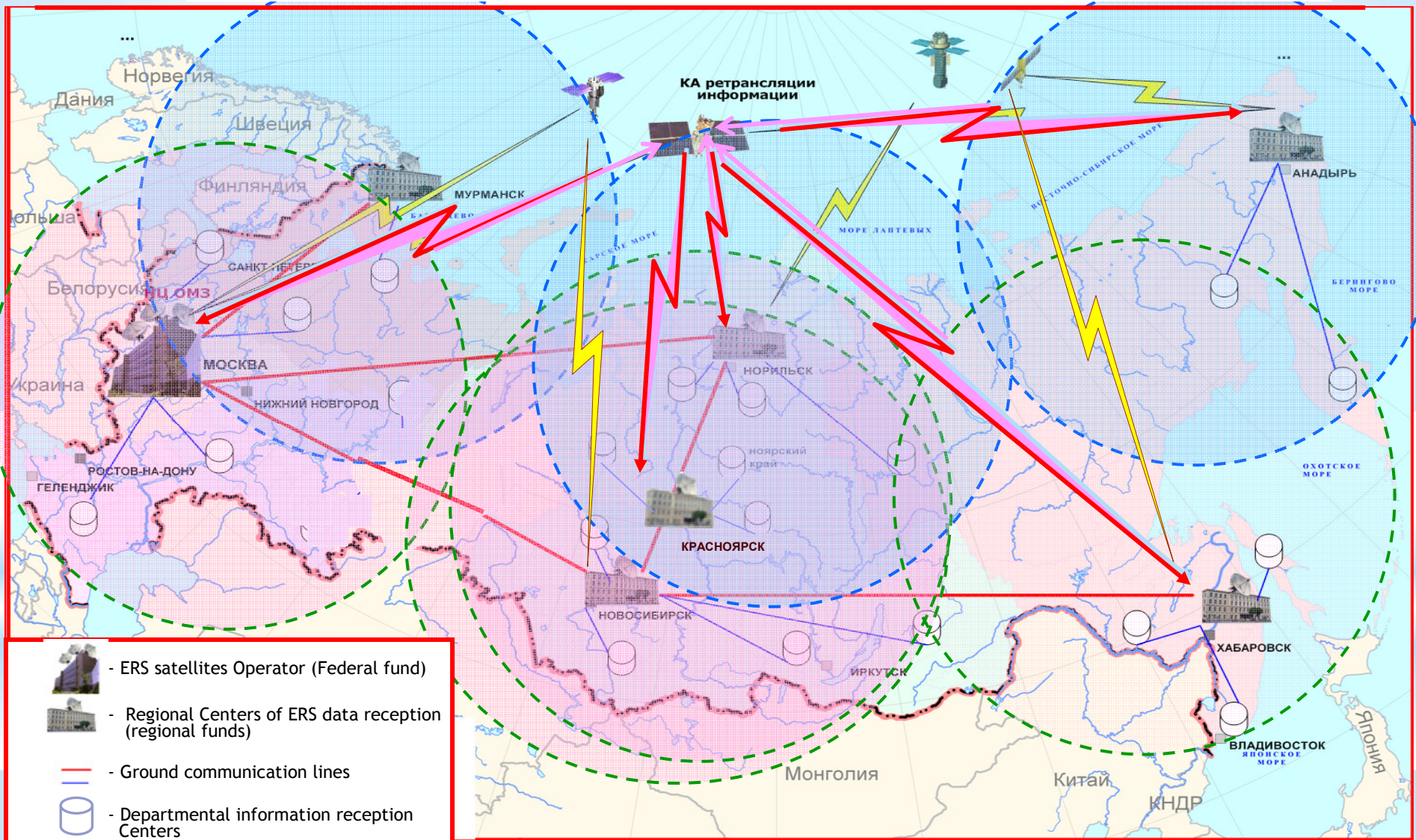
2013 – SKS-OMZ/2 for «Electro-L» №2

NTs OMZ is the only one of Russia's Federal Space Agency Centre, equipped with a complete set of technical means for receiving space data from all Russian and foreign ERS satellites and scientific satellites, unparalleled in other ministries and departments.

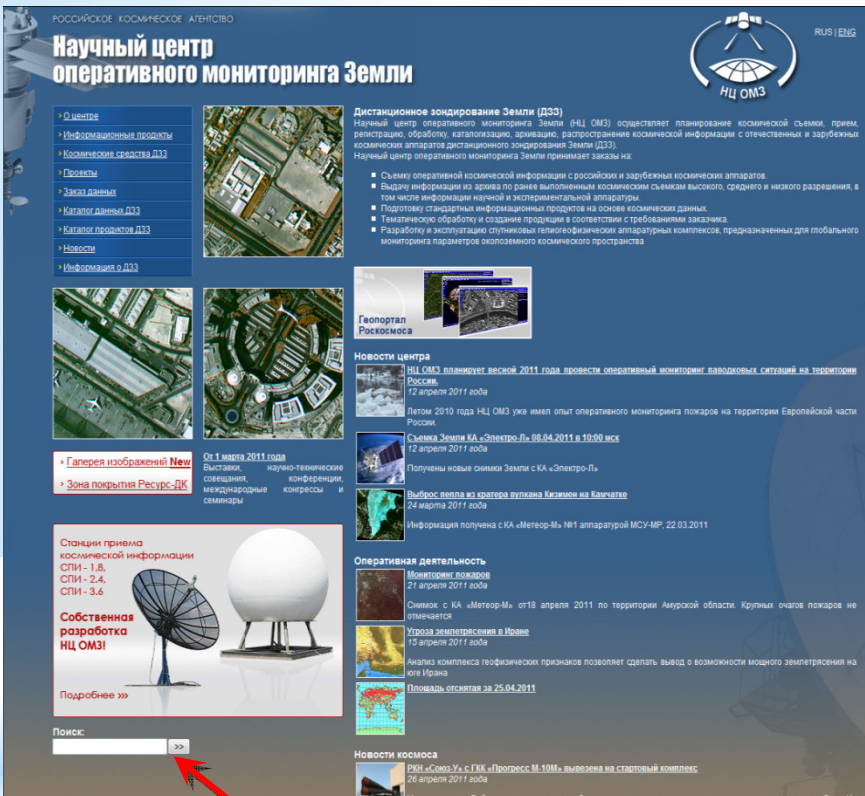


РОСКОСМОС

Ground Infrastructure of ERS Data Reception



Information services of remote-sensing spacecrafts' Operator for Russian and foreign users. Information system

РОССИЙСКОЕ КОСМИЧЕСКОЕ АГЕНТСТВО

Научный центр оперативного мониторинга Земли

Дистанционное зондирование Земли (ДЗЗ)

Научный центр оперативного мониторинга Земли (НЦ ОМЗ) осуществляет планирование космической съемки, прием, регистрацию, обработку, каталогизацию, архивацию, распространение космической информации с отечественных и зарубежных космических аппаратов дистанционного зондирования Земли (ДЗЗ).

Научный центр оперативного мониторинга Земли принимает заказы на:

- Съемку оперативной космической информации с российских и зарубежных космических аппаратов.
- Выдачу информации из архива по ранее выполненным космическим съемкам высокого, среднего и низкого разрешения, в том числе информации наведенной и дозиметрической аппаратурой.
- Подготовку стандартных информационных продуктов на основе космических данных.
- Тематическую обработку и создание продукции в соответствии с требованиями заказчика.
- Разработку и эксплуатацию спутниковых телеметрических аппаратурных комплексов, предназначенных для лобового мониторинга параметров дальнего космического пространства.

Геопортал Роскосмоса

Новости центра

Летом 2010 года НЦ ОМЗ уже имел опыт оперативного мониторинга пожаров на территории Европейской части России.

Съемка Земли КА «Зенит-Ль» 08.04.2011 в 10:30 мск

Получены новые снимки Земли с КА «Зенит-Ль»

Выбор пеллы из каталога пеллы Казимира на Камчатке

Информация получена с КА «Метеор-М» 181 аппаратурой МСУ-МР, 22.03.2011

Оперативная деятельность

Мониторинг пожаров

Снимок с КА «Метеор-М» от 18 апреля 2011 по территории Амурской области. Крупные очаги пожаров не отмечаются

Урады землетрясения в Иране

Анализ комплекса геофизических признаков позволяет сделать вывод о возможности мощного землетрясения на юге Ирана

Площадь охвата за 25.04.2011

Новости космоса

РНН «Союз-У» с ГМ «Прогресс М-50М» выведена на стартовый комплекс

26 апреля 2011 года

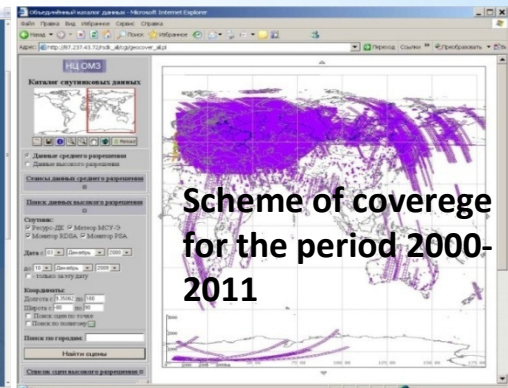
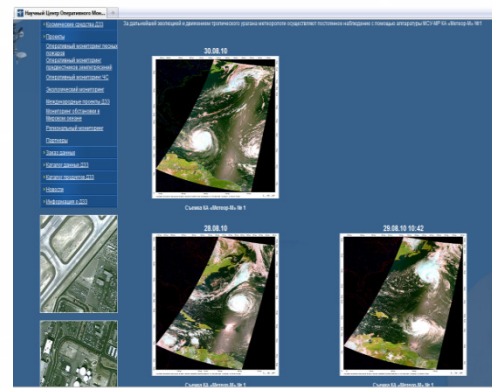
На космодроме Байконур проведены работы по подготовке к выводу ракеты космического назначения «Союз-У»

Станция приема космической информации СТИ - 1,6 СТИ - 2,4 СТИ - 3,6

Собственная разработка НЦ ОМЗ!

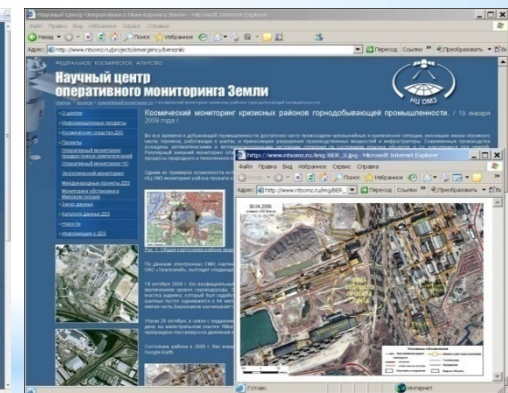
Подробнее >>>

Поиск:




Научный центр оперативного мониторинга Земли

Изображения, полученные с КА «Ресурс ДК1»



Научный центр оперативного мониторинга Земли

Космический мониторинг прибрежных районов горнодобывающей промышленности / 10 июля 2009 года

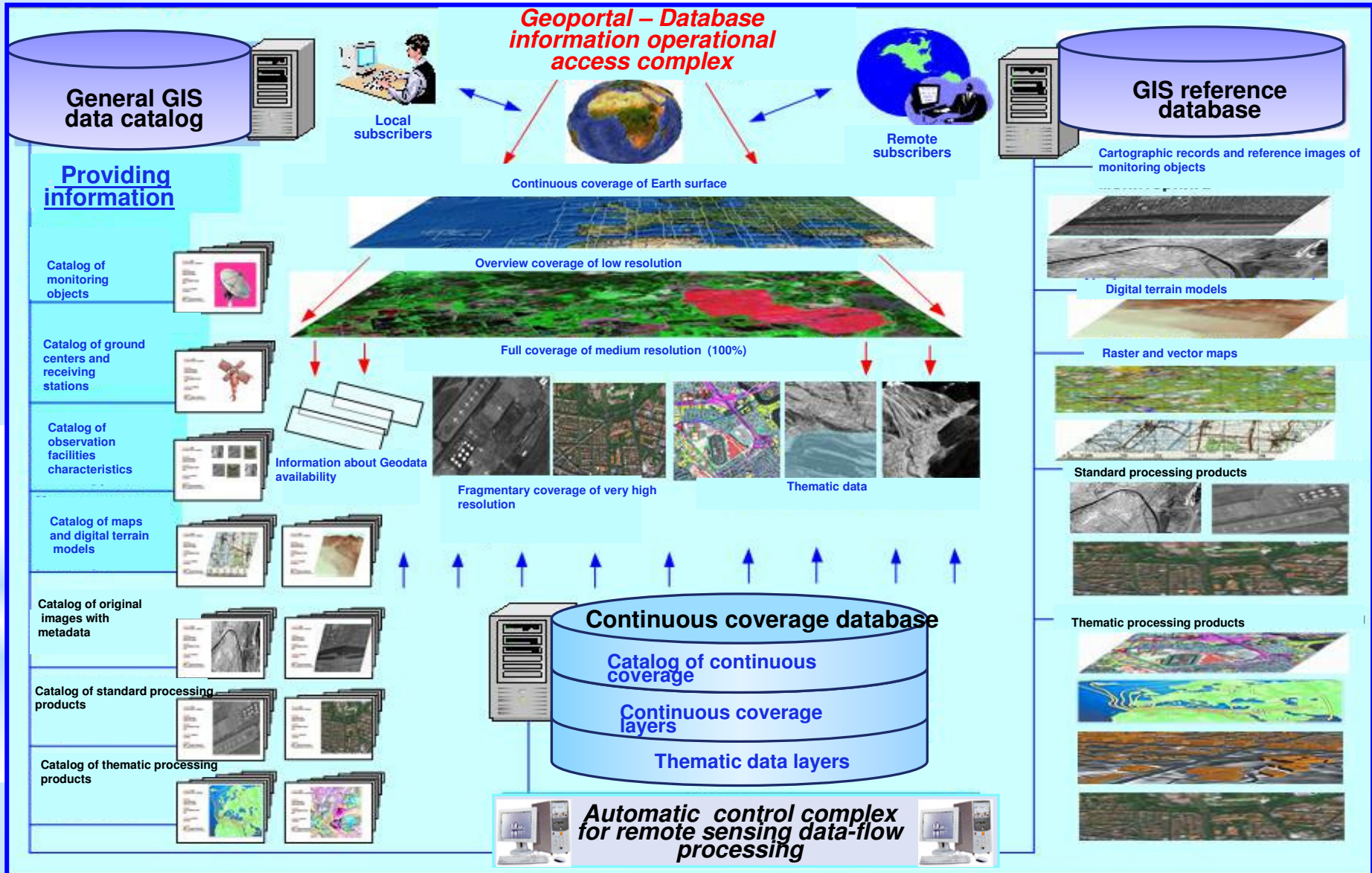
The main page of the remote-sensing spacecrafts' operator [WWW. NTSOMZ.ru](http://www.ntsomz.ru)

Information system provides information on the activities of remote sensing spacecrafts' Operator, orbital constellation, systems of space data receiving and processing, current activities, scientific research projects, services for space data ordering and receiving.



ПООКООМОО

Geo-information data bank





РОСКОСМОС



Information services. Roscosmos' Geoportal

Free access

- Metadata catalogue
- General catalogue of remote sensing data
- Continuous earth surface coating with space imagery data
- Provision of space information and thematic products on customers demands



Authorized access

- All features of free access to Geoportal
- Access to thematic data segments and special thematic products
- Very-high resolution data access

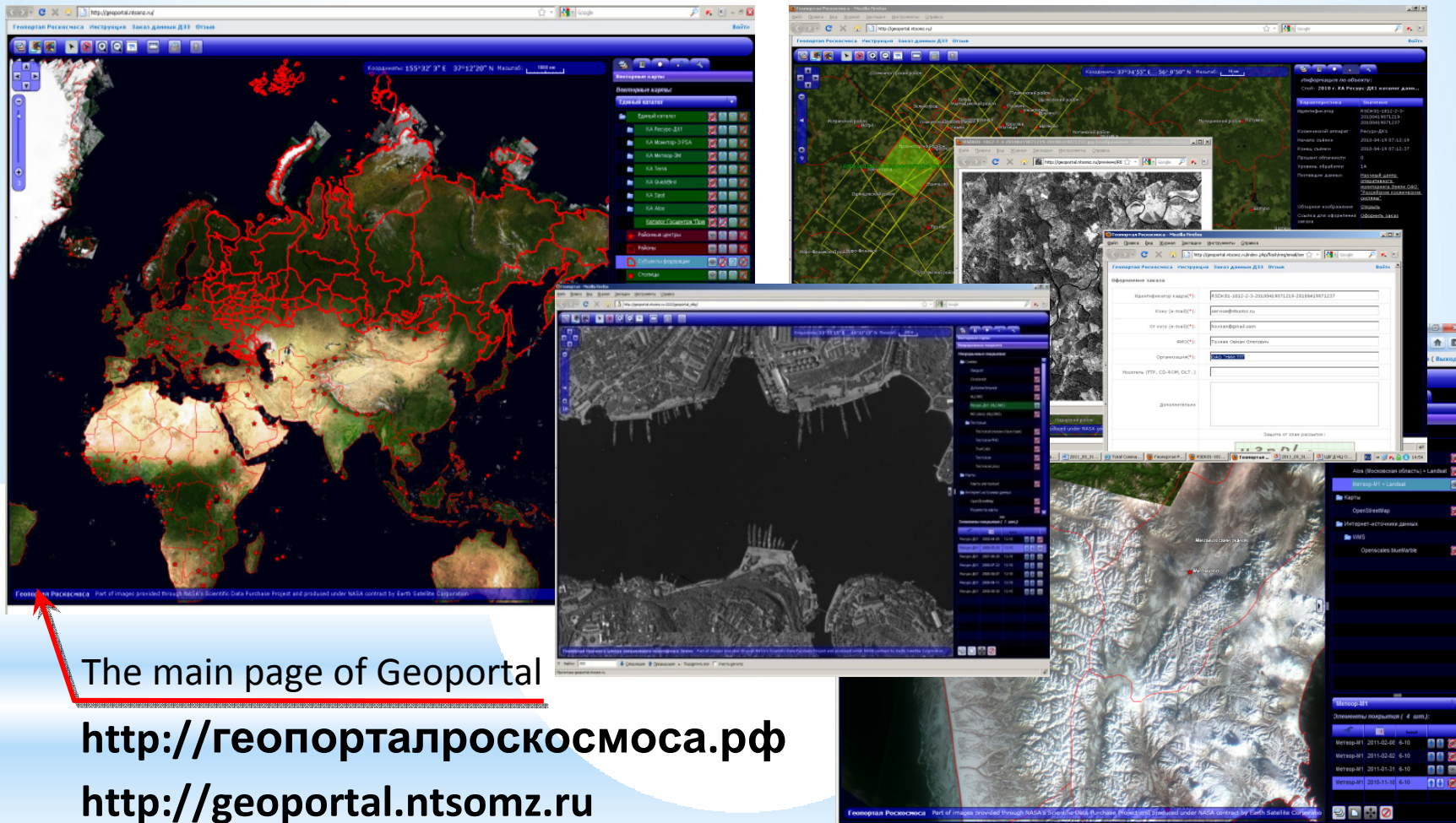


Launched in Dec 2010 Roskosmos' Geoportal provides free access to information via Internet for a wide range of users and additional opportunities for authorized users.



РОСКОСМОС

Information services. Roscosmos' Geoportal



The main page of Geoportal

<http://геопорталроскосмоса.рф>

<http://geoportal.ntsomz.ru>

Geoportal Roscosmos provides operative access, data search, satellites' characteristics, remote sensing data and products of its processing ordering, as well as the ability in monitor ground-based sites and facilities in time.



Thank you for attention!

Russian Federal Space Agency