

"FROM IMAGE TO DIGITAL REALITY: Earth Remote Sensing and Photogrammetry"

GLOBAL SPACE DATA IMPACT TO DIGITAL ECONOMICS

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Federal Law 431-Φ3 «On Geodesy, Cartography and Spatial Data…»

Statutory Provisions

Part 3 Article of Law 11:

«Conducting of Federal Spatial Data Asset is Executing on the Basics of Principles of Technological Unity at All Russian Federation Territories ...Spatial Data Interoperability with Information from Other State Owned Information Resources»

Part 3 Article of Law 20:

"Unified Electronic Cartographic Foundation...is the Systematic Assemblage of Spatial Data for Russian Federation Territory"

Part 2 Article of Law 20:

"To Support the Provision and Updating Information of Unified Electronic Cartographic Foundation ... Federal State Office Manage the Generation, Operation and Upgrading of State System on UECF Information Maintenance"

Part 4 Article of Law 16:

"State Topographic Maps and Plans are Developed by Using UECF Information"

Part 1 Article of Law 17:

"...Bodies of State Power and Bodies of Local Self-Government Establish Special Map Creation Including Digital Form. For Special Map Creation UECF Information is Used".

ORBITAL EARTH REMOTE SENSING GROUP



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LAND INFRASTRUCTURE DEVELOPMENT



"DIGITAL EARTH" PROJECT – NEW CONCEPT OF REMOTE SENSING FOR RUSSIA



PRODUCTS AND SERVICES INITIATION ON THE BASICS OF EARTH REMOTE SENSING



PROGRAMM "RUSSIAN FEDERATION DIGITAL ECONOMICS"



Basic Areas are:

Lawful Control, People and Education, Research Competence and Technical Backlogs Assembling, Information Infrastructure and Information Security.

General Aims Concerning Information Infrastructure include:

- Communication Nets Development to Support Economics Necessities in the Fields of Personal, Governmental and Business Data Gathering and Transmitting with a Glance on Digital Technology Technical Requirements;

- Russian System of Data Processing Centers Development which Provide Accessible, Steady, Secure and Economically Efficient Services for Government, Business and Citizens. Such Services Include Data Storage and Processing on the Particular Terms, and There is Allowing to Export Services on Data Storage and Processing;

- Digital Data Platform Implementation for Authorities, Business and Citizens Support;

- Generation of Effective Spatial Data System on Gathering, Storage, Processing and Providing which Can Provide State, Business and Citizens Needs with Actual, Reliable Information About Spatial Objects.

STREAM PROCESSING TECHNOLOGICAL FLOWCHART WHEN USING SOFTWARE "PHOTOMOD"



SOLID HIGH-RESOLUTION COVER

Seamless Solid High-Resolution Cover Characteristics:

- spatial resolution 0.5 2.5 m;
- coordinate determination -1 3 m.

"DIGITAL EARTH" PROJECT REMOTE SENSING DATA STRUCTURING

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	Resolution	Spectral Range (µm)	Solving Problems
Electro L	1 km	Multi-channel	 Weather Analysis and Forecasting:
Meteor	50 m	Green, Red and Near Infrared	 Land Temperature and Ocean Surface Test and Monitoring;
Resurs-P	12 m (pan) 24 m (ms)	Panchromatic, Blue, Green, Red, Near Infrared	 Oil, Gas, Hard Minerals, groundwater Prospecting Work.
Canopus-B Canopus-B-IR	2.7 m 2,1 m (10,5 m)	Panchromatic, Infrared, Blue, Green, Red	 Oil, Gas, Hard Minerals Prospecting Work; Topographic Map Making
Resurs-P (ms)	2.7 m (ms)	Blue, Green, Red, Infrared	 and Updating; Industrial Project Accident Fault Assessment;
Resurs-P (pan)	. 0.71 m (pan)	Panchromatic	 Project Construction and Functioning Monitoring;
Canopus-B-M Resurs - PM	0,40 m (pan)	Panchromatic, Blue, Green, Red, Infrared	 Illegal Utilization, Unauthorized Domestic Waste Matter Operation, Soil Pollution Identification.
Airphotos	0.15 m	Panchromatic, Blue, Green, Red	 City Limits Land Cadastre; Large Scale Topographic Map Making and Updating.
UAVs States and States	0.05 m	Panchromatic, Blue, Green, Red	



3D - Terrain Model created by Drone Surveying Data being Obtained in Automatic Mode 11

Data accuracy (1 - 3 m) Corresponds to Spatial Resolution

Space Surveying Data and Drone Surveying Data Partnering

Data Accuracy Is not Less 1 – 3 m

GLOBAL DATA STORAGE AND IMPLEMENTATION ORGANIZATION



SEAMLESS SOLID HIGH-RESOLUTION COVER IMPLEMENTATION FOR RUSSIAN FEDERATION SOCIAL ECONOMICAL MATURITY PROBLEM DECISIONS





PROGRAMME "RUSSIAN FEDERATION DIGITAL ECONOMICS" AS THE PROBLEM DECISION TECHNOLOGY FOR COMFORTABLE AND SECURE PEOPLE LIVING



COMFORTABLE AND SECURE PEOPLE LIVING AT TERRITORY MODELLING



Domestic Space Imaging Russian Federation Arctic Zone Cover by RESURS-F Series Satellite (1974-1999)



Scale 1:25 000 000

Modern Space Survey of Russian Federation Arctic Zone by Domestic and Foreign Facilities



Scale 1:25 000 000

Russian Federation Artic Zone Geographical Demarcation by Favourability Level of Natural Conditions for Inhabitants Living



Scale 1:25 000 000

	Территория	Состав территории (субъекты, районы, городские округа (ГО))	t° января	Влажность	Скорость ветра	Природная зона	Заболочен- ность	Мерзлота
1	Абсолютно непригодные для проживания территории							
1.1	Полное отсутствие населения	Архангельская область: Земля Франца Иосифа, ГО Новая Земля и др. о-ва; Красноярский край: Северная Земля и др. о-ва; Республика Саха (Якутия): Новосибирские о-ва, Медвежьи о-ва	ниже – 20 °С	выше 80%	до 30 и более м/с	Полярная пустыня и арктическая тундра	-	-
1.2	Крайне малая численность прожи- вающего населения	ЯНАО: Ямальский и Тазовский районы (частично); Красноярский край: Таймырский Долгано-Ненецкий район (частично); Республика Саха (Якутия): Булунский, Аллаиховский и Нижнеколымский районы; Чукотский АО: Билибинский район (частично), ГО Певек (частично), ГО Эквекинот (частично), Чукот- ский район (частично)	ниже—30°С	выше 80%	до 10 м/ c	Арктическая тундра	Районы ЯНАО и Красноярского края	Районы Республики Саха (Якутии) и Чукотского АО
2	Экстремально неблагоприятная территория							
		ЯНАО: Ямальский (частично), Тазовский (частично) районы;	Проинтинострои				ЯНАО — вы-	

Ecological Safety Support for People at Russian Federation Arctic Territory



Mining Operation Acre Violations



Scale 1:25 000 000

Industrial Structure





Scale 1:25 000 000



Scale 1:16 000 000

Agriculture



Scale 1:25 000 000



HIGHWAY DESCRIPTION BY OBJECT-ORIENTED MODEL



INTEGRATED GEOSPATIAL AREA CONDITIONING



THANK YOU FOR ATTENTION!