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# Images from Space Directly to School Computer

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co-founder, Deputy General Director

Seoul, the Republic of Korea  
October 29, 2019



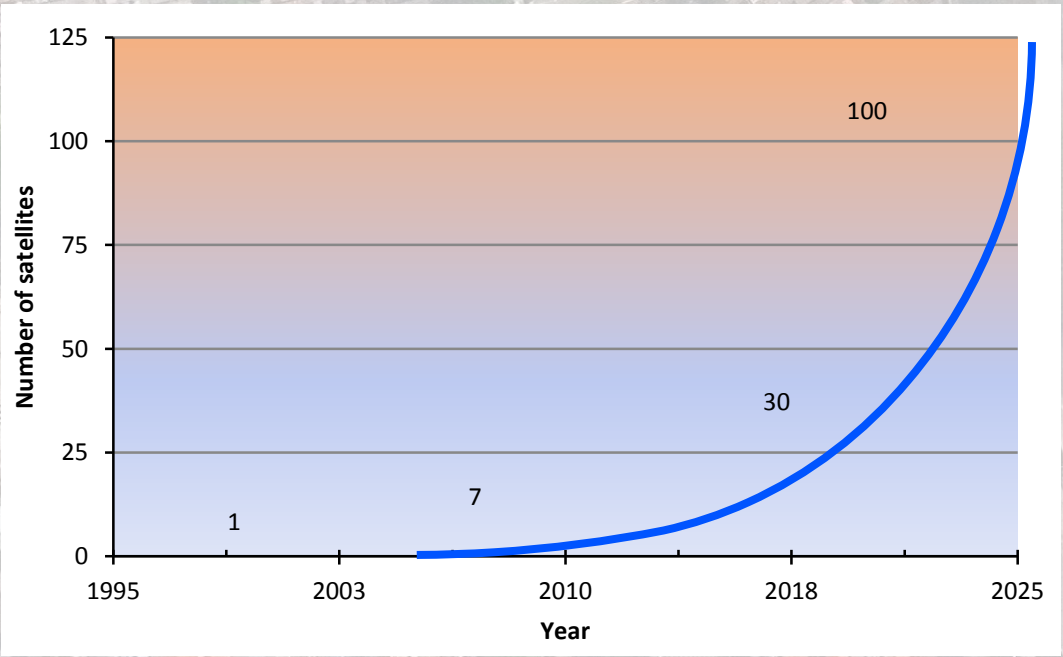


1. The most important problem – **competition between companies – owners of satellites.**
2. Increasing number of satellites with VHR.
3. Increasing number of companies in area of Business Intelligence.
4. Lack of data with Zero Latency delivery.
5. Open (copyright free) images from Space are usually “old” and therefore cannot help to act in Real Time.
6. Lack of opportunities to use Earth observation data and GIS technologies in school education and career guidance



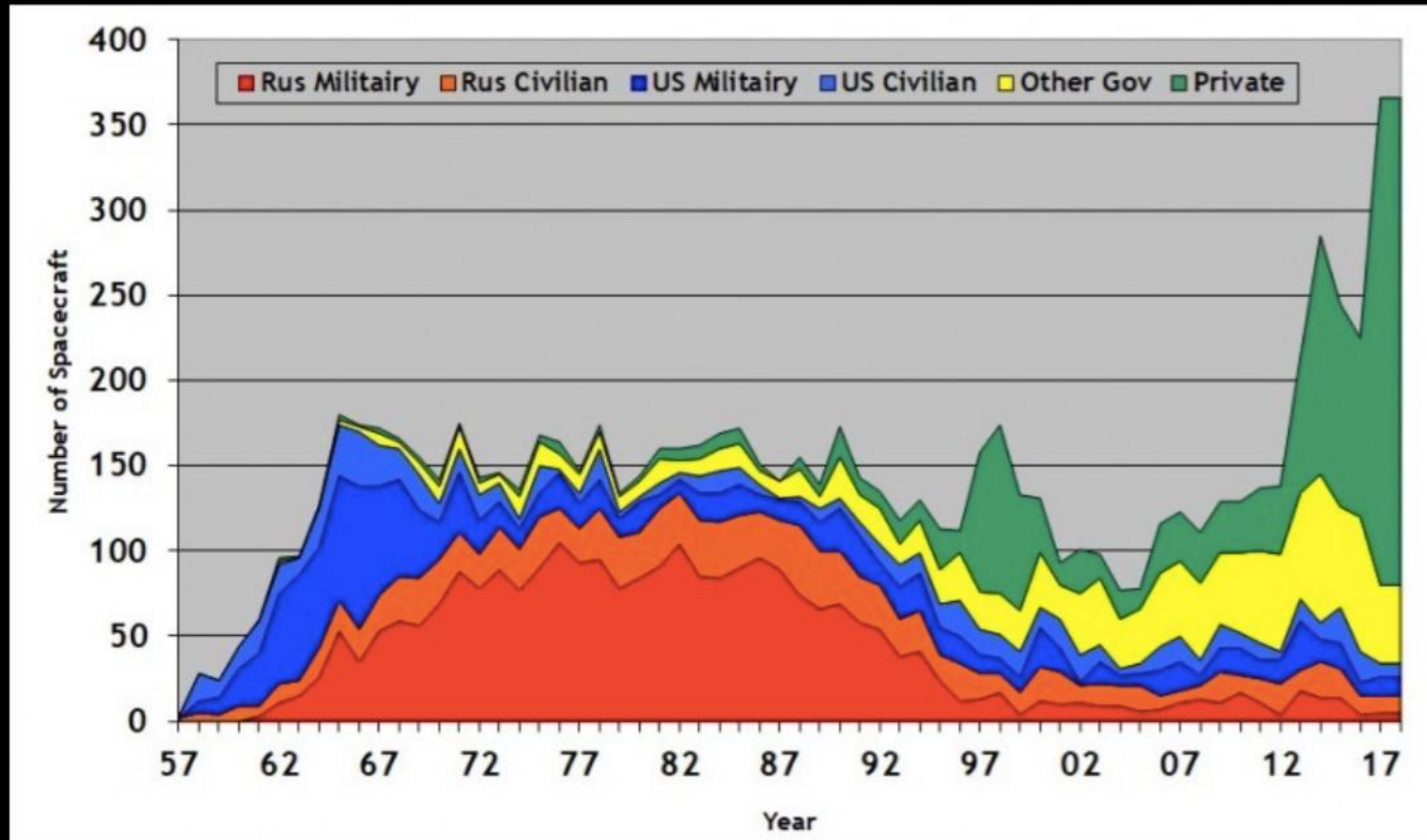


# SATELLITES WITH VHR: THE DEVELOPMENT TREND



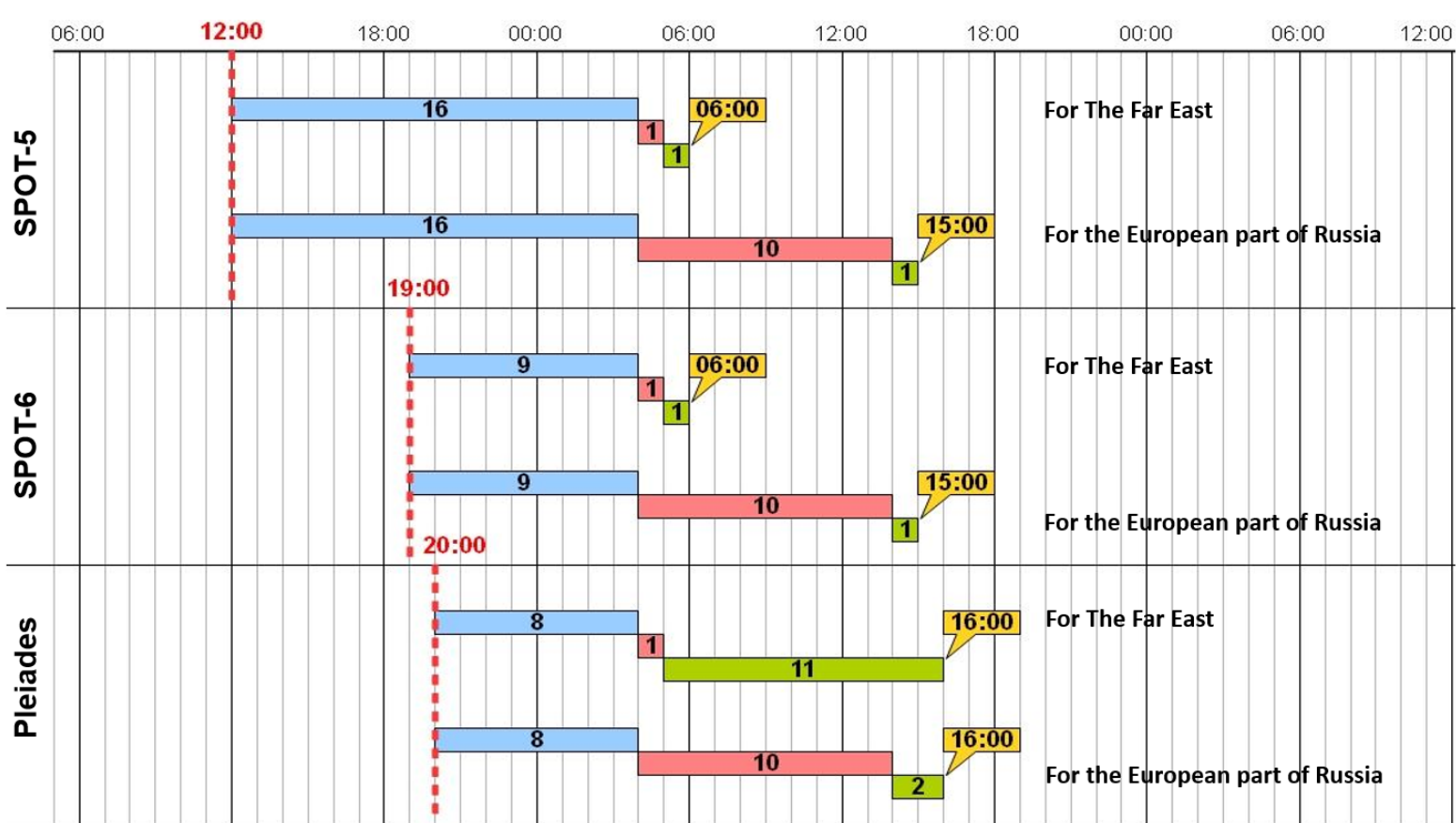


# Number of Spacecraft Launched, 1957-2017



Source: <http://claudelafleur.qc.ca>

# Our experience, optical data delivery time in Emergency request

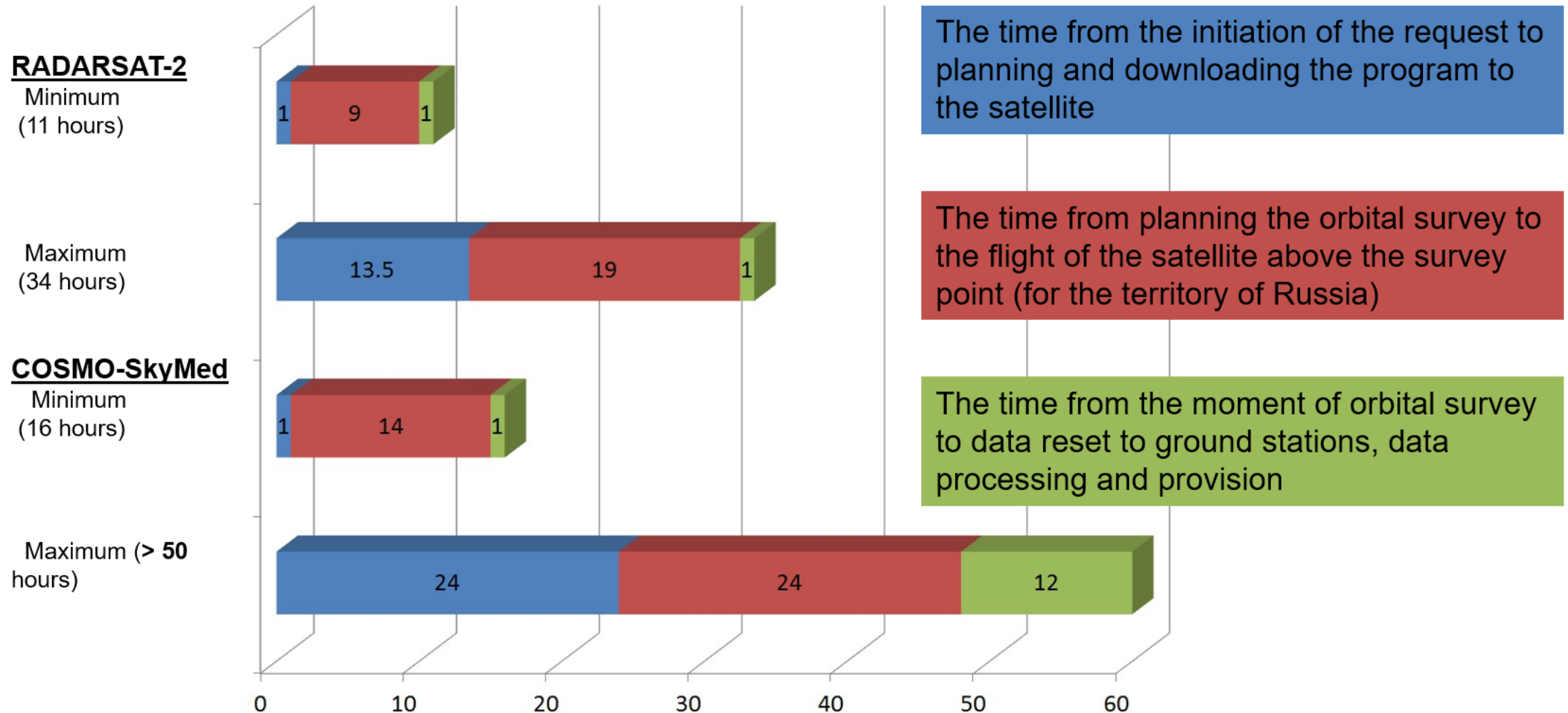


12:00



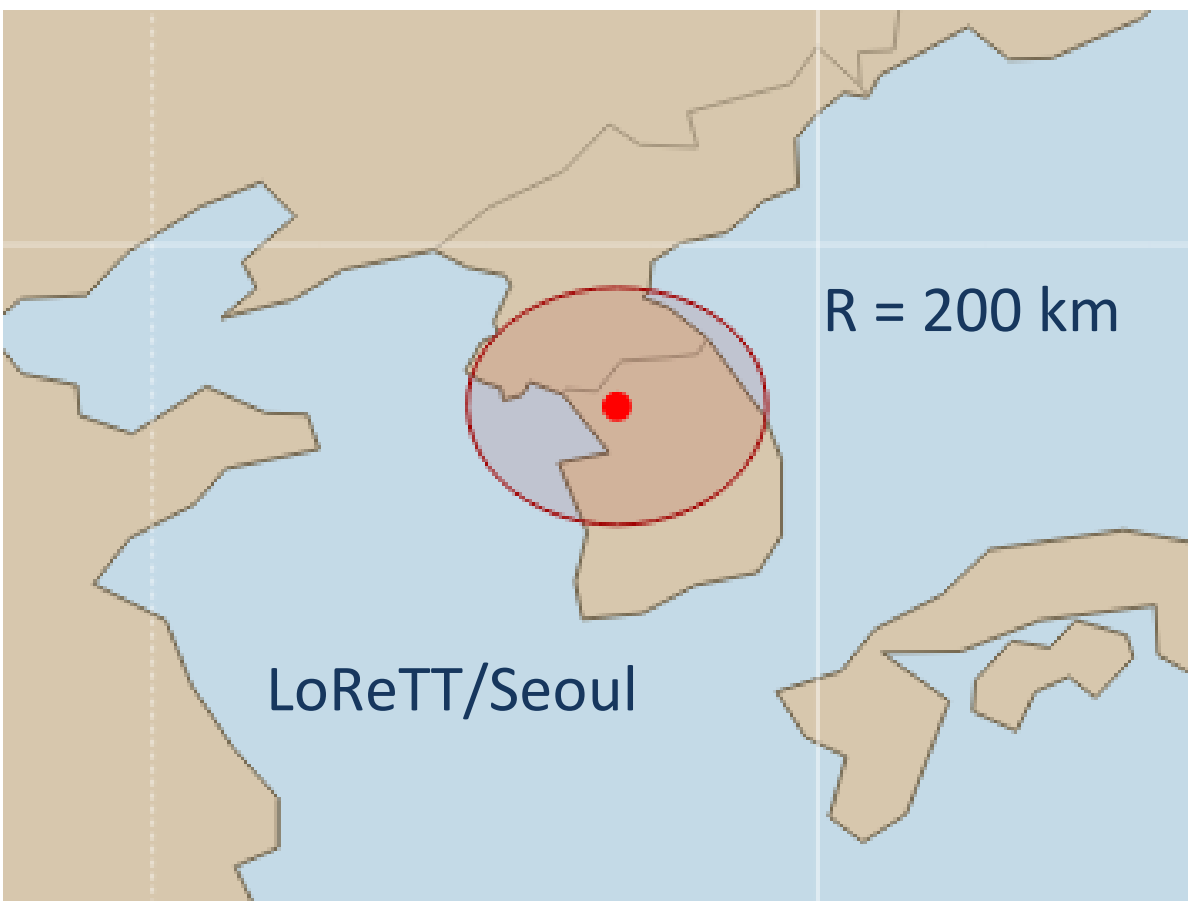
- **Application deadlines.**
- **The period of time from including the application in the survey plan to the first possible orbital survey (for the territory of the Russian Federation).**
- **The period from the moment of orbital survey to the discharge to the ground stations, processing and provision of data.**
- **The period of possible orbital survey (for different regions of Russia).**
- **Approximate time of delivery satellite images and processing results.**

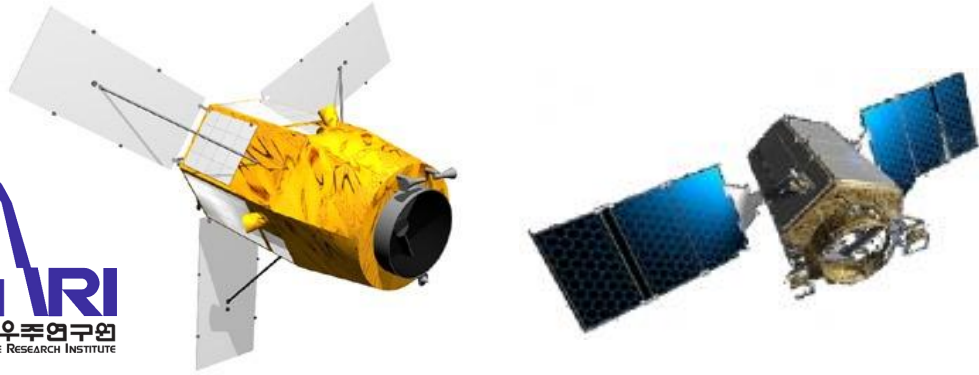
# Our experience, radar data delivery time in Emergency request





KANOPUS-V 4	2019-10-28 02:34:57	02:35:33	88.1
KANOPUS-V 6	2019-10-28 15:23:23	15:23:55	82.8
KANOPUS-V 5	2019-10-29 02:36:15	02:36:49	85.4
KANOPUS-V 4	2019-10-29 15:24:08	15:24:40	83.4
KANOPUS-V 3	2019-10-30 02:39:10	02:39:36	79.2
KANOPUS-V 5	2019-10-30 15:25:30	15:25:50	77.2

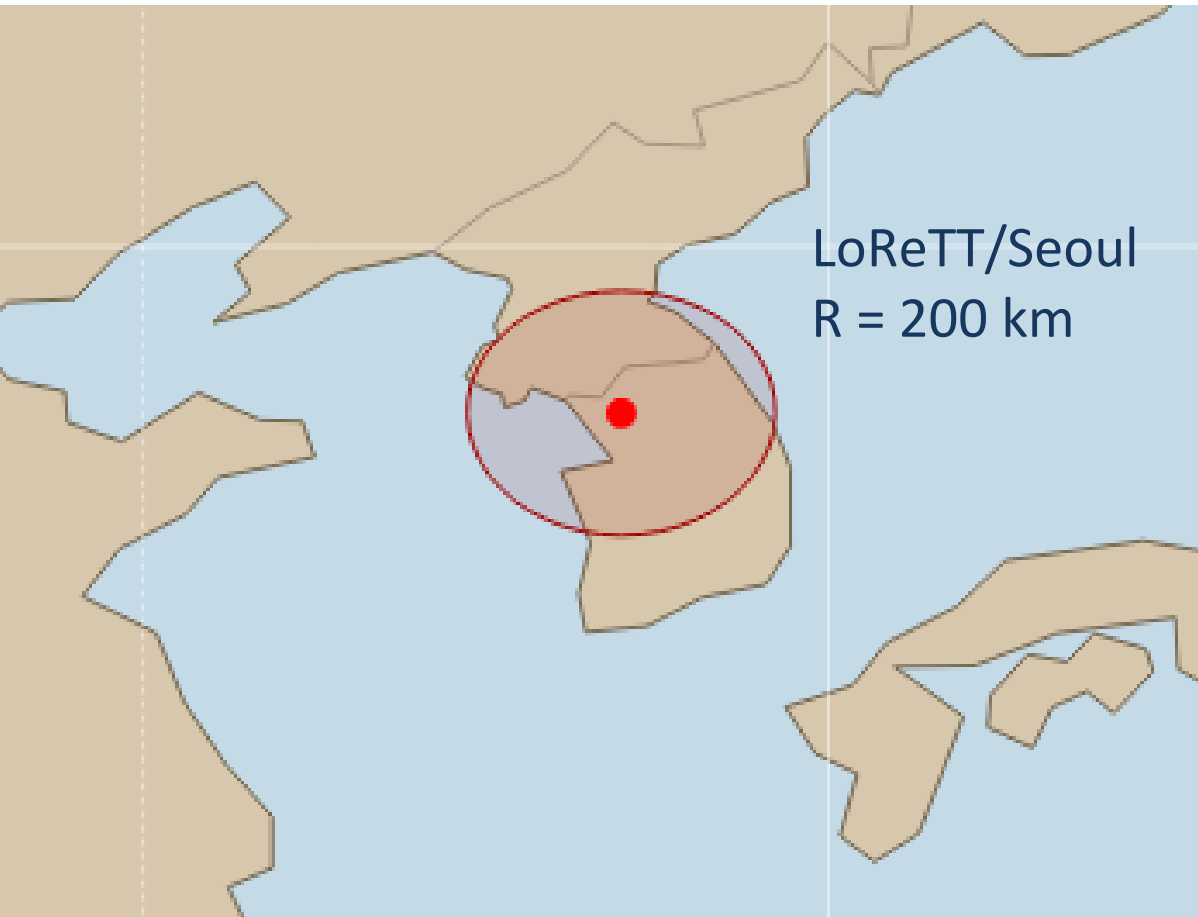




## High resolution (1 m and better):

NUSAT-3 (MILANESAT)	2019-10-28 12:22:31 12:23:07 82.1
NUSAT-1 (FRESCO)	2019-10-28 14:34:12 14:34:46 85.1
ARIRANG-3 (KOMPSAT-3)	2019-10-28 17:20:05 17:20:53 86.1
DMC3-FM2	2019-10-29 01:39:09 01:39:53 83.8
KAZEOSAT 1	2019-10-29 02:34:40 02:35:32 85.4
NUSAT-3 (MILANESAT)	2019-10-29 12:11:56 12:12:32 83.0
KAZEOSAT 1	2019-10-29 13:45:11 13:45:59 81.6
ARIRANG-2 (KOMPSAT-2)	2019-10-29 14:16:20 14:16:52 78.1
DMC3-FM1	2019-10-29 14:36:26 14:36:54 77.3
ARIRANG-2 (KOMPSAT-2)	2019-10-30 01:17:32 01:18:18 83.5
NUSAT-3 (MILANESAT)	2019-10-30 07:00:01 07:00:39 84.7
DMC3-FM3	2019-10-30 14:31:03 14:31:45 83.8
KAZEOSAT 2	2019-10-30 14:44:04 14:44:48 84.0
NUSAT-4 (ADA)	2019-10-30 17:08:36 17:09:04 79.5

VC







LoReTT –  
Local Real Time Tool





# We are creating demand

01

The creating of demand through exiting projects

02

First commercial delivery

03

Looking for strong partnership with satellites owners







Creating  
of demand  
through exiting  
projects

# Pilot projects in schools



# Sealpups-2018/19 Project

Goal: organization of the operational headquarters in order to prevent the death of sealpups during icebreaking in the White Sea

## Staff Algorithm

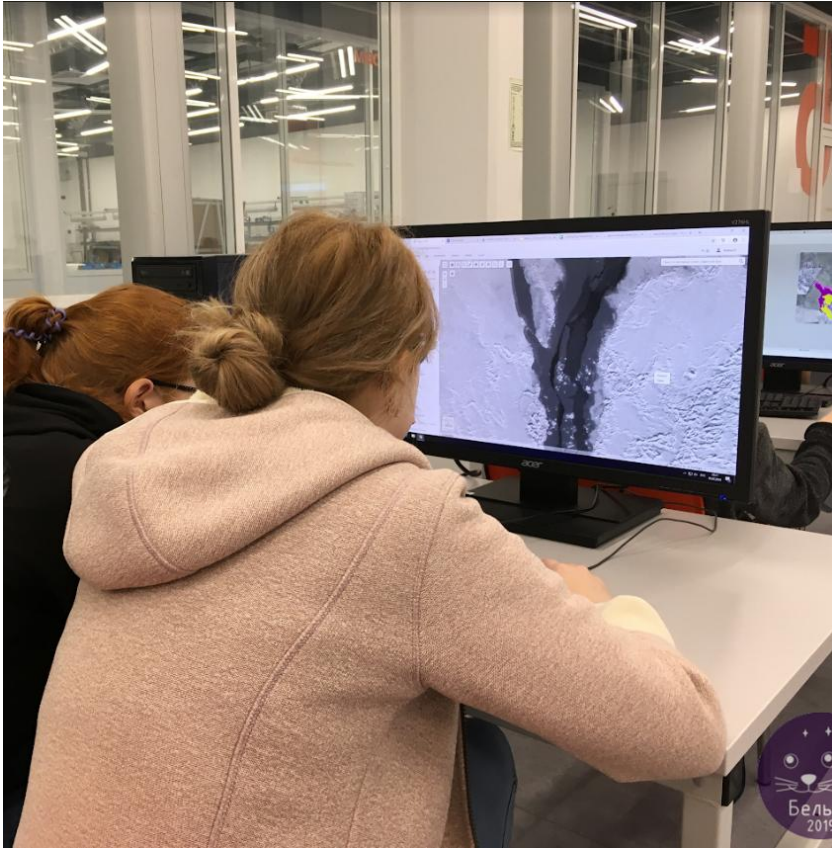
1. Satellite images reception
2. Satellite images processing and analysis
3. Find harp seals whelping grounds
4. Predict the movement of ice
5. Notify the ports' administration
6. Reporting



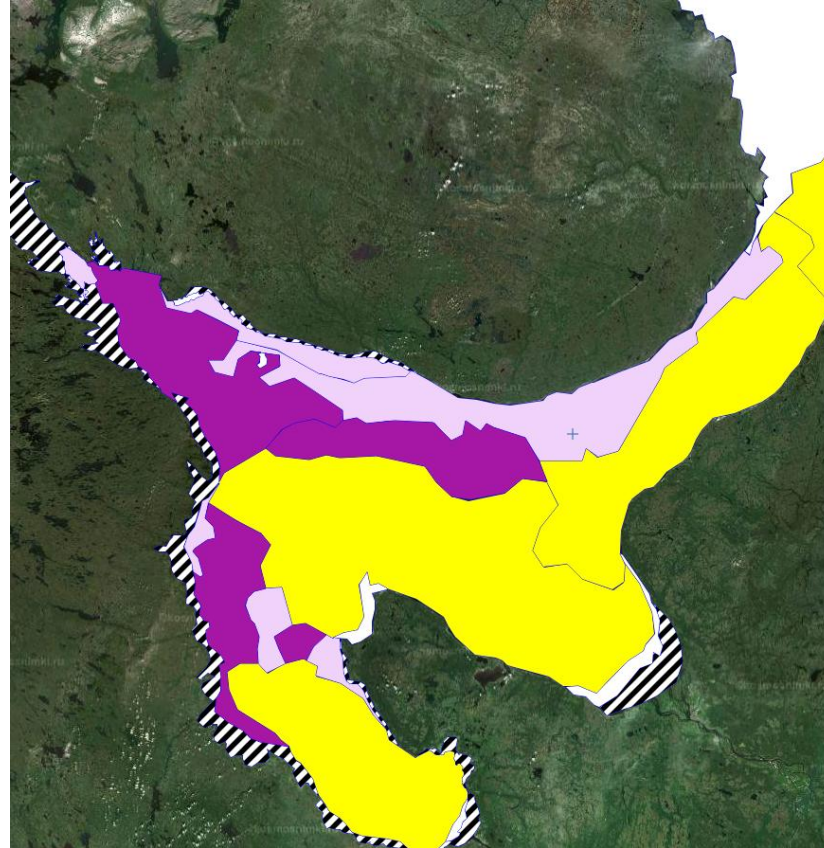




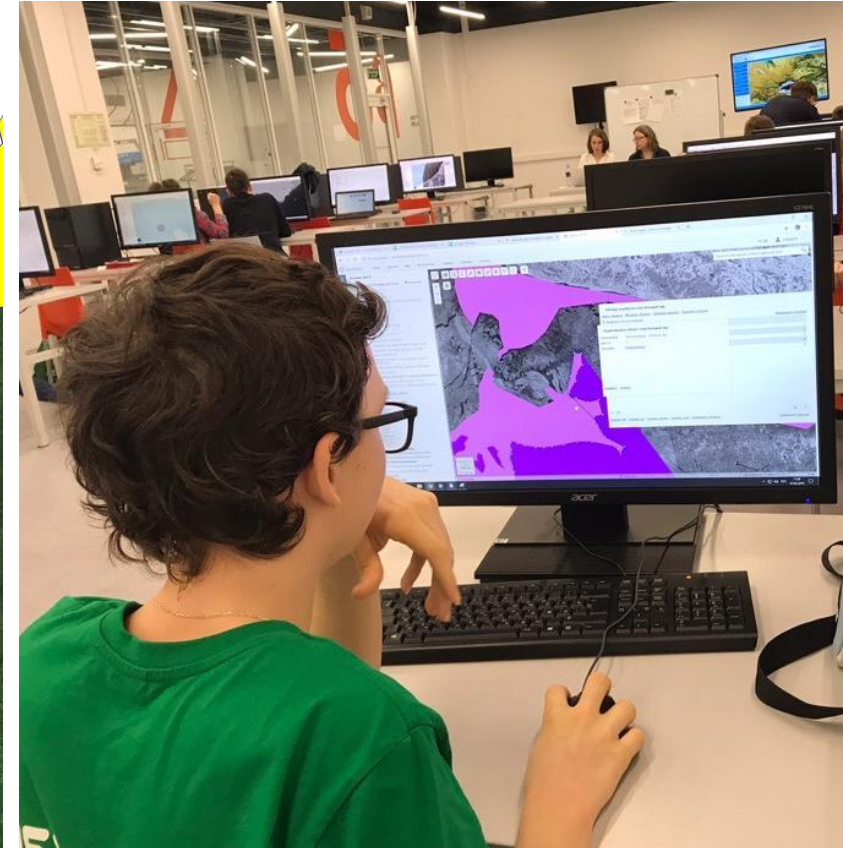
# Image Processing & Analysis



Monitoring



Ice mapping

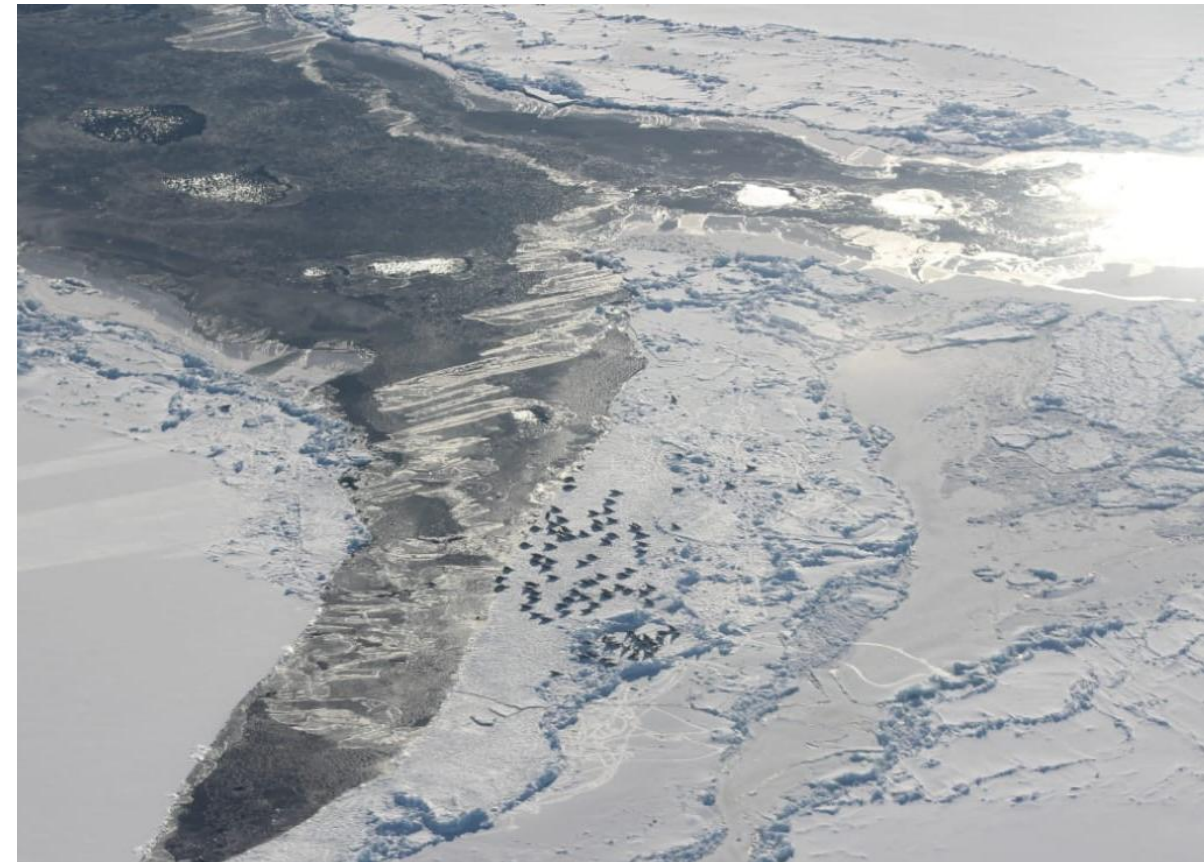
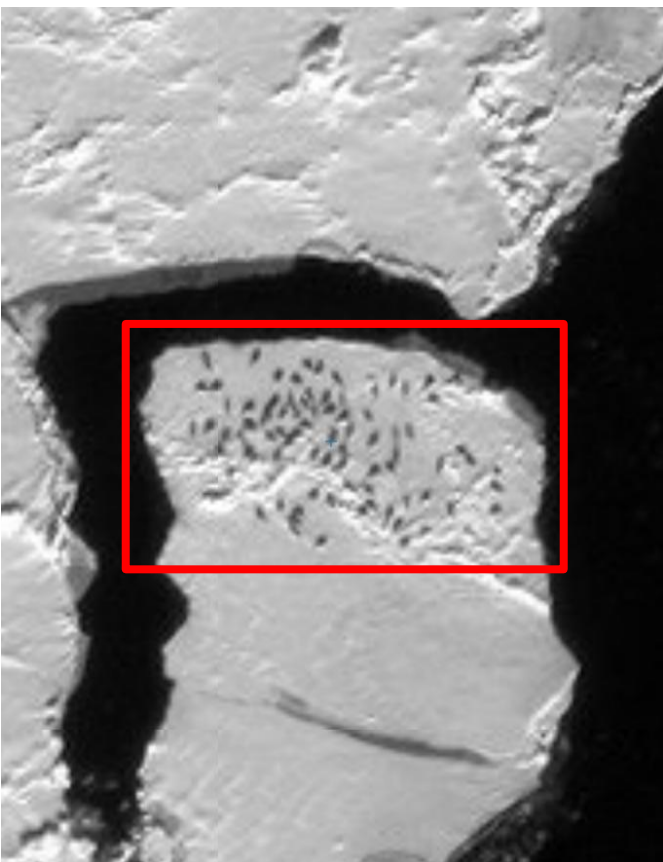


Reports





# Search for whelping grounds



GeoEye-1 2019-03-03 ©DigitalGlobe, 2019

2019-03-06: Andrey Solovyov, the participant of the project took part in the airplane flight over the White Sea in order to verify the coordinates of harp seals whelping grounds.





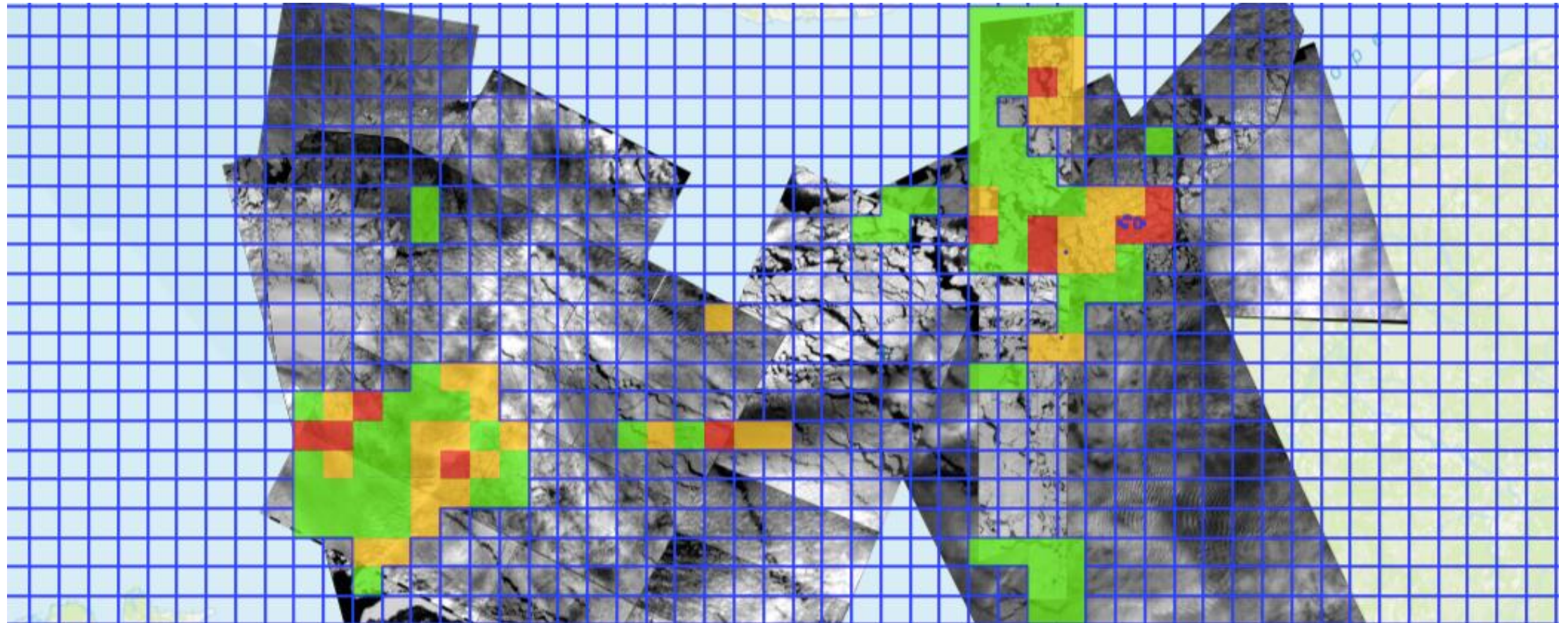
# We thank our Partners!





# Crowdsourcing imagery analysis

We invited everyone to participate in satellite data analysis for further training of the neural network:



No seals/signs



Seals/signs detected



Probably there are seals/signs



First  
commercial  
delivery

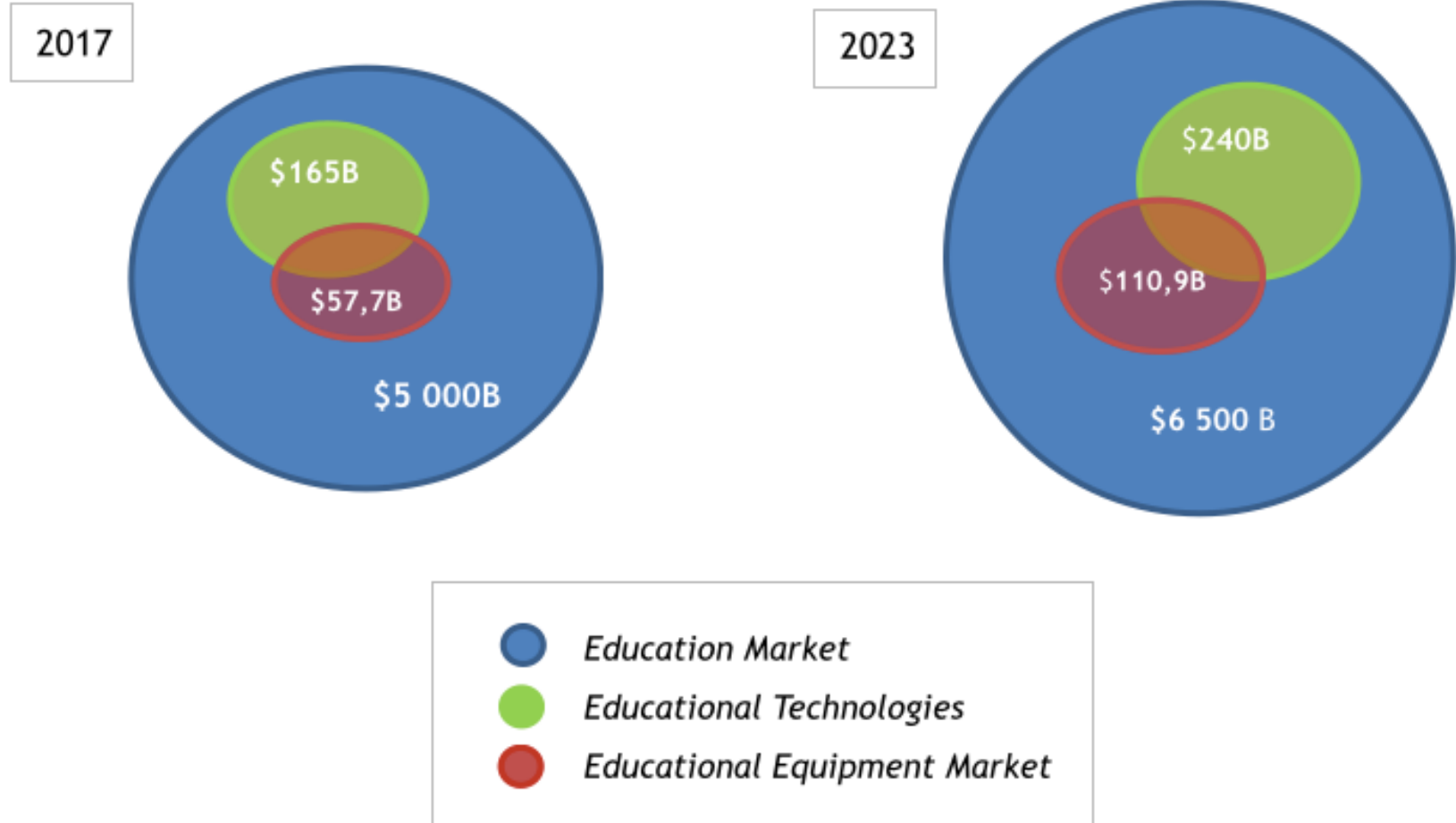
10  
commercial  
orders,  
several with  
government  
support



Looking for strong partnership with space industry and satellites owners



# Global market





LoReTT technology developers – Vladimir and Olga Gershenzon, experts in the field of Earth remote sensing data reception and application.



Our experience:





**B2C** – Family  
Edutainment



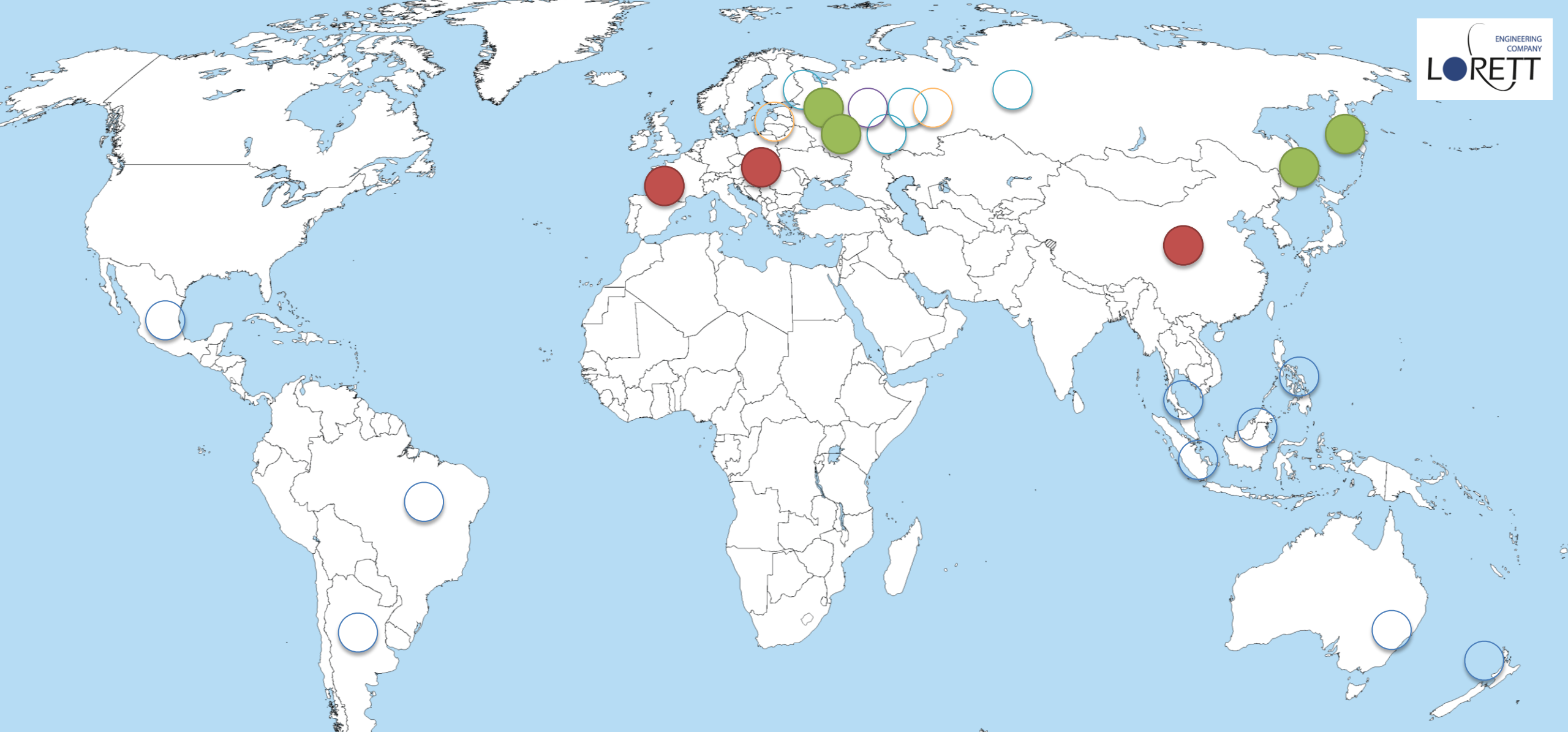
**B2B** – Private  
schools and universities









**B2G** –  
Governmental schools  
and universities

# Our advantage





-  b2g: laboratories in children's industrial parks
-  b2g: laboratories in universities
-  b2b: (Korolyov)

-  planned deliveries in Russia
-  planned deliveries abroad (priority)
-  planned deliveries abroad

# Why invest in us/why work with us?

**INNOVATION**

We are creating absolutely breakthrough opportunity for new generation and therefore for players of Space 4.0 era.

Contact

+7 (985) 727-76-30

[lorett.org](http://lorett.org)