

# Images from Space directly to school computer. Why?

Mrs. Olga Gershenzon, co-founder, Deputy General Director



IAC 2018, Bremen, Germany 1–5 October, 2018

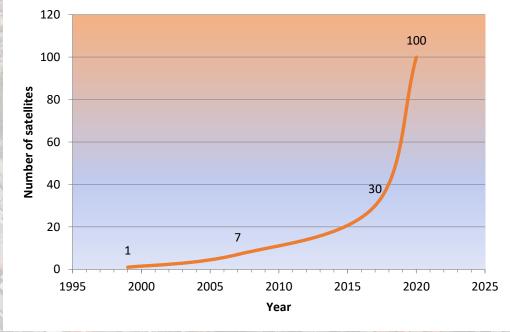




- 1. The most important problem competition between companies owners of satellite and satellites constellation.
- 2. Increasing number of satellites with VHR.
- 3. Increasing number of companies in area of Business Intelligence.
- 4. Lack of data with Zero Latency delivery.
- 5. Open (copyright free) images from Space are usually "old" and therefore cannot help to act in Real Time.
- 6. Education lack of modern laboratory tools for schoolchildren teaching and future profession choice.



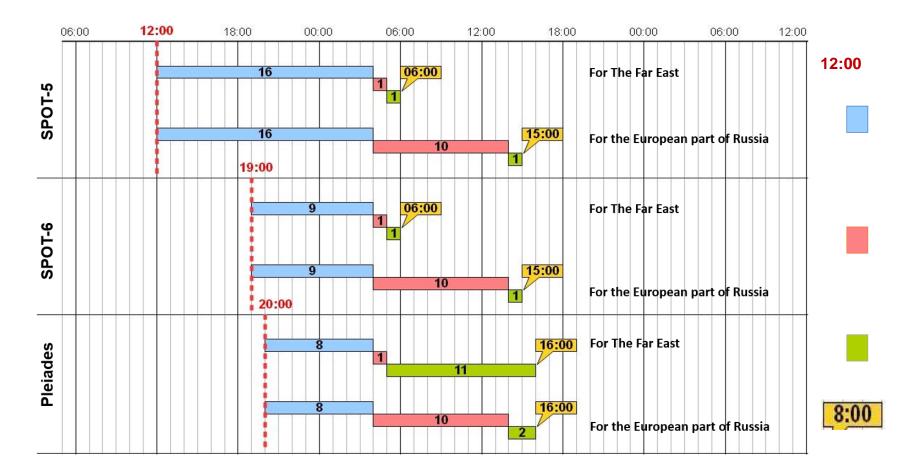
### SATELLITES WITH VHR: THE DEVELOPMENT TREND



São Paulo, Brazil. Worldview-3 satellite image (0.3 m resolution) DigitalGlobe



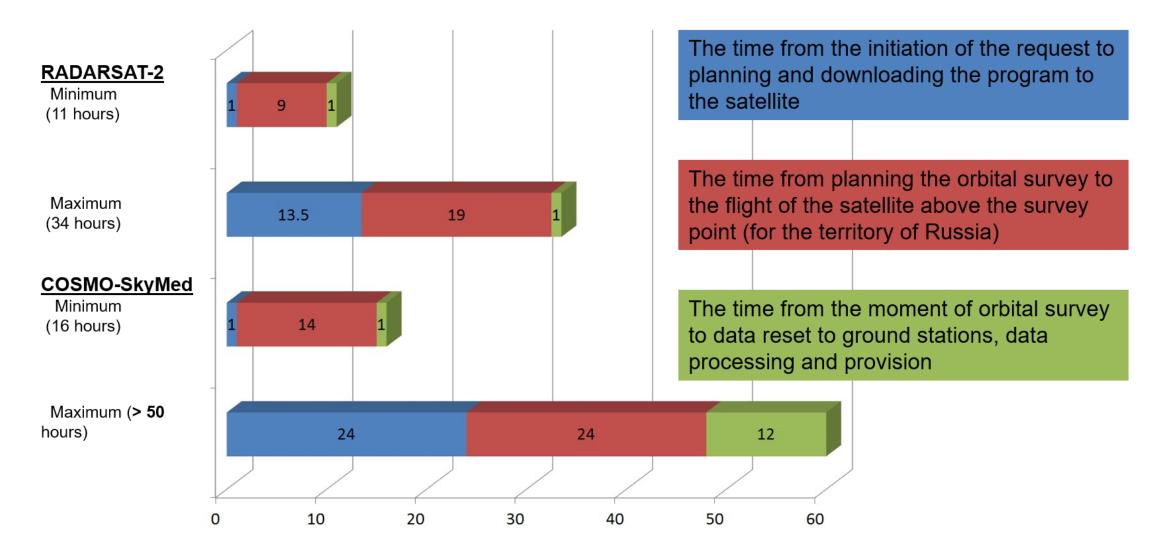
#### Our experience, optical data delivery time in Emergency request



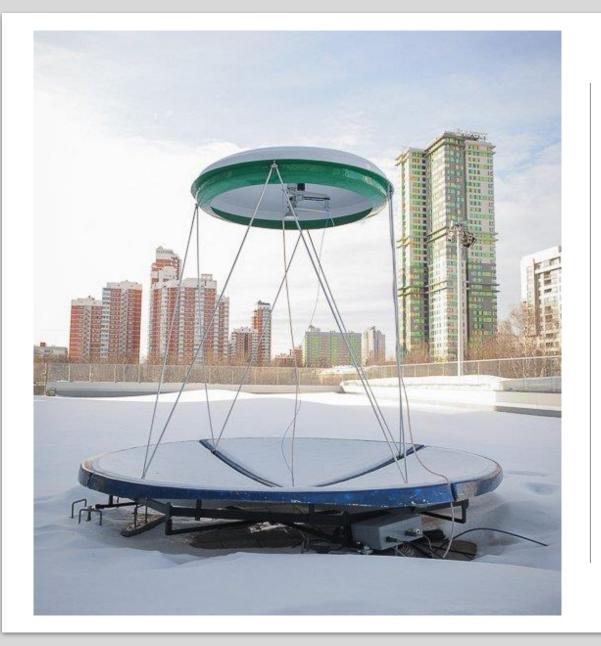
- Application deadlines.
- The period of time from including the application in the survey plan to the first possible orbital survey (for the territory of the Russian Federation).
- The period from the moment of orbital survey to the discharge to the ground stations, processing and provision of data.
- 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







DMC 3-FM3	2018-09-28 07:35:51	07:36:12	17314	71.2
NUSAT 2	2018-09-28 19:54:01	19:54:41	12997	80.4
DMC 3-FM3	2018-09-28 20:55:59	20:56:59	17322	88.2
DEIMOS-2	2018-09-28 21:26:42	21:27:40	23175	88.0
DMC 3-FM2	2018-09-29 07:30:14	07:30:54	17329	75.0
KOMPSAT 3	2018-09-29 10:07:37	10:08:41	33972	85.6
DMC 3-FM2	2018-09-29 20:50:34	20:51:33	17337	84.3
KOMPSAT 3	2018-09-29 23:34:42	23:35:42	33980	81.6
DMC 3-FM1	2018-09-30 07:23:22	07:24:19	17343	83.6
NUSAT 1	2018-09-30 09:34:45	09:35:11	13021	73.7
NUSAT 5	2018-09-30 12:08:26	12:08:50	3616	73.1
NUSAT 4	2018-09-30 12:12:56	12:13:37	3656	81.7
KAZEOSAT 1	2018-09-30 19:22:55	19:24:07	23271	89.8
1				
DMC 3-FM1	2018-09-30 20:43:57	20:44:40	17351	75.6
DMC 3-FM1 NUSAT 5	2018-09-30 20:43:57 2018-09-30 22:52:34	20:44:40 22:53:20	17351 3623	75.6 85.5
NUSAT 5	2018-09-30 22:52:34	22:53:20 22:57:55	3623 3663	85.5 76.9
NUSAT 5 NUSAT 4	2018-09-30 22:52:34 2018-09-30 22:57:20	22:53:20 22:57:55 07:18:39	3623 3663	85.5 76.9
NUSAT 5 NUSAT 4 DMC 3-FM3	2018-09-30 22:52:34 2018-09-30 22:57:20 2018-10-01 07:17:43	22:53:20 22:57:55 07:18:39 07:36:52	3623 3663 17358	85.5 76.9 82.8
NUSAT 5 NUSAT 4 DMC 3-FM3 KAZEOSAT 2	2018-09-30 22:52:34 2018-09-30 22:57:20 2018-10-01 07:17:43 2018-10-01 07:35:53	22:53:20 22:57:55 07:18:39 07:36:52	3623 3663 17358 23172	85.5 76.9 82.8 88.8
NUSAT 5 NUSAT 4 DMC 3-FM3 KAZEOSAT 2 KAZEOSAT 1	2018-09-30 22:52:34 2018-09-30 22:57:20 2018-10-01 07:17:43 2018-10-01 07:35:53 2018-10-01 09:00:50	22:53:20 22:57:55 07:18:39 07:36:52 09:02:01	3623 3663 17358 23172 23279	85.5 76.9 82.8 88.8 87.9
NUSAT 5 NUSAT 4 DMC 3-FM3 KAZEOSAT 2 KAZEOSAT 1 NUSAT 2	2018-09-30 22:52:34 2018-09-30 22:57:20 2018-10-01 07:17:43 2018-10-01 07:35:53 2018-10-01 09:00:50 2018-10-01 09:28:16	22:53:20 22:57:55 07:18:39 07:36:52 09:02:01 09:29:00	3623 3663 17358 23172 23279 13036	85.5 76.9 82.8 88.8 87.9 87.7
NUSAT 5 NUSAT 4 DMC 3-FM3 KAZEOSAT 2 KAZEOSAT 1 NUSAT 2 NUSAT 1	2018-09-30 22:52:34 2018-09-30 22:57:20 2018-10-01 07:17:43 2018-10-01 07:35:53 2018-10-01 09:00:50 2018-10-01 09:28:16 2018-10-01 19:53:02	22:53:20 22:57:55 07:18:39 07:36:52 09:02:01 09:29:00 19:53:41	3623 3663 17358 23172 23279 13036 13043	85.5 76.9 82.8 88.8 87.9 87.7 80.2
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NUSAT 5 NUSAT 4 DMC 3-FM3 KAZEOSAT 2 KAZEOSAT 1 NUSAT 2 NUSAT 1 DMC 3-FM2 DMC 3-FM3 KAZEOSAT 2	2018-09-30 22:52:34 2018-09-30 22:57:20 2018-10-01 07:17:43 2018-10-01 07:35:53 2018-10-01 09:00:50 2018-10-01 09:28:16 2018-10-01 19:53:02 2018-10-02 07:12:22 2018-10-02 21:04:32 2018-10-02 21:10:04	22:53:20 22:57:55 07:18:39 07:36:52 09:02:01 09:29:00 19:53:41 07:13:13 21:05:24 21:11:03	3623 3663 17358 23172 23279 13036 13043 17373 17381 23195	85.5 76.9 82.8 88.8 87.9 87.7 80.2 79.1 79.5 89.4
NUSAT 5 NUSAT 4 DMC 3-FM3 KAZEOSAT 2 KAZEOSAT 1 NUSAT 2 NUSAT 1 DMC 3-FM2 DMC 3-FM3 KAZEOSAT 2 KOMPSAT 3	2018-09-30 22:52:34 2018-09-30 22:57:20 2018-10-01 07:17:43 2018-10-01 07:35:53 2018-10-01 09:00:50 2018-10-01 09:28:16 2018-10-01 19:53:02 2018-10-02 07:12:22 2018-10-02 21:04:32 2018-10-02 21:10:04 2018-10-02 23:51:52	22:53:20 22:57:55 07:18:39 07:36:52 09:02:01 09:29:00 19:53:41 07:13:13 21:05:24 21:11:03 23:52:37 07:06:08	3623 3663 17358 23172 23279 13036 13043 17373 17381 23195 34024	85.5 76.9 82.8 88.8 87.9 87.7 80.2 79.1 79.5 89.4 75.3

### VC

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### We are creating demand

01

The creating of demand through exiting projects 02

First commercial delivery

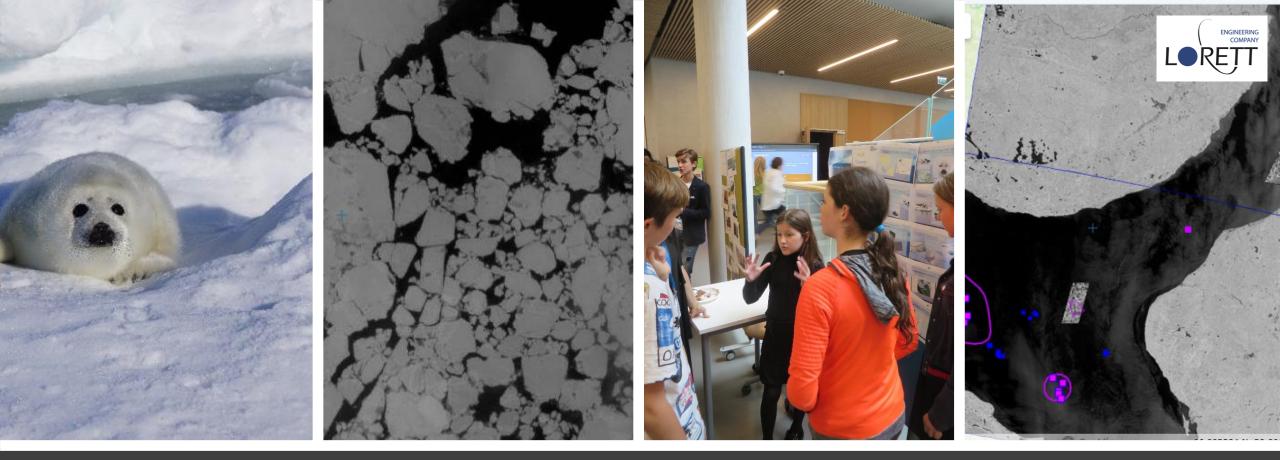
03

Looking for strong partnership with satellites owners во прокранный нар

Программа «Дежурный по планете»

> Авторы и разработчики: Гершензон Владимир Евгеньевич Гершензон Ольга Николаевна Никитская Карина Евгеньевна Инженерная компания «Лоретт» Аксенов Дмитрий Евгеньевич АНО «Прозрачный мир»

> > **MOCKBA 2018**



The creating of demand through exiting projects

## Pilot projects in schools



Nine commercial orders, some with government support

First commercial delivery



Looking for strong partnership with satellites owners



### What do we need now?

- ESA/Copernicus Sentinel 1, 2, 3 direct downlink to EU schools at least at "blind" mode.
- NASA/USGS Landsat8 direct downlink to schools over the World.
- Partnership with educational market leaders over Europe and beyond.



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



### Our experience:



<mark>∦спутникс</mark>







B2B – Private

schools and universities

### B2G – Governmental s

Governmental schools and universities

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## Why invest in us/why work with us?

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