

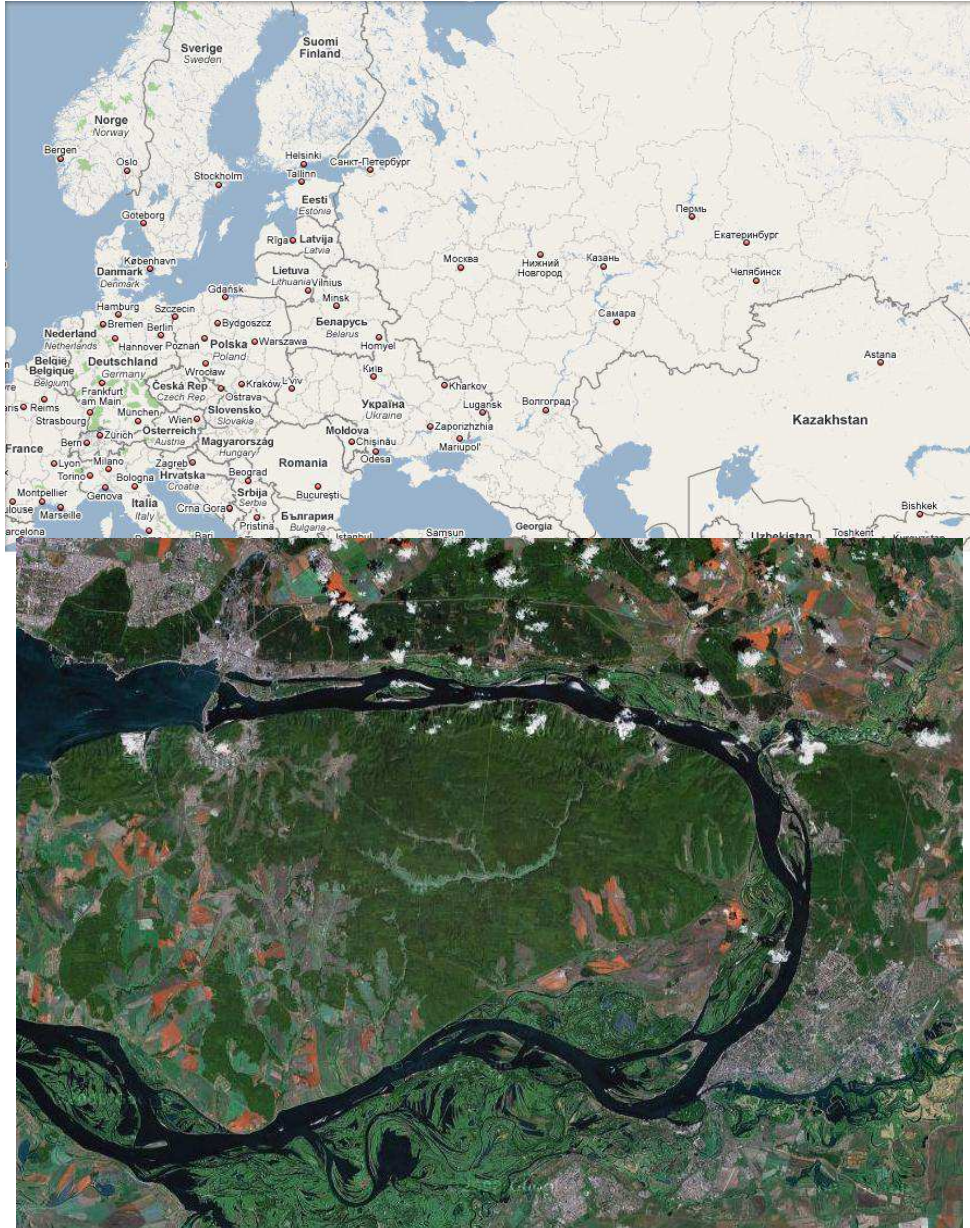
Samara State Aerospace University (national research university)



Educational and Research Activity of
UNISEC – Samara/RU

Professor Igor Belokonov

1. Samara city – informal Russian space capital





Evolution of Launchers of Samara Rocket Space Center



Developed by OKB-1.
The first two stages
are manufactured by
the Progress plant

Developed by TsSKB-
Progress under
supervision of OKB-1

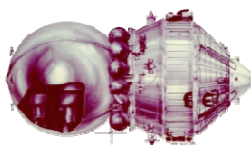
Developed by TsSKB-Progress
Soyuz-U, Soyuz-FG are in operation

Soyuz-2 undergoes flight testing.
Three launches of Soyuz-2-1a and
one launch of Soyuz-2-1b have been
performed.
Being adapted to be used in manned
flights

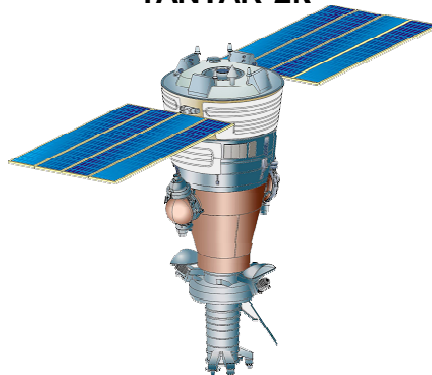


Earth Remote Sensing Spacecraft

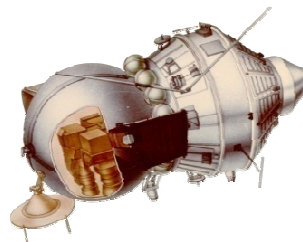
ZENIT-2



YANTAR-2K



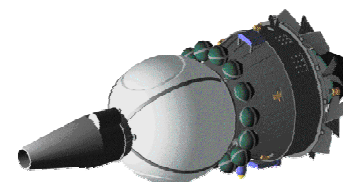
ZENIT-4MT



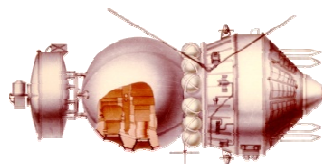
RESURS-DK1



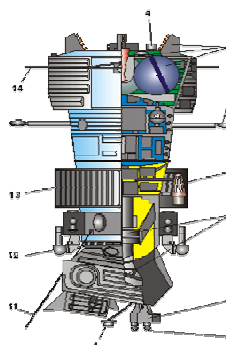
RESURS-F1



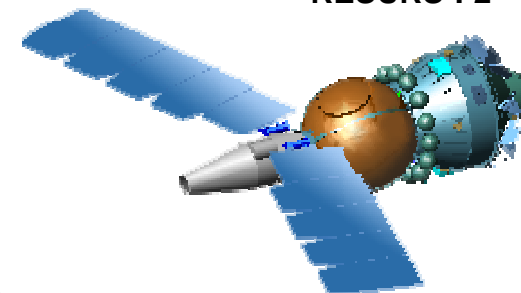
ZENIT-2M



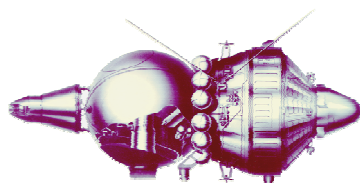
ORLETS



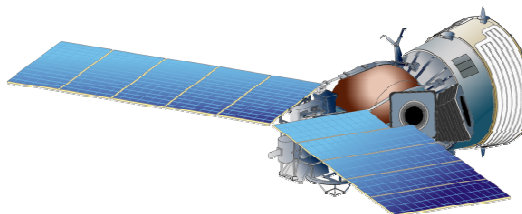
RESURS-F2



ZENIT-4MK



KOMETA



8 modifications in
total

7 modifications in
total

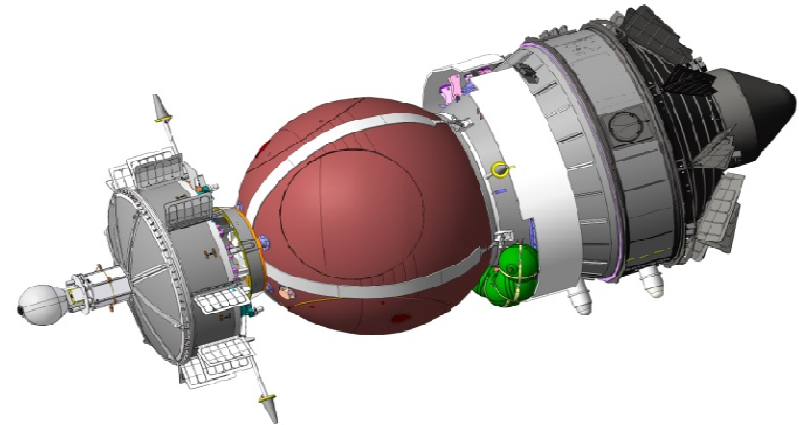
5 modifications in
total



Scientific Spacecraft

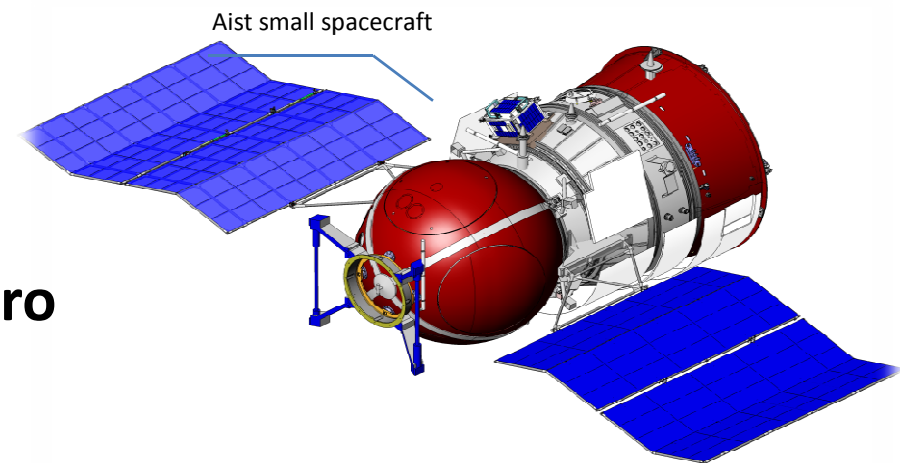
Foton-M3 Spacecraft

In September 2007, 109 experiments were performed by hardware from 12 countries.



Bion-M1 Spacecraft

In April 2013, were launched micro satellite AIST, 5 nanosatellites



2. SSAU – Russian national aerospace research university

- History

- ☐ Was founded in 1942, November,
as Kuybyshev aviation institute
- ☐ SSAU since 1992
- ☐ National Research University since 2009

- Education

- ☐ Total number of students – more 11000
- ☐ Engineer's programs – 36
- ☐ Master's + Bachelor's programs – 15



All programs have state accreditation

SSAU structure

- Faculties -9
- Chairs and departments – 51
- Research laboratories – 27
- Research institutes - 5
- Library - over 1 million books and electronic resources
- Training airfield with a unique aircraft fleet,
- Sports complexes (2) with a swimming pool
- Yacht club
- Public museum of aviation and cosmonautics
- Center of aircraft engine history
- Health and fitness center



SSAU has strong cooperation with

- Space Industry

- Samara Rocket Space Center “TsSKB-Progress”,
- Samara Science-Technical Center of Engines “Kuznetsov”
and so on

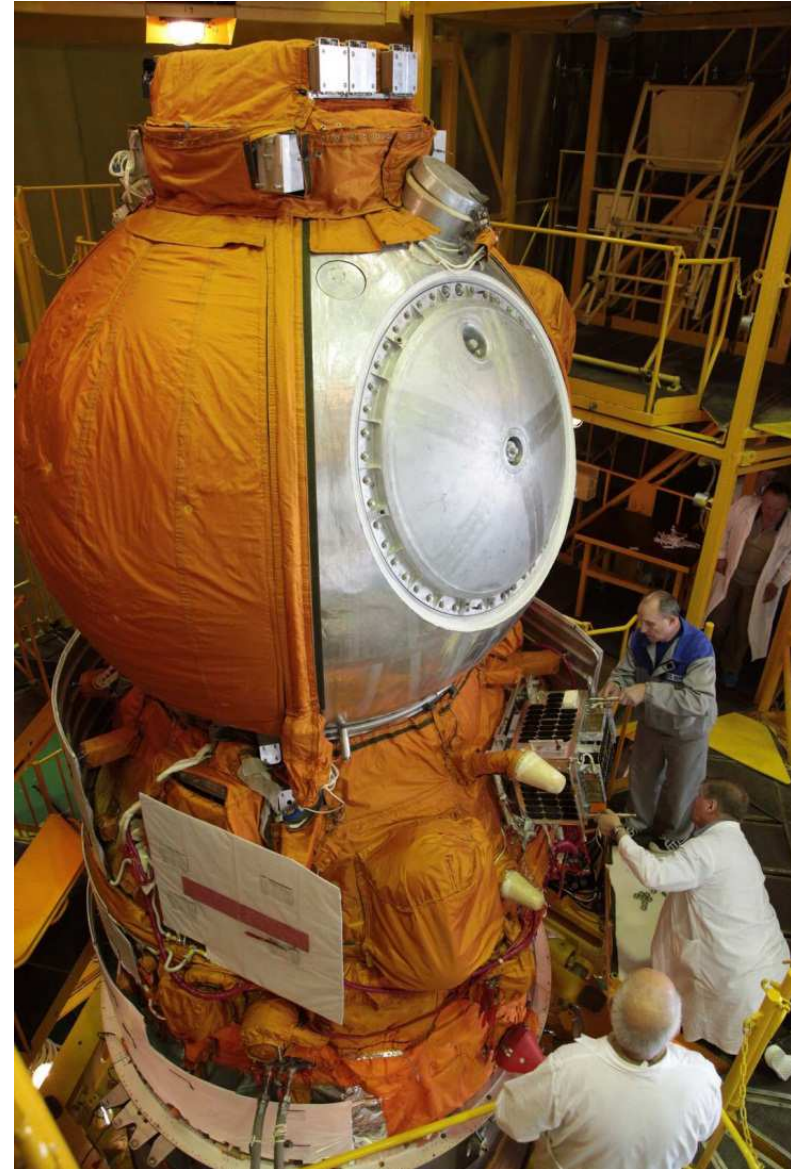
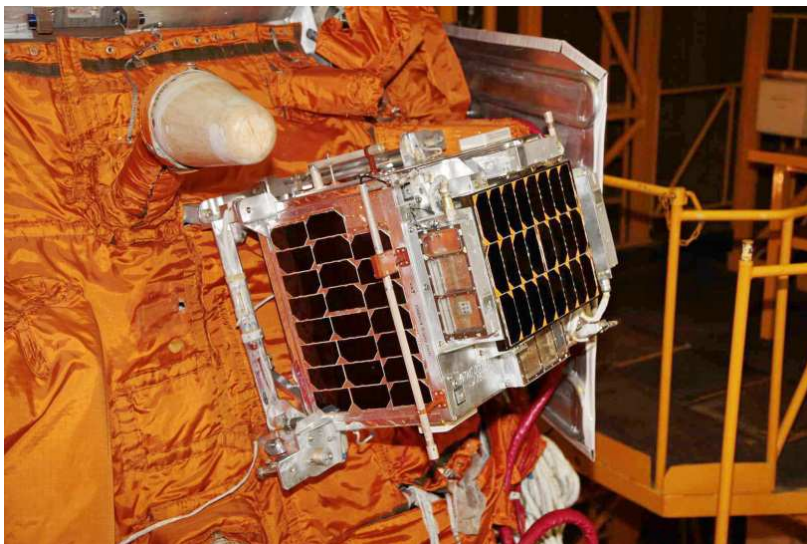


- Institutes of Russian Academy of Sciences

- Institute of Image Processing Systems of RAS,
- Volzhskiy branch of Metallurgy and Material Science Institute
after A.A. Baykov of RAS
and so on



Development of the AIST scientific educational small spacecraft in cooperation with the Samara State Aerospace University Was launched in April 2013, now is successful operating.



3. What is it UNISEC – Samara/RU ?

Space Research Department (interuniversity department)
was established in 2010 by SSAU, Samara State University
Ylianovsk State University
(UNISEC –Samara/RU)

- Staff

- ☐ Prof. Dr. - 4

- ☐ Associate Prof., Dr. – 4

- ☐ Assistant Prof. – 3

4. Our university-partners

- Lulea Technical University (Sweden)
- Lessius University of Applied Sciences (Belgium)
- Delft Technical University (Holland)
- Vigo University (Spain)
- Wurzburg University (Germany)
- Belorussia State University
- Ukrainian Universities
- Kazakhstan Universities

5. Educational programs

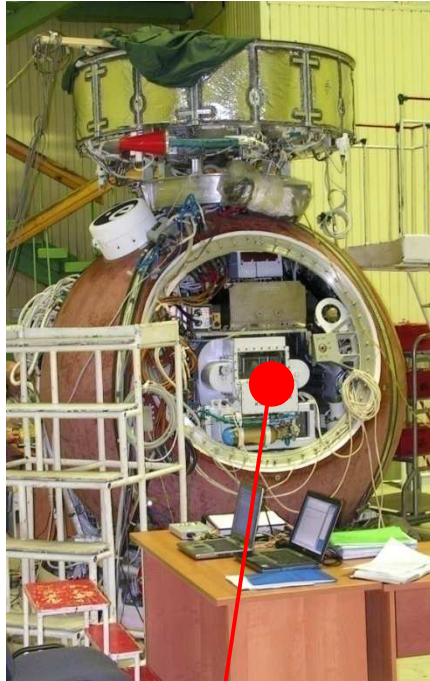
- Master Programs (3)
 - **1.Future Space Technologies and Experiments in Space**
 - (now, 15 first year students, 4 second year students)
 - **2.Space Information Systems and Nanosatellites. Navigation and remote sensing** (now, 7 first year students, 4 second year students)
 - **3.Ballistics, Guidance and Navigation in Space (no students now)**
- Ph.D. programs – 7 students
 - 1.Space Science
 - 2. Space Engineering and Technology

Additional Educational Program in the frame of Summer Space School “Future Space Technologies and Experiments in Space” since 2003 (3,5 ECTS)
www.volgaspace.ru/school/

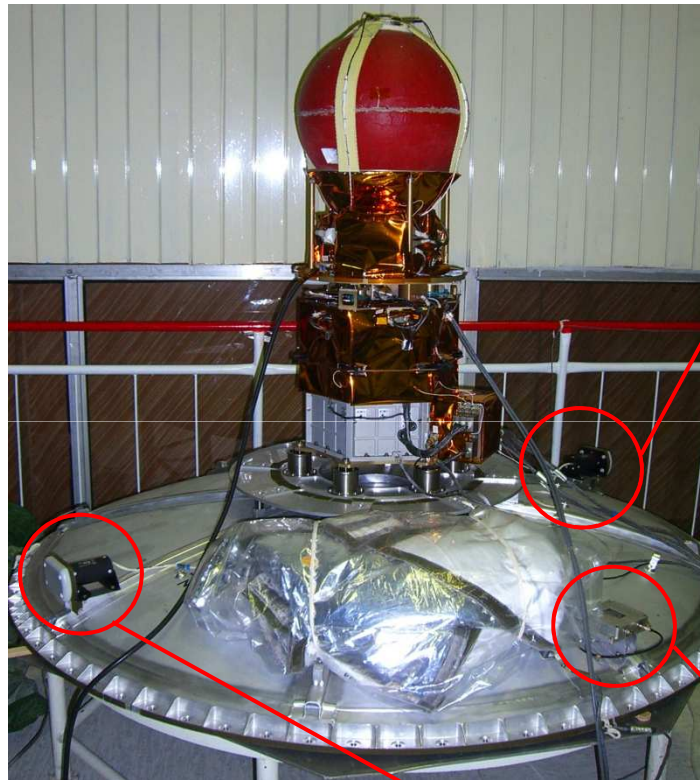


6. Space researches

Experimental equipment «SSAU – YES2» on board of MSP “Foton-M3”



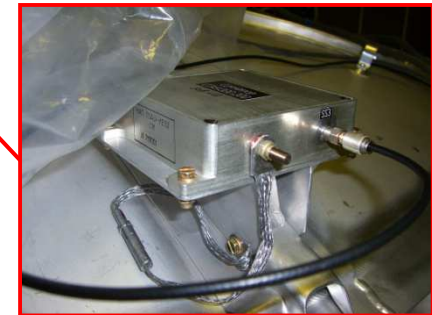
Electronic unit



Navigating antenna



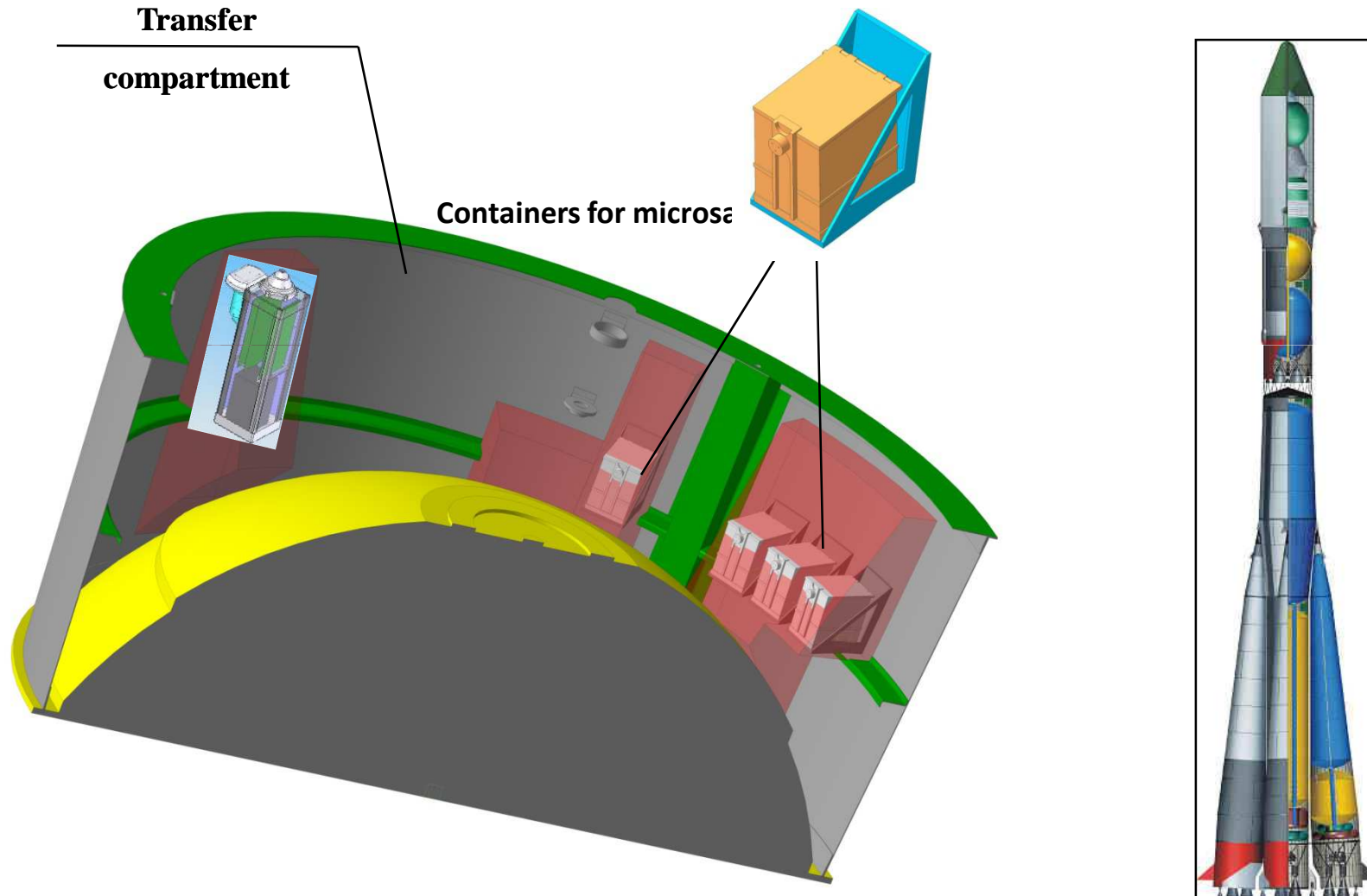
Navigating antenna



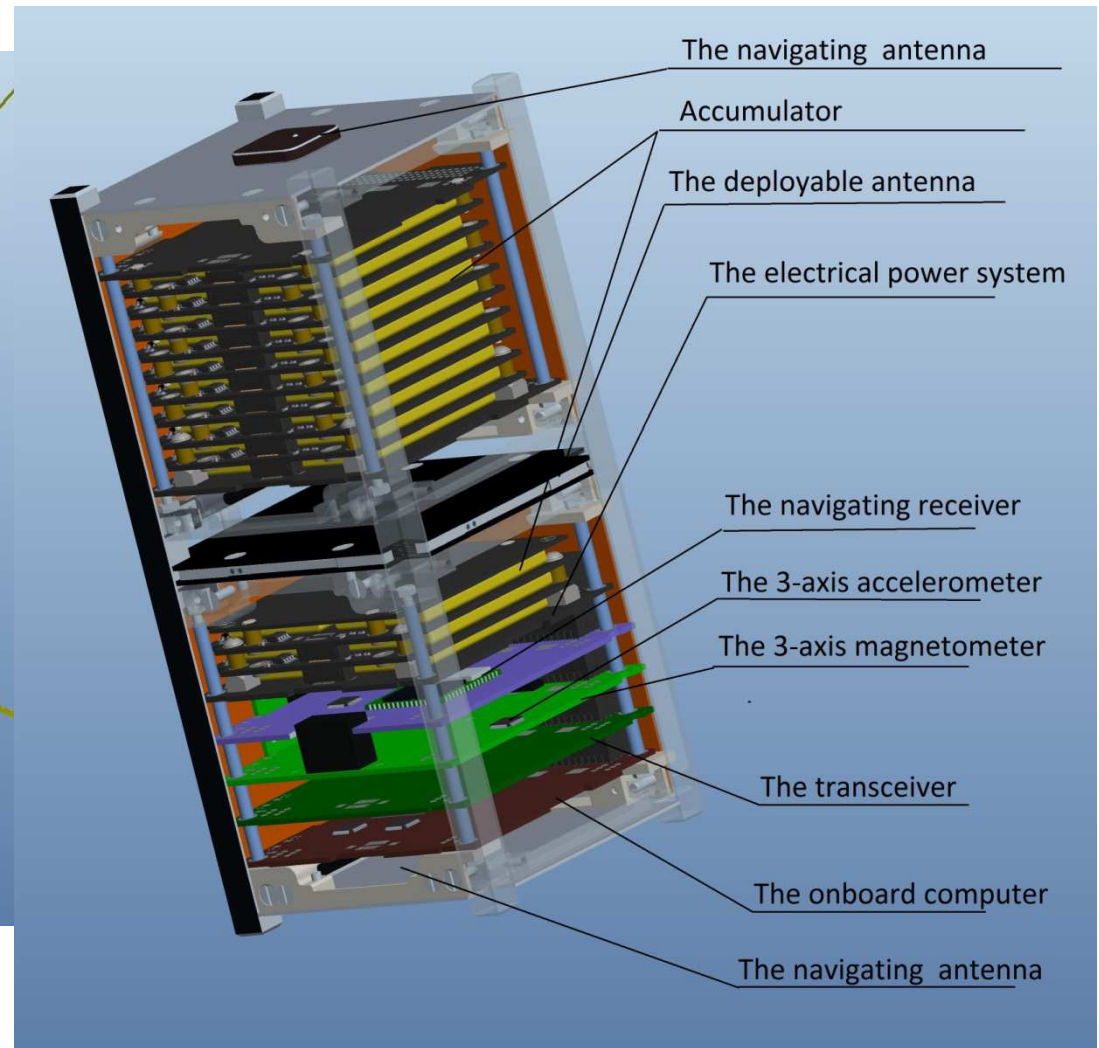
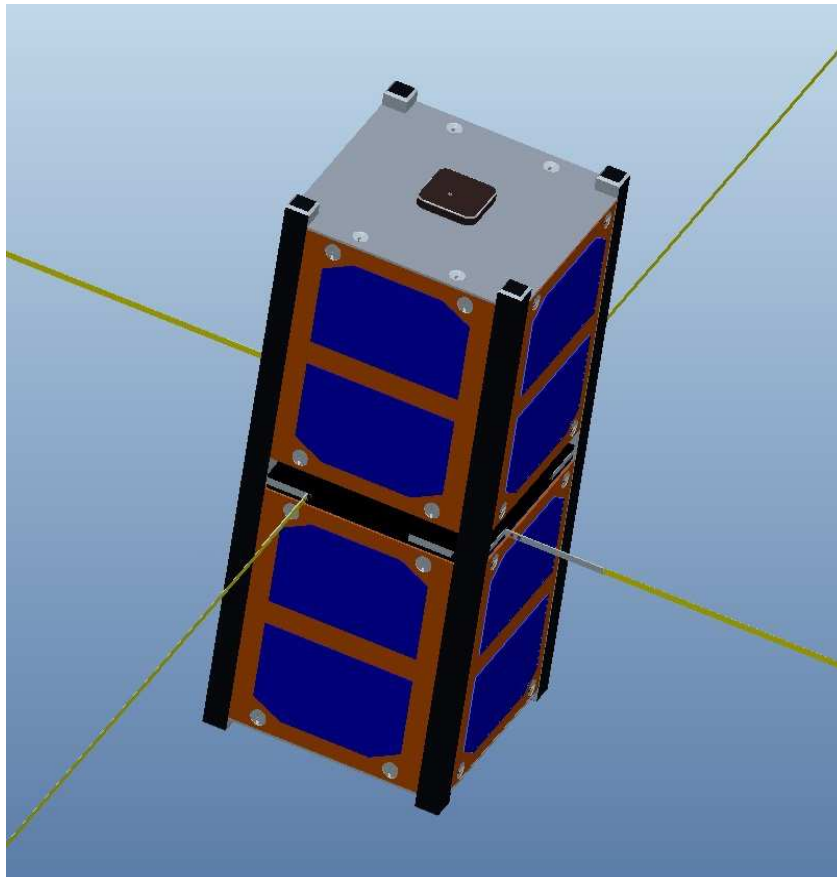
Summator of navigating signals

7. Our nearest plans

1. In-orbit demonstration of new launch services on LEO for nanosatellites (2014-2015)



2. Nanosatellite SamSat-1 (planning launch in 2015 from Soyuz orbital stage)



Let us join and cooperate

Welcome Samara

Thank you for attention