Russian private space company

SPUTNIX education: from satellite mockup to CubeSat launch

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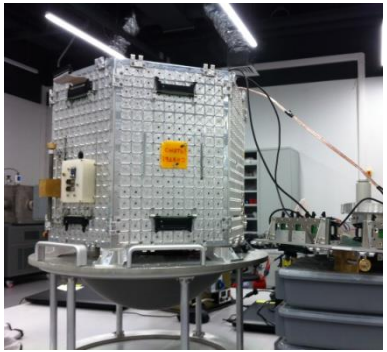
About «SPUTNIX»

SPUTNIX Ltd is the Russian private company, specializing in microsatellite components and technologies development as well as microsatellite-based missions and services

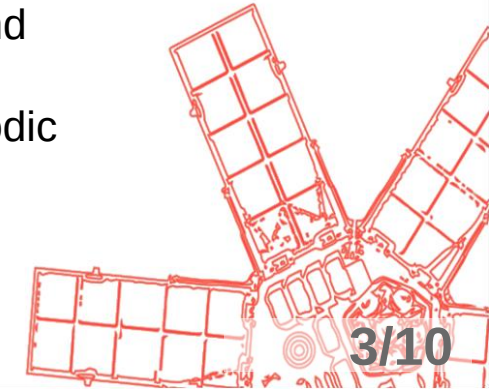
We are working since 2011, providing cost-effective solutions, based on microsatellite technology, and a high level of technical support at all stages of the product life cycle, to our clients.

Business lines of «SPUTNIX»

1) **Microsatellite technologies**
Attitude determination and control systems, ADCS actuators, ADCS sensors, onboard antennas, onboard X-band transmitters, onboard navigators, receiving and control stations, ground laboratory facilities, onboard software, microsatellite platforms



2) **Space education**
Complex of measures to supply school and university laboratories with professional technical equipment and to provide methodic support of their use.

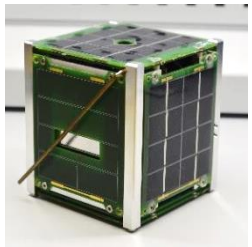


Motivation to start from schools

In addition to a standard CubeSat related products
SPUTNIX developed a simplified product line for schools

Key product

Universities



Schools

Accessory

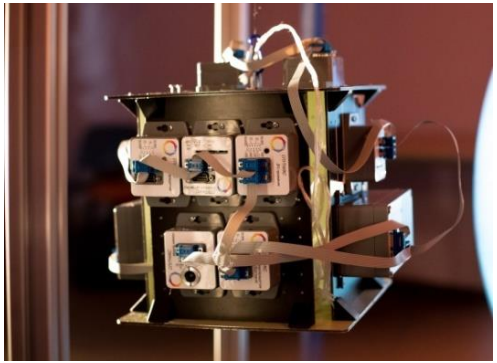
- CubeSat program is relatively expensive
- Lack of students involved
- Difficult to start in developing countries

OrbiCraft

Satellite functional kit

OrbiCraft is designed to learn the basics of a Spacecraft design assembly and testing. The kit helps to quickly assemble a working prototype and design a control algorithms both on **C** or **Python.** User needs only laptop with wi-fi connection.

Equipment
Onboard computer Raspberry-Pi
Flywheel
Directional sun sensor
Magnetic field sensor
Angular rate sensor
Radio channel, etc.



Visit product web-page orbicraft.sputnix.ru

Terra

Space flight simulation complex

Was designed for debugging systems of the satellite under space flight conditions.

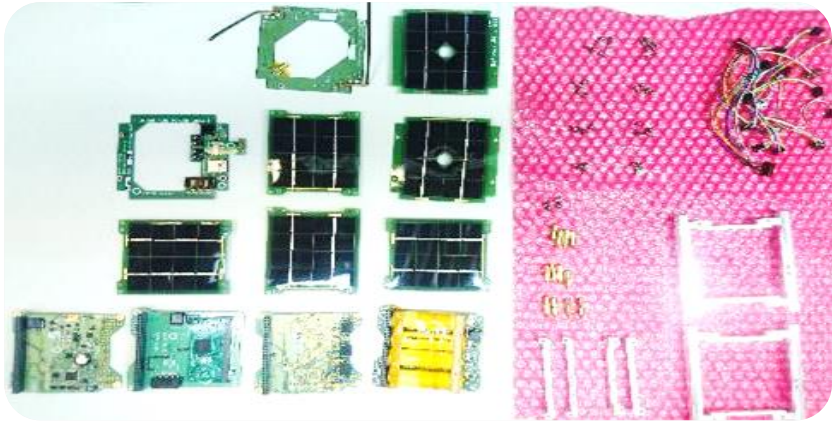
Consists of:

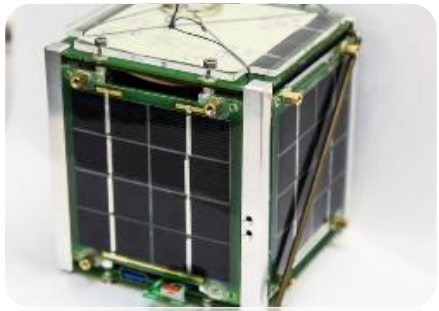
- **Large rotating globe** for satellite orbital motion simulation
- **Current frame** simulates a magnetic field around the satellite
- **Spotlight** simulates the solar flux
- Dots on the globe's surface mimics ground stations and mission control centers
- Software "**Virtual MCC**" visualizes the coverage zones for satellite control

Work with OrbiCraft Pro CubeSat kit is almost as simple as with a school satellite kit OrbiCraft

Compatible with junior Orbicraft satellite kit

- The same OBC – Raspberry
- The same SPUTNIX user API and web-interface
- Convenient and easy for starter education





We organized a various competitions, one of them is “Space systems design” as a part of WorldSkills

2016, 2017

- SPUTNIX found a new discipline in WorldSkills competition “Space Systems design”
- Competitions were organized for schools and universities all over Russia
- 3 days competition format was verified and improved

2018

- Local competitions will be organized in multiple countries
- Several countries are in a preparation process
- We are open for new participant from any countries
- We could help with competition organizing experience

2019

- International WorldSkills championship in 2019 in Russia

Why WorldSkills?

- More than 75 member countries and regions
- More than 45 skills (disciplines)
- Verified competition processes etc.
- Local industrial partner in each country

worldskills AbuDhabi2017 مسابقة المهارات العالمية أبوظبي 2017

euroskills Budapest 2018

worldskills Kazan 2019

Join the Space System Design WorldSkills competition!

SPUTNIX

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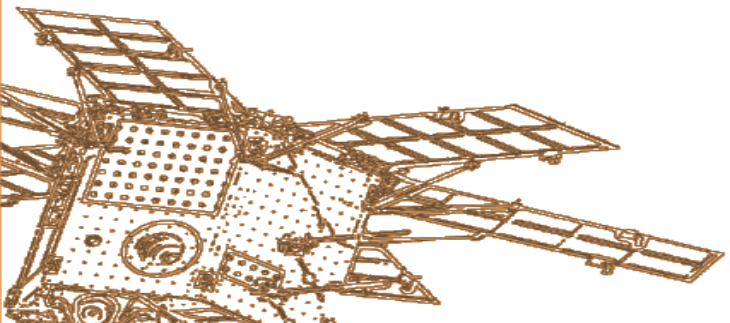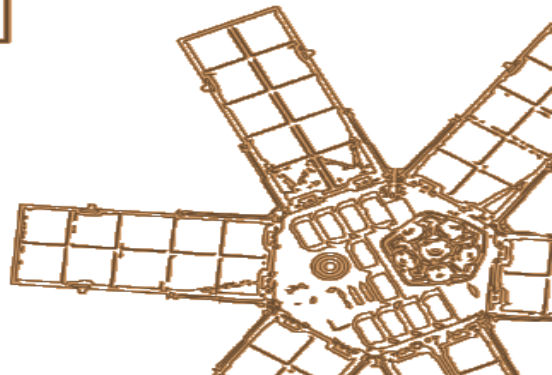
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