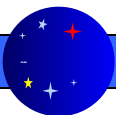


European Interparliamentary Space Conference
EISC 2016, Bucharest, Romania, 3-4 October 2016

Romanian Space Activities

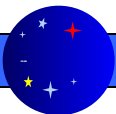
Space and Security

Dr. Marius-Ioan Piso
Romanian Space Agency



Space and Security

- Space systems contributed to bilateral / horizontal security during the Cold War
- Since 1990, major contributions to global security and global issues:
 - Climate changes
 - Disaster monitoring
 - Planetary defence
- Space systems became critical infrastructures for planet Earth
- Space for Security and Space Security



Romanian Space Strategy

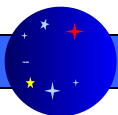
Defined by means of the RTD policy - with effects on both academia and industry

Three constant objectives since the 90's

- Participation to international space missions and programmes – in particular ESA
- Development of specific national projects
- Capacity building at national level

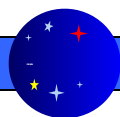
Presently ruled by:

- Romanian Research, Development and Innovation Strategy for 2014-2020
- National RTD Plan 2007-2013, t.b. followed by National RTD Plan 2014 - 2020
- Law no 262/2011 for the ratification of ESA accession and the STAR Programme

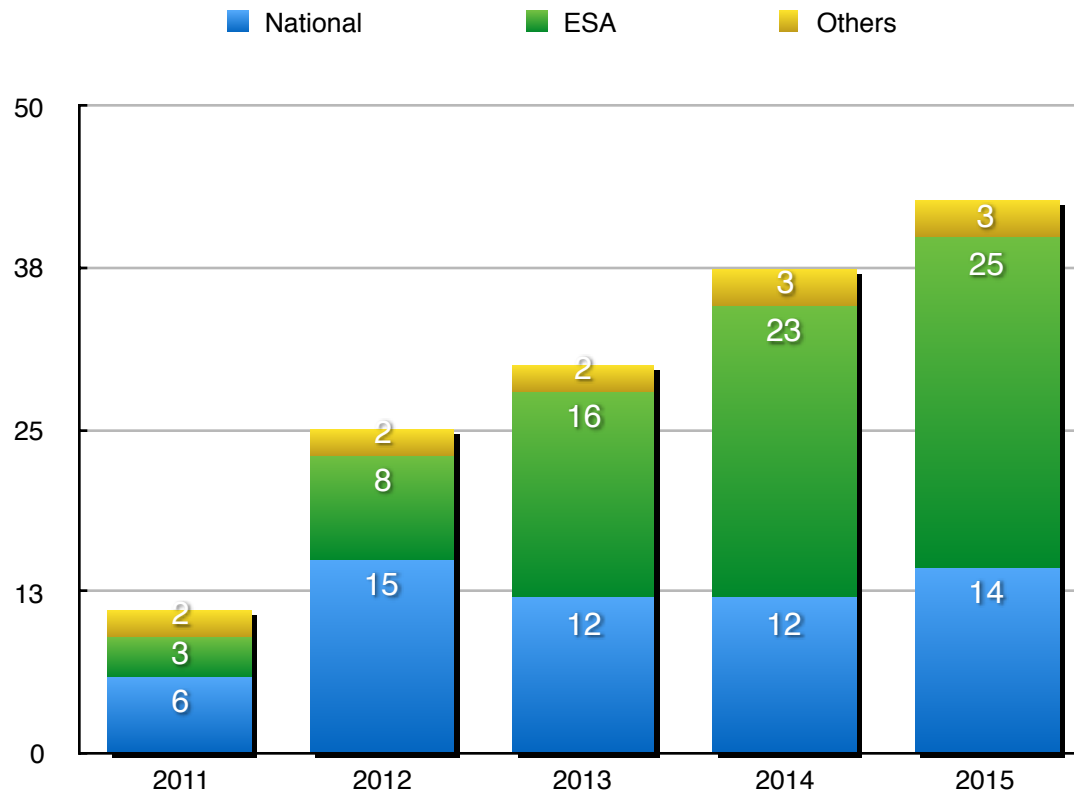


Romanian Research, Development and Innovation Strategy 2014 – 2020

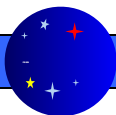
- Based on the analysis of the RDI market in Romania the National RDI Strategy identifies the following thematic priorities for the public RDI investments in the period 2014–2020:
 - Bio–economy (agriculture and forestry, fisheries and aquaculture, food, biotechnologies and bio– pharmaceuticals);
 - **ICT, Space and Security;**
 - Energy, environment and climate changes;
 - Eco–nano–technologies and advanced materials;
 - Health.
- Included already in the EU – Romania Partnership agreement 2014-2020



Romanian Space Agency

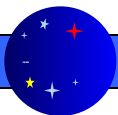
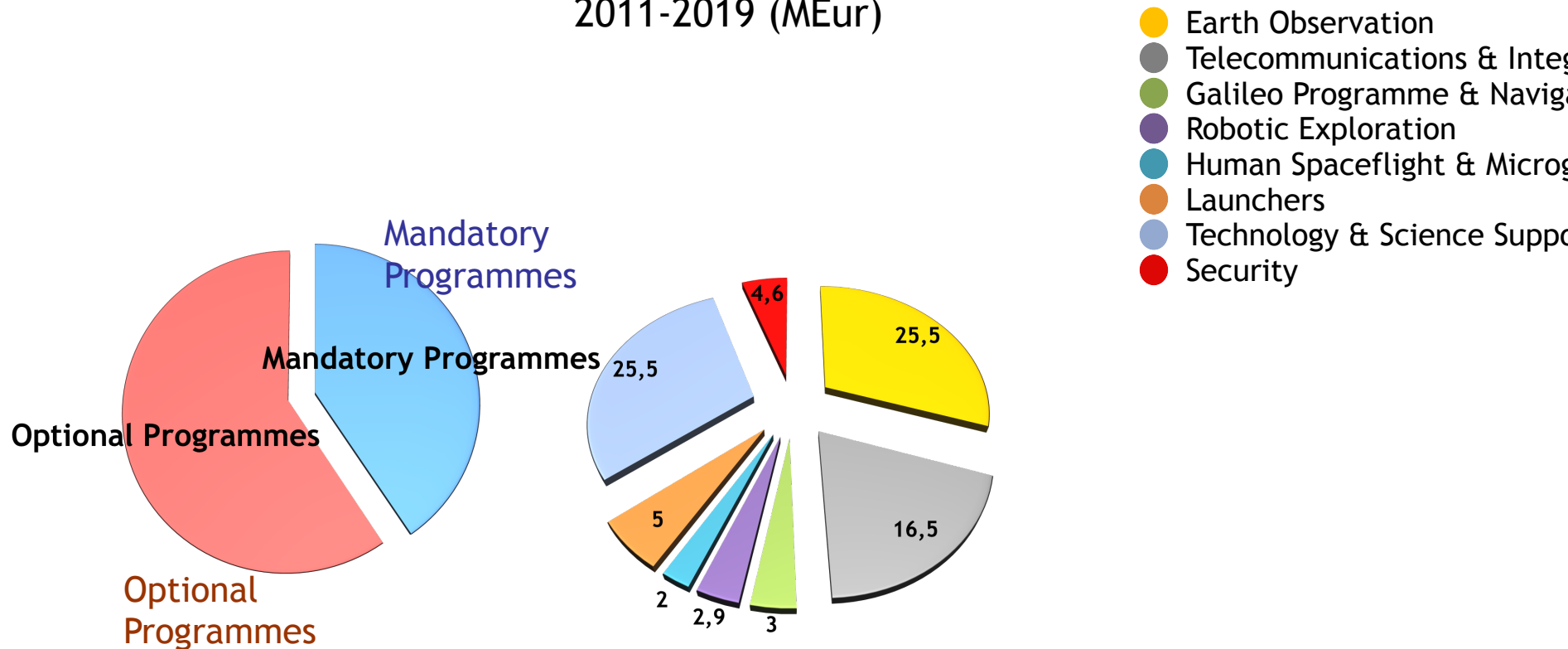


RO Space RTD Budgets
(M Euros)
(Including ESA and Eumetsat)



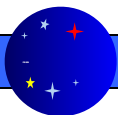
Romanian Contribution to ESA

2011-2019 (MEur)



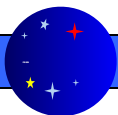
Romanian Space Agency

- ROSA - National Space Agency established 1995
- Public organization in the system of the Ministry responsible for Research and Technology
- Representative and Coordinator of space activities in Romania
- Financing agency for research in Space, Aeronautics and Security Research
- Developer and integrator of its own RTD programmes by the ROSA Research Centre (RRC)



Romanian Space Agency

- ROSA – national representative for:
- European Space Agency (ESA)
 - Romania the 2nd former socialist country admitted in ESA (2011), first ESA agreement in 1993
- European Union: GNSS Supervisory Authority, GMES Committee, FP7 and Horizon 2020 programme committees for Space, Security research, Aeronautics and Galileo, HSPG, Space Working party, Space Council)
- UN – COPUOS (former chair STS and Committee)
- NATO and EDA specific issues
- IAF, IAA, COSPAR, IISL, GEO, Eurisy, ESPI, other bilateral agreements with national agencies (NASA, CNES, others).

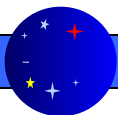


Centre of Competences in Space Technologies

| Name | Organisation |
|--|---|
| Laser-Plasma Acceleration of Particles for Radiation Hardness Testing | <i>National Institute for Laser, Plasma and Radiation Physics (INFLPR)</i> |
| Competence Centre for Smart Sensors and Big Data Technology for Space Applications | <i>University "POLITEHNICA" of Bucharest - Research Centre for Space Information</i> |
| Centre for Atmospheric REmote Sensing and Space Earth observation | <i>National Institute of Research and Development for Optoelectronics INOE 2000</i> |
| Computer Assisted and Information Feedback Training for Human Spaceflight Support | <i>Institute of Space Science (ISS)</i> |
| INCAS Launchers and Space Vehicles Center of Competence | <i>National Institute for Aerospace Research "Elie Carafoli" (INCAS S.A.)</i> |
| Constanta Space Technologies Competence Centre Dedicated to the Romanian Marine and Coastal Regions Sustainable Development | <i>National Institute for Marine Research and Development "Grigore Antipa", Constanta</i> |
| ROmanian nanoSatellite Technology - Competence Centre | <i>Institute of Space Science (ISS)</i> |

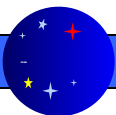
Romanian Space Agency

- ROSA - Security research at the national level:
 - Coordinator (2004 - p) of the Inter-Ministerial (Inter-Agency) Group for Security Research;
 - Public authority responsible (APR) for specific national critical infrastructures;
 - Public responsible authority for GNSS (Galileo) PRS (Public Regulated Services) (t.b.a. 2016)
 - In-charge for specific issues by the National Emergency regulations (space objects, disaster management)
 - Coordinator and participant for security related projects, as GEOINT (Imagery based intelligence), flood management.



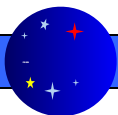
Romanian Space Agency

- ROSA – representative for security related issues:
- European Union:
 - Galileo - Public Regulated Services
 - Horizon 2020 programme committee Secure Societies
 - Space Surveillance and Tracking (SST)
 - GOVSATCOM
 - EU Monitoring and Information Centre - GMES initial services
- UN – COPUOS
 - Near Earth Objects, Climate Changes, UN-SPIDER
- NATO - Science for Peace and Security, STO specific technical committees
- IAA - Space Systems as Critical Infrastructures



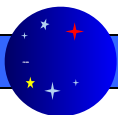
RO Security Space Projects

- PROBA-3
 - ESA Formation Flying to define a 144 m chronograph able to detect potentially dangerous objects coming from the direction of the Sun
- Asteroid Impact Mission (AIM)
 - ESA - NASA Mission to change by impact the orbital parameters of the double asteroid 65803 Didymos
 - Asteroid Impact Detection Assessment (AIDA)
- Optical satellite tracking (ESA SSA)



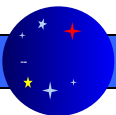
RO Security Space Projects

- Space Weather monitoring system
- Cheia SST 32 m antenna retrofit
 - Space Surveillance and Tracking ground station (mono- and bi-static radar) - tracking of NEO and space debris
- National GEO communication satellite or public institutions - studies
- Studies for a national Earth Observation ground and space system, including optical and radar observation facilities



Thank you for your attention!

2013-2019



agentia spatiala romana - romanian space agency