Space Activities
Tasks of the Hungarian Space Office

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Outline of the presentation

- Recent progress in space technologies
- Hungarian participation in space programs
- Role of the Hungarian Space Office
- ESA accession, PECS achievements
- ESA membership – new perspectives for the Hungarian space sector
- ESA, EU and Member States better cooperation
- On the Hungarian space sector
- Conclusions

Progress in Space technologies

- Space technologies and services – part of our daily life
- Space activities are not any more the arena of rivalry of a few countries
- The space industry and market is not any more financed by little public money – more and more private players invest in space technology
- Examples demonstrating the new space context:

  competition increasing; lot of new entrants;
  new ambitions, challenges, innovative approaches; commercialization;
  new multidisciplinary approaches;
  new disrupting industrial and market models;
  tighter combination of high-tech sectors – space data services with digital and IT technologies

New space context

- Competition between major players

BUT

- much more and wider cooperation between countries – EU-wide; ESA-wide;
  organizations: EU, ESA, EUMETSAT;
  also major players – ESA-NASA-ROSCOSMOS
- Tasks for societal and economic benefits: pl.: weather forecast; navigation; communication;
  Earth-observation; etc.
- Tasks to face global challenges: security,
  climate change; resource scarcity;
  environmental protection; etc.

Hungarians in Space Programs

- More than 40 years of space activities
- Participation in Intercosmos – since 1967
- First steps in space research programs in 1970-ies
- May 1980 – Hungarian cosmonaut, B. Farkas on Salyut space station
- Major contribution to VEGA program (Comet Halley mission) of more than 10 countries
- 1980-ies tightening contacts with ESA and NASA
- 1992 – establishing the Hungarian Space Office

Hungarian Space Office

- Independent agency, founded in 1992
- Under the supervision of the Hungarian Ministry of National Development.

Hungarian Space Office

Responsibilities

- I. pillar: support and coordination to domestic space actors
- II. pillar: bi- and multilateral international cooperation
- III. pillar: Hungarian representation in the European Space Agency

I. pillar

- Coordination of the domestic sector
- Identification, assessment and support for productivity and growth of Hungarian space actors
- Domestic programmes for alternative technology developments that could lead to cost-effectiveness for internal activities

II. pillar

- Representation of Hungary in international organizations
- Representation in the EU
- Development and maintenance of bilateral relationships

III. pillar

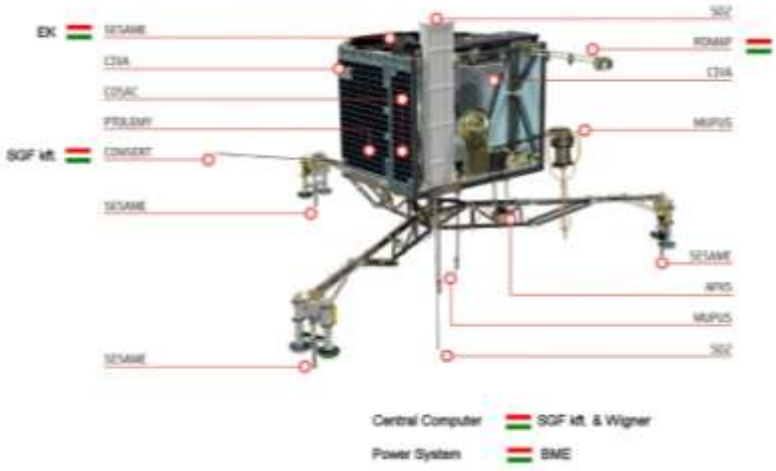
- Hungarian delegation to the European Space Agency
- Exploitation of opportunities related to ESA membership
- Supervising Hungarian Incentive Scheme (Task Force members)
- Supervising overall geo-return

Hungarian ESA accession

- 1991: General Cooperation Agreement
- 1998: PRODEX Agreement
- 1999: First round of negotiations for membership
- 2003: PECS Agreement
- 2013: PECS second extension of PECS agreement
- 04. 11. 2015.: Ratification of the Accession Agreement, Hungary becomes the 22. member state of ESA

Achievements under PECS

- Length: 12 years (2003-2015)
- Overall amount: € 21.5 million
- 125 contracts signed
- Most notable areas of development under PECS:



- ✓ Solar system exploration
- ✓ Instrument development related to ESA science programmes
- ✓ Research related to ESA ELIPS programme (medical, psychological, material, etc.)
- ✓ General technology development

Hungarian contribution to ESA activities

- Mandatory contribution: € 5 million /year
- Optional contribution:

  GSTP - € 1,14 million /year

The RADCUBE mission was launched in May 2016 in the framework of the GSTP programme – A 3 unit cubesat with the RadMag dosimetry instrument on board
Launch is planned for 2019

Hungarian Incentive Scheme

ESA-Hungarian Task Force supervises the development of the Hungarian proposals:

- 4 evaluation deadlines per year
- 32 proposals submitted so far
- 50% success rate
- Distribution of proposal topics:
  - Research and development – 44%
  - Flight hardware – 25%
  - Preparatory Activity – 25%
  - Space applications – 6%

EU, ESA and Member States better cooperation

- EU space programs – context: economic and societal benefits; global competitiveness; autonomy in accessing space securely; EU global actor in international cooperation; effective delivery.
- ESA cooperating with the EU
  – ESA is the key player providing the necessary technology and science expertise
- Recent huge EU programs: GNSS (Galileo and EGNOS) and Copernicus

Composition and size of the Hungarian space sector

Approximately 50 eligible space actors:

- Industrial entities (SMEs)
- Academy research centers
- Universities
- Research institutes

Hungarian Space Directory 2016 –

comprehensive bilingual catalogue of these actors

http://www.kormany.hu/download/9/1d/d0000/%C5%B0rkatal%C3%B3gus_2016.pdf#!DocumentBrowse

Future plans for optional programmes

After identification and assessment of Hungarian capabilities, the areas of best potential future development and growth:

Earth Observation – EOEP 5

Telecommunications – ARTES (Future preparations, Core competitiveness, IAP)

Human Spaceflight and microgravity studies – E3P SciSpace

Space weather – ESA SSA

Technology development – GSTP (continued)

Conclusions

- Space industry: for benefits of the society and economy;
- Space research, space science for obtaining new knowledge;
- Wide international and sectorial cooperation;
- All commitments and participation of everybody is valuable;
- ESA membership – huge opportunity for Hungary: both for space infrastructure projects and down-stream data application projects;
- Tight cooperation of ESA, EU and member states is key for the global success of European space industry

Thank you for your attention!