Space 4.0 and Space 19+

Poland@ESA

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Content

Short Introduction to ESA

Space 4.0 and Space 19+

Poland at ESA: the Polish success story
A facts and figures

Over 50 years of experience

22 Member States

Eight sites/facilities in Europe, about 2300 staff

5.6 billion Euro budget (2018)

Over 80 satellites successfully designed, tested and operated in flight
A is one of the few space agencies in the world to combine responsibility in nearly all areas of space activity.

Space science is a Mandatory programme, all Member States contribute to according to GNP. All other programmes are Optional, funded ‘a la carte’ by Participating States.
ESA budget for 2018: 5.60 B€

Activities and Programmes

Source: https://www.esa.int/About_Us/Welcome_to_ESA/Funding
ESA’s industrial policy: a gateway to develop national space industry?

About 85% of ESA’s budget is spent on contracts with European industry.

ESA’s industrial policy:

- Ensures that Member States get a **fair return** on their investment;
- Ensures programmes are implemented in a **cost effective** manner;
- Improves world-wide **competitiveness** of European industry;
- Maintains and develops space technology.
The Space 4.0 Era

**Space 1.0**
Astronomy
Since millennia

**Space 2.0**
Space Race
Since 1958

**Space 3.0**
Int. Cooperation
Since Fall of the Wall

**Space 4.0**
Space for Society
Now
Space 4.0: a new era of space

Shift of Paradigms

Change of Motivations

Actors

Contents

Roles

Instruments

• "New Space"
• spin in / spin off
• Participation/ cooperation
• Diversity
• Cooperation/ partnerships with Member States
• Jobs & growth
• Digitalisation
SPACE 4.0

society

politics

science

industry
Main Programmatic Pillars: towards Space 19+

Science and Exploration

Safety and Security

Applications

Enabling and Support (transp., tech, & ops)
Space Safety and Security

exclusively peaceful purposes

in Space
- Debris
- SWE
- Collision avoidance autonomy

from Space
- Maritime
- Food
- QKD
- Disaster Management

Space Safety and Security Applications
- Safety and Security Applications
  - several programmes

Cyber safety/security of all activities

Planetary defence
- Planetary defence
- Debris

SWE
POLAND AT ESA: THE POLISH SUCCESS STORY
Poland at ESA

Poland started cooperating with ESA in 2007 through a “European Cooperating State” agreement and became an ESA Member State in 2012.

From 2012 to 2019, the so-called “Polish Industrial Incentive Scheme” has been running, allowing a smooth integration of Poland at ESA and the preparation of Polish industry to be fully able to compete successfully for ESA contracts.
Developing new capabilities

Polish 2019 Budget in ESA

Mandatory Contribution, including Science programme: 23.3M€
Optional Programmes: 11.3M€

- Earth Observation: 2.69M€
- Space Transportation: 0.8M€
- Human Spaceflight and Exploration: 1.3M€
- Telecommunications and applications: 2.1M€
- Navigation: 0.1M€
- Technology: 1.6M€
- SSA: 1.1M€
- Prodex (Science): 1.5M€

Polish Geo-return was 1.02 at end of 2018
Polish Space Sector Today

More than **350 Polish companies** operating in the **space area**

About **50 companies exclusively** focused on the **space sector**

More than 200 full-time employees working exclusively in activities related to the space sector

The longest **seniority in the sector**, 40 years - Space Research Centre of Polish Academy of Sciences,

Significant **foreign investors**: 1. Airbus Defence & Space (EU)
2. Thales / Alenia (FR / IT)
3. Sener (ES)
4. GMV (ES)
Polish Space industry Strengths and opportunities

Strengths

**Strong technology areas** *(mechanisms, software, ground segment, structures, harness)* across many Polish industrials

**Strong technical knowledge** *(in academia)*

**Strong interest of the Primes to be present** and develop supply chain; TAS and Airbus well engaged, harnesses and structures will provide a sustained return to the country

Opportunities

Clear interest and commitment of primes and tier 1 suppliers.

Green propulsion technologies

Structures and harness for next Science missions
Conclusion

Poland’s integration at ESA is a success story, in all sectors: science, applications, industrial participation. 2019 will see the end of Polish Transition Measures ... and hopefully the successful Space19+ where Poland will be able to contribute in order to sustain and extend its successes at ESA.