50 years of European cooperation in space

Presentation to the
Committee on the Peaceful Uses of Outer Space
Fifty-seventh session
(13 June 2014)

Objectives and motto

- Preparation of the future, based on the experience and expertise of the past
- Partnership with ESA Member States and European Industry
- Providing added value in a highly volatile environment of rapid evolution
- Serving European cooperation for innovation

The Early Days

The collaborative European space effort was officially born 50 years ago. When two leading scientific statesmen, Pierre Auger of France and Edoardo Amaldi of Italy, made the first steps towards establishing a significant European presence in space.

A high-level meeting of scientific and government officials met at CERN, Meyrin, near Geneva, in late 1960, where the Commission to Study the Possibilities for European Collaboration in the Field of Space (COPERS) was approved.

In 1964 both the ESRO and ELDO Conventions entered into force.

The creation of the European Space Agency

Out of the experience that marked the 1960s and the 1970s, the template for a viable collaborative European effort in space science and applications, along with launcher development, was defined.

A new single Organisation came into being in 1975, today's

<u>European Space Agency</u>

Space science was made mandatory and space applications were expanded to include telecommunications, meteorology and navigation.

A "package deal" made possible to embark in two major development programmes: the launcher Ariane (under the leadership of France) and the "post-Apollo" cooperation with NASA with Spacelab (under the leadership of Germany).

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50 years video

What has taken place already 1/3

ESA DG J.-J. Dordain kicked-off of the 50 years anniversary at the occasion of the stone-laying ceremony in ECSAT, Harwell on 5 December 2013 at the presence of UK Minister D.Willets and former ESA DG Roy Gibson.

At the occasion of the 240th ESA Council meeting on 19 March, Johann-Dietrich Wörner, ESA Council Chair, and J.-J. Dordain, ESA DG, launched the celebration of 50 years of European cooperation and its achievements in front of ESA Council Delegations. This was followed on 21 March by a lecture by space historian Prof. Dr John Krige.

An exhibition celebrating 50 years of European cooperation in space was inaugurated at the European Parliament in Brussels on 1 April by Mr Ioannis Tsoukalas, MEP.

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What has taken place already 2/3

The Belgian State Secretary for Scientific Policy, Philippe Courard, and the Luxembourg Vice-Prime Minister and Minister of Economy Etienne Schneider met in ESA Redu with ESA DG Jean-Jacques Dordain to sign a partnership agreement. At this occasion the 50 years anniversary was celebrated.

At the presence of the Vice-Minister for Economic Affairs Grazyna Henclewska, an event was held in Warsaw on 11 April at the local planetarium.
Along the opening of the Polish ESERO and the presentation of business opportunities for Polish companies within ESA, the event was also the occasion to celebrate 50 years of European space cooperation.

What has taken place already 3/3

The ESA-HQ event for active and retired staff, contractors, their families and local partners took place on 7 May at UNESCO. Some 500 guests participated in the event. The programme run through 50 years of space cooperation and provided a lively discussion on future opportunities and challenges. The event was followed by a reception.

Under the theme "Fostering industrial competitiveness, innovation and sustainability through industrial policy in space activities" the first 50 years Highlight event was held in Berlin on 19 May at the presence of French and German State Secretaries and several Heads of Agencies. Over 200 guests from industry, governments, parliaments gathered at the Deutches Historisches Museum to celebrate ESA's successful industrial policy.

ESA as mechanism of international cooperation (1/4)

Origin: two decades after the end of the 2nd World War, political cooperation between European Sates had matured also in the domain of science including space. From ESRO and ELDO in 1964 to a single organisation in 1975: ESA.

Motivation: to seek institutionalised cooperation in space activities, to pool resources to enable space activities.

Purpose: to provide for and to promote, for exclusively peaceful purposes, cooperation among European States in Space research and technology and their space applications.

Four lines of actions:

- by elaborating and implementing a long-term European space policy,
- by elaborating and implementing space activities
- by coordinating the European space programmes and national programmes
- by elaborating and implementing an appropriate industrial policy

ESA as mechanism of international cooperation (2/4)

The mechanism: An Intergovernmental Organisation (IGO) with the ESA convention which is an international treaty.

The organs: the foundation of will and the exercise of assigned competences materialise through an executive organ (the DG assisted by a staff) and a collegial organ (the Council at delegate or ministerial level).

Mandatory activities: set of defined activities to which all ESA Member States are obliged to contribute (basic activities such as education, future projects studies and technology research, scientific programme including satellites and other space systems)

Optional activities: activities decided by some or all ESA Member States based on national and cooperative interests including the design, development, construction, launching, placing into orbit and control of satellites and other space systems, of launch facilities and space transport systems.

ESA as mechanism of international cooperation (3/4)

The results:

- 2200 staff members deployed over its headquarters, establishments and centres in Europe and additional offices and stations around the world in including the European space port in Kourou, French Guiana
- Manages a budget of 4,1 billion € in 2014
- Has developed and in part operated a fleet of more 80 satellites and spacecraft (including contribution to the ISS)
- Has developed 6 types of launchers
- Managed about 60% of all public space spending in Europe,
- Spends about 85% of its budget on contracts with European industry
- Performs activities and programmes in all major space fields, including space science, robotic exploration, Earth observation, navigation, telecommunication, launchers, technology, operations and human spaceflight.
- 80 programmes are executed in parallel
- 400 international agreements with governments, space institutions and IGOs.

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ESA as mechanism of international cooperation (4/4)

Example of space missions:

Exploration missions:

- GIOTTO: performing the first-ever fly-by of a comet in 1986.
- HUYGENS: performing the first soft landing on the surface of a planetary body beyond Mars in 2005.
- ROSETTA: tasked to deploy the first ever landing unit on a comet later in 2014.

Earth Observation missions:

- One of the world's leading programmes with state-of-the-art Earth science and applications missions including the Earth Explorers as well as the Sentinel fleet of satellite "families" to be deployed as of 2014 (Sentinel-1A launched in April 2014).

ESA's long-term involvement in establishing the first permanently inhabited, international outpost in Earth orbit – the ISS.

MANY OF THESE ACHIEVEMENTS ARE NOT SUCCESSES OF ESA ALONE

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ESA as actor of international cooperation (1/4)

These achievements are equally owed to partners around the world who contributed with their knowledge, experience, technical capacities, financial resources, space and ground infrastructure or political support.

ESA is not only a mechanism but also an actor of international cooperation.

Article XIV of the ESA convention empowers ESA to cooperate with

- Other institutional organisations and institutions,

- With governments, organisations and institutions of non-member States,

Such cooperation may take the form of participation in mandatory scientific programme or in optional programmes based on a common, solid political mandate from ALL ESA Member States.

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ESA as actor of international cooperation (2/4)

By 2014, more than 60 States have national space programmes.

International cooperation by ESA with non-member States is not only a strategic consideration but a necessity and includes:

- **Securing** ESA participation in resource-intensive and complex programmes important for the European space sector (ISS) and securing operational support to ESA missions (through ground stations located outside ESA Member States' territory)
- **Leveraging** ESA resources;
- **Optimising** data access and mission exploitation;
- **Serving** global objectives (space data and services provision to developing countries).

ESA as actor of international cooperation (3/4)

With non-member States in Europe: participating or not to the "European Cooperating States" – ECS – programme, a scheme to prepare candidate States for an accession to ESA convention.

With non-Member States outside Europe: USA, Russia, China, Canada, Japan, India, Australia but also in Mediterranean, Asia-Pacific, Latin-America and Africa regions.

With international organisations: the European Union through the "Framework Agreement between the European Space Agency and the European Community" an international treaty signed in 2003 (Galileo and Copernicus are the two EU "flagship programmes" of cooperation for which ESA provides technical and procurement capabilities indispensable for the EU to carry out a space programme), Eumetsat (the relation between ESA and Eumetsat is covered by a series of programme-related agreements for the development by ESA, of new meteorological missions and their handover, after launch, to Eumetsat for their exploitation), Eutelsat, etc.

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ESA as actor of international cooperation (4/4)

With United Nations Organisation and related organisation: ITU, FAO, WMO, UNESCO, secretariat of the UN Conventions (such as UNFCCC, UNCCD), UNOOSA (ESA is a permanent observer of the COPUOS since 1975).

As partner in international regional or global initiatives: CEOS (ESA is a founding member of this international coordination mechanism, the "Committee on Earth Observation Satellites"), International Charter on Space and Major Disasters (a cooperation mechanism between owners and operators of Earth observation mission to allow for rapid access to satellite data in the event of natural disasters),TIGER (initiated following the World Summit of Sustainable Development in Johannesburg in 2002 to assist African partners in the collection, analysis and use of water related geo-information for improved integrated water resources management: an international collaborative effort which has assisted more than 100 African waters authorities and research institutes in 42 states), DRAGON (a cooperation between ESA and the People Republic of China exploiting Earth observation data for science and applications) and other cooperative initiatives in the fields of Space debris mitigation, space system standards.

Conclusion

ESA has been standing for since its inception as mechanism and actor of:

- Regional cooperation
- Peaceful uses of Outer Space
- International cooperation
- Sustainable development

ESA has been a flexible mechanism, an innovative actor and a reliable cooperation partner in the exploration and use of outer space for half a century. The ESA Convention has proven to be a robust basis for enabling the functioning of this multilateral mechanism comprising meanwhile twenty European States, and growing.

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