



Committee on the Peaceful Uses of Outer Space Sixty-sixth session
Vienna, 31 May–9 June 2023



Luigi Broglio – Malindi Space Centre International Cooperation, Past, present and future Activities

Munzer Jahjah, Italian Space Agency, 06//06/23

SDGs and Luigi Broglio – Malindi Space Centre



The SDGs provide the high-priority challenges for our generation in different areas. Space activities and programs at BSC is playing a role to pursue the SDGs.

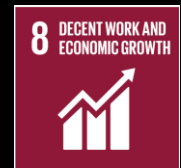
Working on different target and indicators (relate to environmental factors, investment in research and education), where in each of these areas space technology can play a role as part of national strategies to both monitor progress toward the SDGs and to work toward achieving the Targets

International cooperation Italy-Kenya

Italy and Kenya have a long history of cooperation in the field of space activities, started in the early Sixties with the establishment of the San Marco project Equatorial Range in Malindi (today has taken the name Luigi Broglio-Malindi Space Centre in honour of its founding father

in 1964, after the first launch of an Italian satellite from Wallops Island, the second Italian satellite, the San Marco-2, was launched in 1967 from the S. Marco platform -Malindi, Kenya (17 launches, up to 1988).

The center is composed by two segments, **Ground segment** (35.00 sqm) equipped with scientific and technical services (antennas for in-orbit control (satellites/launchers) and scientific data acquisition), and **Sea segment** (5 platforms); **200 local employees.**



International cooperation Italy-Kenya

The Italian presence at the BSC regulated by

The first Intergovernmental Agreement between Italy and Kenya dates back to 10 January 1964, followed by a second agreement in 1987 and a third agreement in 1995.

The latest agreement was signed on 24 October 2016, ratified by the Italian Parliament on 25 November 2019 and by the Parliament of Kenya on 15 October 2020, entered into force on 16 December 2020, for a duration of 15 years.

The Agreement foresees the **Joint Management** of the base between Italy (Italian Space Agency) and Kenya (Kenya Space Agency)

International cooperation Italy-Kenya

The Italian presence at the BSC regulated by

The first Intergovernmental Agreement between Italy and Kenya dates back to 10 January 1964, followed by a second agreement in 1987 and a third agreement in 1995.

The latest agreement was signed on 24 October 2016, ratified by the Italian Parliament on 25 November 2019 and by the Parliament of Kenya on 15 October 2020, entered into force on 16 December 2020, for a duration of 15 years.

The Agreement foreseen the **Joint Management** of the base between Italy (Italian Space Agency) and Kenya (Kenya Space Agency)

5 Implement Arrangements

- ✓ Creation of Regional Centre for Earth Observation
- ✓ Access to Earth Observation And Space Science Data
- ✓ Education and Training
- ✓ Support to Kenya Space Agency
- ✓ Telemedicine

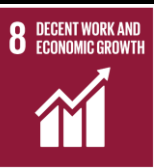


International cooperation Italy-Kenya

13 February 2018, Kenya

second edition of the International Space Forum - The African Chapter -, organised by **ASI**, in collaboration with **IAF** and **KSA**.

30 African countries participated adopted the Final Declaration (Nairobi Page), to promote regional cooperation, to involve all African universities in space programmes and activities, and to enhance the existing centres and facilities on African territory, such as the Luigi Broglio Space Center in Malindi.



Satellite Operation Support-1

Collaboration with different international organization:
NASA, ESA (ESOC, CNES), CLTC, Ksat

Past supports

- ✓ Arianespace launchers (AR4),
- ✓ Commercial LEOP (ex. Ksat/ASNARO)
- ✓ PRC human flight program (SZ, TG1/TG2)
- ✓ ESA LEOP (MSG, LPF, ExoMars, Bepicolombo, JWST, MTG)
- ✓ Scientific missions: ASI-NASA Swift (2004) NuStar (2011);
ASI AGILE mission (2007);
- ✓ CONAE SAOCOM -1A
- ✓ hosting of ESA CFI (Antenna and GESS - Galileo
Experimental Sensor Station (2006)



Satellite Operation Support-2

Collaboration with different international organization:
NASA, ESA (ESOC, CNES), CONAI, SpaceX

On going supports

- ✓ Arianespace launchers (AR5, VG)
- ✓ Space X launchers (Crew Dragon, Falcon9)
- ✓ ESA LEOP (ex. EUCLID)
- ✓ Scientific missions: ASI-NASA Swift (2004) NuStar (2011) **IXPE (2022)**; ASI AGILE mission (2007);
- ✓ CONAE SAOCOM -1A, 1B
- ✓ hosting of ESA CFI (Antenna and GESS - Galileo Experimental Sensor Station (2006)



Research activities-1

○ EQUO (EQUatorial Observatory-space debris detection)



○ SBAM (Space Based Agriculture Monitoring)



○ OSL (OSL - OUTER SPACE LAW FOR INTERNATIONAL COOPERATION AND SUSTAINABLE DEVELOPMENT)



Research activities-2 (Cubesat)



Agenzia Spaziale Italiana

- 1KUNS-PF (selected by JAXA and UNOOSA - launched by the Japanese Kibo module in the ISS, as part of the KiboCUBE program.) – 2016
- 1KUNS 2-BARIDI SANA (scientific Experiment - 1st AO for Space Experiments on board the Chinese Space Station (CSS). The project was selected for the flight to the CSS, within the framework of the call: United Nations/China cooperation on the utilization of the CSS.
- 1KUNS3-SIMBA (Win a Free Launch on the 1st Commercial Mission of GK Launch Services, promoted jointly by the IAF and GK company) - 2021.



On going/future activities

- Creation of the Regional Centre for Earth Observation
- Data Access (implementation of a system for processing, distributing, analysing and testing products and services based on satellite images to support the monitoring of indicators for the Sustainable Development Goals (SDGs))
- Creation of International School for Space Education
- Telemedicine (standby waiting Kenya key priorities)



Education and Training

from 9 to 13 December 2019

the first space training course for African students (13 countries) entitled Earth Observation and Remote Sensing, Space Science, Law and Policy.

The course, organised by **ASI** and sponsored by the **UNOOSA**, has been realised in collaboration with **KSA** and the **Sapienza University of Rome**, with a perspective to the creation of a future permanent Space Training School in Africa for Africa.

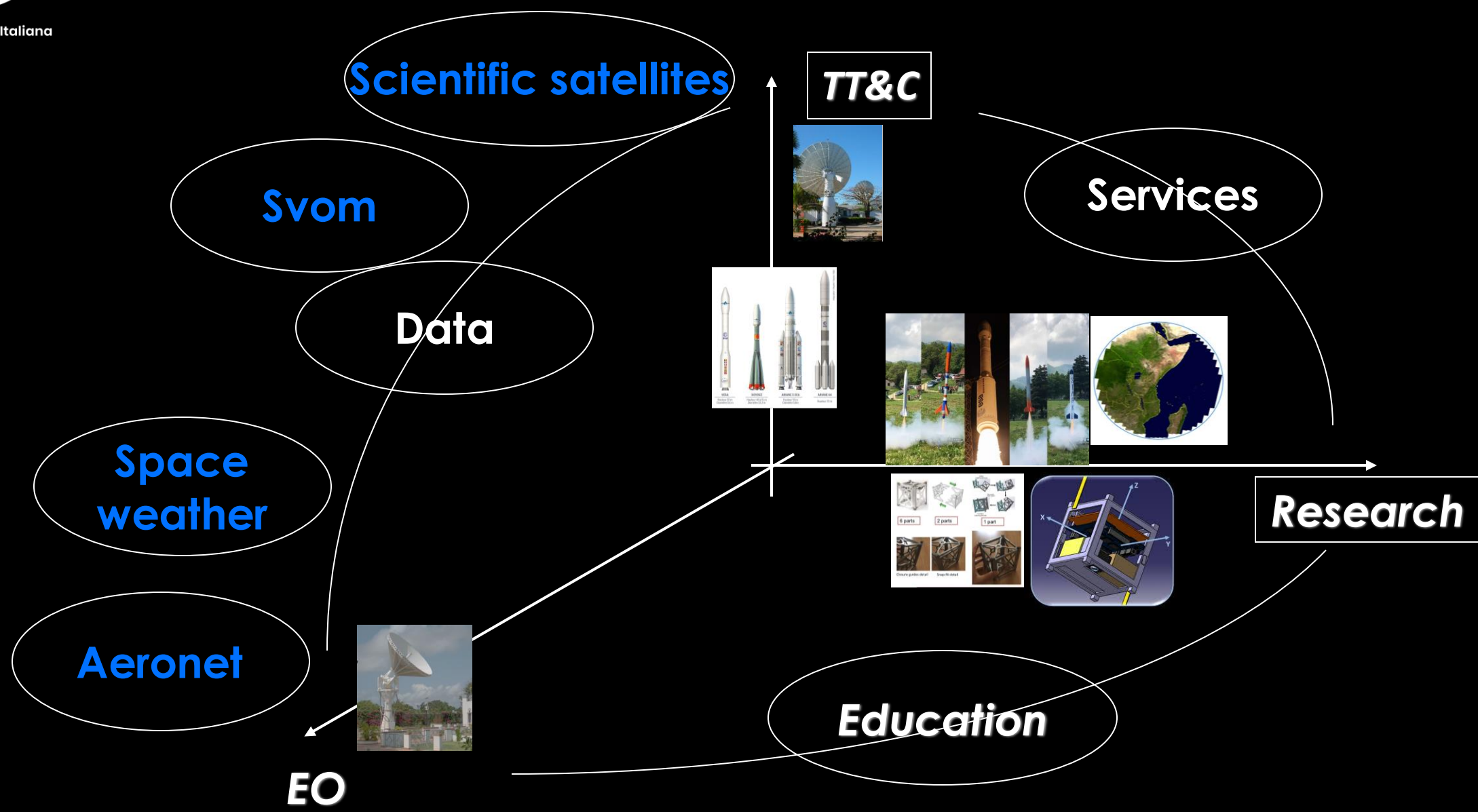


Education and Training

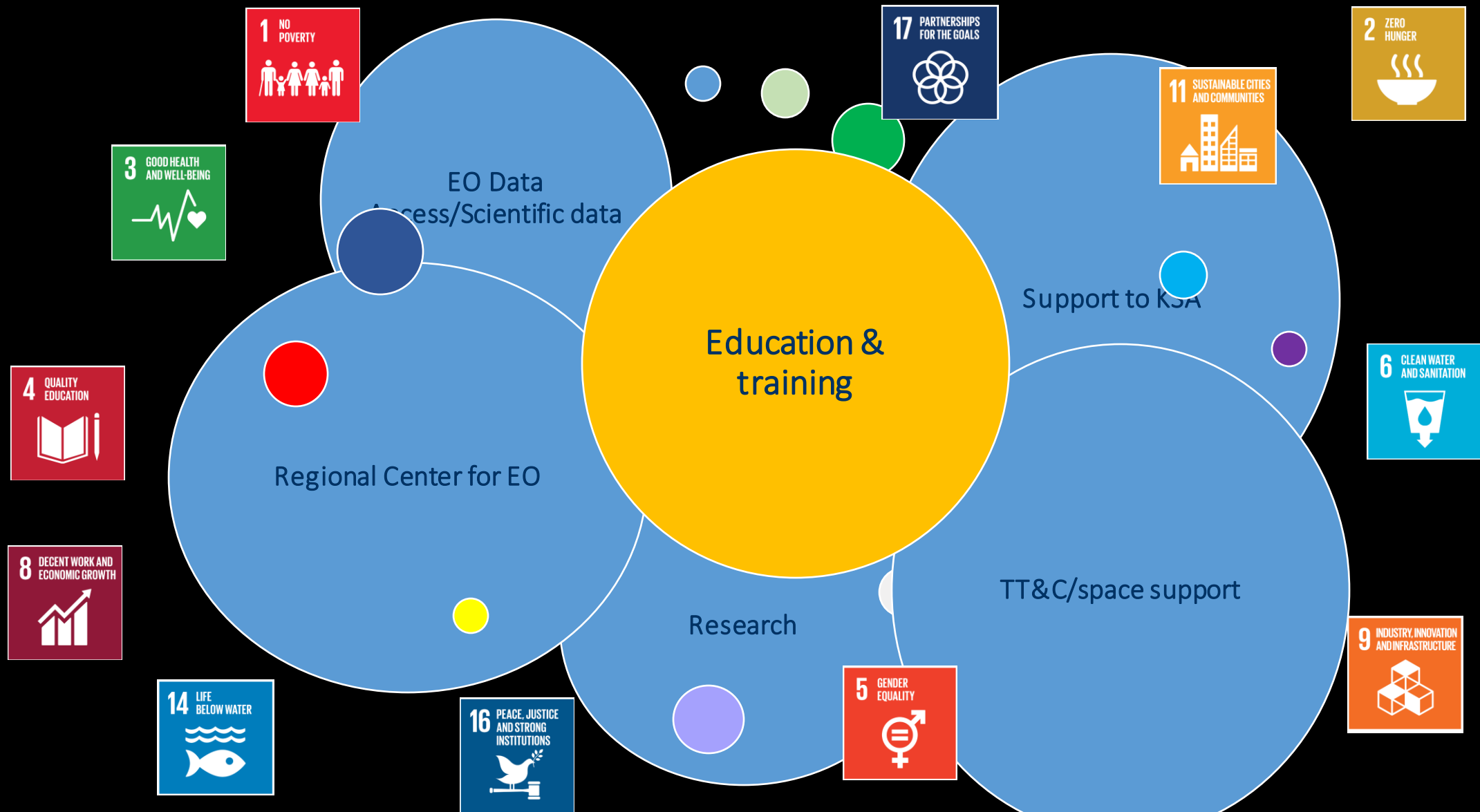
- Master Space Science (3° edizione)
- Copernicus program (WG Africa – Copernicus & Training for Trainers in Africa): key data on land, marine and atmospheric environments, enabling emergency management in case of disasters and climate change monitoring.
- 15 scholarships/year
- October 2023, the following courses (Building Capacity)
 - 1- Space weather science workshop (UNOOSA, ASI, INGV, ICTP, KSA)
 - 2- Quality/Product assurance and Cubsat technology
 - 3- Remote sensing data exploitation



Activities at BSC



Activities at BSC



CONCLUSION

- the only multidisciplinary space centre in the East-Central Africa area);
- Sustainability in Space is a strategic topic for BSC Malindi, Space activities at BSC played /are playing an important role to ensure sustainability on Earth:
 - ✓ Education and training programs,
 - ✓ contributing to monitoring and safeguarding the space environment (Space Debris),
 - ✓ Earth observation programs including Cubsat.
- Willing to present new space activities/technologies that enable progress and drive cooperation and partnership in the field of space.