United Nations / Germany International Conference on International Cooperation for Low Emission and Resilient Societies

Bonn, Germany
22 November 2017

The UNISPACE+50 process and the Space 2030 Agenda

Luc St-Pierre
Chief, Space Applications Section
Roles of UNOOSA

**CAPACITY-BUILDER:** UNOOSA brings the benefits of space to humankind by building space capacity of non-space-faring countries.

**GLOBAL FACILITATOR:** UNOOSA plays a leading and facilitating role in the promotion of the peaceful uses of outer space.

**GATEWAY TO SPACE:** UNOOSA is the main UN agency on space matters and facilitates the coordination of UN activities using space-related technology to improve the human condition globally.
Space yesterday

• **Moving Frontier** – improving technology and its impact

• **Need for governance**
  • 5 Treaties and 5 Principles
  • 50 Years of the Outer Space Treaty

• **Call for trust and cooperation**

• **Interlinkages** – cross-sectoral impact as applicability of space technologies has been broadening

• **Dependency** – space offers critical infrastructure and we have become more and more dependent on it
Space today

• Impact on society, economy, security...

• Total **global space value** – $330 Billion
  • Government = $76 Billion (24 %)
  • Commercial = $253 Billion (76 %)

• **Vulnerability** of technology

• Space **workforce**

• Number of **publications** has almost doubled since 1990s

• Connecting the world

**Space is a “global commons”:** The advancements of space technology benefit all member states of the UN in one way or another.
Space in the future

- The future of the safety, security and sustainability of outer space activities
- Stronger bonds between states and private sector
- Cooperative missions in LEO and beyond
- Increasing number of space technology users
- Space workforce on rise
- Broader socio-economic benefits from space
- Climate change mitigation and risk reduction
- Capacity-building and learning rather than starting from zero
UNISPACE+50 Process

Governance
Capacity-building
Resiliency
Interoperability
Space for sustainable development

UNISPACE+50

Thematic Priorities

Space Economy
Space Society
Space Accessibility
Space Diplomacy

Partnership
People
Planet
Prosperity
Peace
Space and SDGs

All countries and all stakeholders act in **collaborative partnership to implement the 2030 Agenda** for Sustainable Development.

**UNOOSA** is currently developing new approaches to address the targets enshrined in the SDGs.

**One joint vision** has to be employed to protect space as a limited resource for the benefit of humankind.
The Past of the UNISPACE+50 Process

There are **5 cross-cutting areas** as defined by COPUOS and its Subcommittees that serve as a base for the 7 thematic priorities of UNISPACE+50:

- **Governance**: UN treaties and principles on outer space, COPUOS guidelines, GA resolutions on outer space
- **Capacity-building**: The use of space science and technology and their applications for the benefit of all countries
- **Resiliency**: Disaster risk reduction, near-Earth objects, space weather
- **Interoperability**: Including the International Committee on Global Navigation Satellite Systems (ICG) and other current and new coordination mechanisms, such as IAWN, SMPAG
- **Space for sustainable development**: Efforts by the Committee and its member States as well as UNOOSA to meet the 2030 Agenda for Sustainable Development
The Present of the UNISPACE+50 Process

Today, there is a revolution in space, the beginning of a new era in space (new stakeholders, renovated interest for space, private sector involvement)

UNISPACE+50 will be an unprecedented event during the 61st Session of COPUOS (June 2018), 50 years after UNISPACE I, a milestone to steer and strengthen the Committee’s mandates to address current challenges and opportunities.
thematic priority 1
*Global partnership in space exploration and innovation*

thematic priority 2
*Legal regime of outer space and global space governance: current and future perspectives*

thematic priority 3
*Enhanced information exchange on space objects and events*

thematic priority 4
*International framework for space weather services*

thematic priority 5
*Strengthened space cooperation for global health*

thematic priority 6
*International cooperation towards low-emission and resilient societies*

thematic priority 7
*Capacity-building for the 21st Century*
Focus on thematic priority 4: *International framework for space weather services*

Objectives:

- **Strengthen the reliability** of space systems and their ability to respond to the impact of adverse space weather
- **Develop a space weather road map for international coordination and information exchange** on space weather events and their mitigation
- **Recognize space weather as a global challenge**
- **Increase awareness** through developed communication, capacity-building and outreach
- **Identify governance and cooperation mechanisms** to support this objective

**TIMELINE**

2017: Creation of a user platform to identify user requirements and promote synergies
2018: Creation of international coordination mechanisms of operational space weather services

Source: NASA
Focus on thematic priority 5: *Strengthened space cooperation for global health*

**Objectives:**

- **Improve the use** of space technologies and space-based information and systems in the global health domain.
- **Promote enhanced cooperation and sharing of information**
- **Enhance capability in integrating health data** in disaster management plans.
- **Strengthen capacity-building** in advancing space technologies in global health efforts.
- **Identify governance and cooperation mechanisms** to support this objective.

**TIMELINE**

2018: Compilation of practices and initiatives, current or planned
From 2018: Maintenance of an active community of practice
From 2019: Delivery of national and regional training programmes
Focus on thematic priority 6: *International cooperation towards low-emission and resilient societies*

**Objectives:**

- **Define synergies** between climate change mitigation efforts, disaster risk reduction and global development.
- **Provide requirements to new developers** for coverage in geographical areas not sufficiently monitored or applications that need further development.
- **Improve integrated space applications approaches** and the **interoperability** of space-based systems and ground/in situ systems.

**UN-SPIDER** has been providing direct support to developing countries in accessing and using Earth observation data in preparing for and responding to disasters.

**Activity**

*United Nations/Germany International Conference on International Cooperation Towards Low-Emission and Resilient Societies*

**TIMELINE**

- **2018**: Roadmap for enhanced resiliency
- **2020**: Strategy for an international coordination of constellation of constellations supporting 2030 Agenda
Focus on thematic priority 7: *Capacity-building for the 21st Century*

**Objectives:**

- **Define new innovative and effective approaches** to overall capacity-building and development needs as a fundamental pillar of global space governance.

- **Strengthen comprehensive capacity-building** and outreach activities of the Office for Outer Space Affairs.

- **Develop infrastructure** for cross-sectoral and integrated applications, with combined scientific, technical, legal and policy outputs.

- **Enhance existing partnerships and forge new ones**

  - **Promote efforts to encourage STEM education**, especially for women in developing countries.

**TIMELINE**

2017: Upgrade capacity-building strategy; UN/Austria flagship Symposium on TP7

2018: Strategy to be presented to MS; Space for Women project to be initiated, OpenUniverse to be initiated

2020: Consolidated engagement with tertiary education institutions; strengthen network of regional centres
The Future of UNISPACE+50 Process

Development of space-derived economic benefits.

Evolution of society and societal benefits stemming from space-related activities.

All communities using and benefiting from space technologies.

Building partnerships and strengthening international cooperation in space activities.

Focus on the UN frameworks: The 2030 Agenda for Sustainable Development, The Sendai Framework on Disaster Risk Reduction 2015-2030 and the Paris Agreement on climate change.
Space 2030 agenda and its strategic objectives

- The outcome of UNISPACE+50 process and its thematic priorities will form, at the UNISPACE+50 in 2018, a dedicated General Assembly resolution.

- The Space2030 agenda for strengthened cooperation and governance of outer space activities and their contribution in addressing overarching, long-term development concerns will be an output of UNISPACE+50.

- The strategic objectives of Space2030 agenda, based on the objectives and results of work under UNISPACE+50 thematic priorities as well as targeted inputs from other related activities and workshops in the lead-up to UNISPACE+50, will be presented under the four pillars of Space Economy, Space Society, Space Accessibility and Space Diplomacy.
The Way Forward on Space2030

Space2030 is a **unique agenda** combining global governance of outer space activities, space science, technology, policy, and law.

In line with SGs overall **reform agenda & its tree pillars** – peace and security, development, and human rights.

**Strengthen UN inter-governmental platforms** to contribute to achievement of SDGs and other goals and targets enshrined in the international frameworks.

**Reduce ‘Space divide’** - Partnership to provide countries with space capabilities and enhance their opportunities to access space.

**Build stronger partnership and coordination** in the peaceful uses of outer space at all levels – demonstrate space as a contributor to the well being of people.
The Way Forward on Space2030

- **Stronger cooperation in global partnerships**
  - Stronger engagement with private sector, as mandated by COPUOS
  - Identify the **specific needs countries have** and attempt to close the existing gaps between countries
  - Improve cost-effectiveness of the process
  - Support and coordinate programmes which **focus on emerging space nations and those with limited space capabilities**
  - Introduce exchange programme aimed at capacity-building
  - Strengthen the role of Regional Centres for Space Science and Technology Education
- **Establish global compact for Space** to involve more sector entities
Global Space Partnership for Sustainable Development Goals
for the coordination of

the development, operation, utilization

of space-related

infrastructure, data, information, services

for the 2030 Agenda for Sustainable Development
The Global Partnership can:

- Establish a **direct link** between Space and SDGs implementation through one authoritative organization
- Identify **countries’ needs** and foster the **availability** of Space Systems capacity to meet them; a critical gap not currently addressed at the right level
- Coordinate and complement the ongoing supporting actions at different levels thus improving the cost effectiveness of the global process
Areas of Action

- At the **policy level**, where space assets are recognized as key components for SDGs implementation

- At **coordination and planning level**, active participation to all fora, committees, working groups and processes dealing with space assets contribution to SDGs, making sure that suitable actions are agreed and put in place for their actual use

- At **implementation level**, delivering the outputs coming from its core processes, improve/complement mechanisms already in place, identify and foster implementation of new ones, coordinate capacity building actions and recommend gap-closure actions.
Facilitate access to data and services

Facilitate country access to flight opportunities and associated technologies

Participate and bring the space community views into policy discussions

Coordinate capacity building; define and oversee specific actions

Programme coordination

Reporting

Support to countries
With organizations active in similar processes that foresee the full involvement of end-users (countries) and that are linked to the SDG implementation and monitoring processes. Such as, *inter alia*:

- All UN-supported resolutions (SDGs, Sendai, ..),
- all UN Conventions (UNFCCC, UNCCD, UNCBD,..);
- UN Organizations, programmes, specialized agencies and initiatives, such as FAO, UNEP, UNDP, WMO, WHO, UN-HABITAT, UN-GGIM ...
- ITU, GEO, CEOS (already proposed Partners)
- GFCS (Global Framework for Climate services)

**Deliverables**

A report (every two years?) identifying a global set of “Space Assets user needs” in support of SDGs achievement constituting the technical/programmatic reference to obtain commitments from:

- Space Assets providers
- for countries and organizations to identify/fill gaps
The process will build on and will include ongoing processes aiming (partially or totally) at the same objectives, such as:

- CEOS, CGMS, ICG, ITU
- ITSO (International Telecommunications Satellite Organization)
- Working Group on the Long term Sustainability of Outer Space Activities (COPUOS/TSC)
- Other major public and private space systems developers and operators

**Deliverables**

A periodic consultation mechanism with major agencies/actors active in each domain, culminating in a yearly forum; and

A yearly report highlighting the situation in terms of:

- gaps in the availability of systems/data/services and threats to ensure their continuity;
- Accomplishments;
- recommended actions
- open issues
Building on existing initiatives

- UN Sustainable Development Solutions Network (SDSN)
- Global Partnership for Sustainable Development Data (GPSDD)
- Africa Space Policy and Strategy
- UN-SPIDER
- UNOOSA DigitalGlobe Agreement
- UN Committee of Experts on Global Geospatial Information Management (UN-GGIM)
- UNEP Live
- UNITAR/UNOSAT Programme
- Group on Earth Observations (GEO)
- BRICS Remote Sensing Satellite Constellation
- UNOOSA/CNSA MoU on Earth Observation Satellite Data
- International Charter Space and Major Disasters
- Committee on Earth Observation Satellites (CEOS)
- Coordination Group for Meteorological Satellites (CGMS)
- Radiant (formerly OIN - Open Imagery Network)
- International Telecommunications Satellite Organization (ITSO)
- Telecommunications Industry Association
- Emergency Telecommunications Cluster
- Smart Sustainable Development Model Initiative (SSDM, led by ITU)
- International Committee on Global Navigation Satellite System (ICG)
- UNOOSA/UNDP Cooperation Agreement (in process)
Building on existing initiatives

Facilitate access to data and services

Facilitate Country access to flight opportunities and associated technologies

Participate and bring the space community views into policy discussions

Coordinate Capacity Building; define and oversee specific actions

UNOOSA initiatives as a starting point:

- ZGIP clinostat microgravity plant growth experiment
- DropTower Experiment Series (DropTES)
- KiboCube small satellite programme with JAXA
- UNOOSA/Sierra Nevada Corporation
- UNOOSA/CMSA on the use of China’s manned space station and use of India space infrastructure under discussion
- Small Satellite Manufacturing Facility at MIHAN- Maharashtra (CANEUS)
Building on existing initiatives

- Facilitate access to data and services
- Facilitate Country access to flight opportunities and associated technologies
- Participate and bring the space community views into policy discussions
- Coordinate Capacity Building; define and oversee specific actions

- SDG Implementation process
- Africa space policy and strategy
- Peaceful use of outer space led by COPUOS/UNOOSA and UNISPACE+50 in 2018
- Management of the RF spectrum (led by ITU)
- Data access policies, to progressively remove existing barriers
- UN Conventions, by regularly reporting to the different COPs and to provide authoritative advice on the benefits stemming from the use of Space assets
Building on existing initiatives

- Facilitate access to data and services
- Facilitate Country access to flight opportunities and associated technologies
- Participate and bring the space community views into policy discussions
- Coordinate Capacity Building; define and oversee specific actions

- UN-SPIDER training courses/Technical Advisory Missions/Workshops
- Space Applications Programme
- Space curricula (space law and GNSS)
- Regional Centres for Space Science and Technology Education (affiliated to the United Nations)
- Fellowships on GNSS, Nano-satellite Technologies
- Center of Excellence on Space Sciences & Technologies for Development at Andhra Pradesh (CANEUS)
- UNITAR/UNOSAT initiatives
- ……
Reporting and country support

Programme coordination

- Reporting
  - Feedback

- Support to Countries
  - (Mainly provided by individual Partners)

the SDG process

Partners

COPUOS (Member States)

General Assembly

- Actual access to space assets
- Establishment of Capacity Building network
- Space Development Profile
- Space solutions Compendium
- Direct Support/advice on SDGs national implementation planning and on specific technical matters
Tools for Result Based Management

Space for Development Profile
assessing and monitoring space capabilities in a country

Space Solutions Compendium
Providing adapted and timely solutions

Monitor
Act
**Space for Development Profile**

Key Purpose

- Supports the identification of targeted activities at country level by identifying gaps/opportunities in space application domains; it identifies changes over time;
- On a global level it can provide an aggregated view of general gaps and can be used as a reporting tool at global/UNOOSA level;
- Decision support tool for Member States and UNOOSA;
- It is connected to SDGs.
Space Solutions Compendium
Key Purpose

- Solutions that can be linked to indicators.
- MODULAR: any partner can propose solutions. Solutions need to be linked to an indicator (actually solutions could also propose a way of measuring the impact as impacts need to be measured)
Capacity Building Network
ToR

- Network of universities, institutes, NGOs
- Commitment by members to implement a capacity building activity (fellowship programme, training course, event, ...) that supports Space2030
- The 2030 Agenda for Sustainable Development and the Space for Development Profile shall be guiding frameworks for the expected contributions of the CBN Members
- Members will report on the implementation and outcomes
- Membership is limited to a defined time period and automatically ends when the entity is no longer engaged in a relevant activity
- Members can present themselves as part of the “Capacity Building Network in support of the United Nations Office for Outer Space Affairs”
- UNOOSA will submit an annual report on the achievements of the CBN
- The CBN can be kick-started with a “Call for proposals”
- UNOOSA will provide no direct financial support to any of the CBN members
Global Compact for Space
Gate to the Global Partnership for SDGs

Core processes

Facilitate access to data and services
Facilitate country access to flight opportunities and associated technologies
Participate and bring the space community views into policy discussions
Coordinate capacity building; define and oversee specific actions

Space for Development Profile
assessing and monitoring space capabilities in a country

Capacity Building Network
Coordination of CB Partnerships

Space Solutions Compendium
Providing adapted and timely solutions