



UNITED NATIONS
Office for Outer Space Affairs

The United Nations and Outer Space

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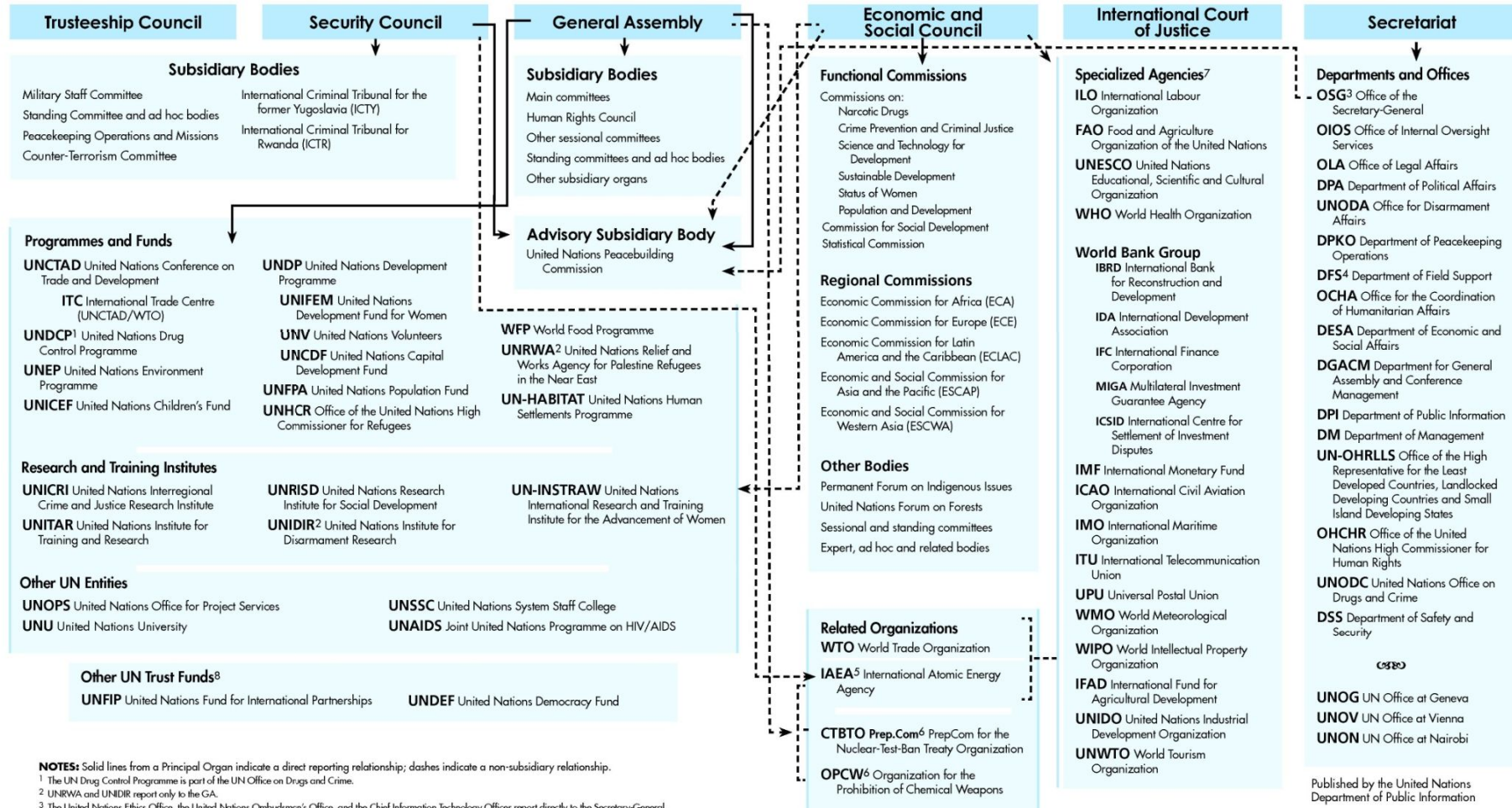


“ Space is helping us to address some of today’s most urgent problems. Space technology has produced tools that are transforming weather forecasting, environmental protection, humanitarian assistance, education, medicine, agriculture and a wide range of other activities.”

Former United Nations Secretary-General Kofi Annan, on the occasion of the
World Space Week, 2001



The United Nations System



NOTES: Solid lines from a Principal Organ indicate a direct reporting relationship; dashes indicate a non-subsidiary relationship.

¹ The UN Drug Control Programme is part of the UN Office on Drugs and Crime.

² UNRWA and UNIDIR report only to the GA.

³ The United Nations Ethics Office, the United Nations Ombudsman's Office, and the Chief Information Technology Officer report directly to the Secretary-General.

⁴ In an exceptional arrangement, the Under-Secretary-General for Field Support reports directly to the Under-Secretary-General for Peacekeeping Operations.

⁵ IAEA reports to the Security Council and the General Assembly (GA).

⁶ The CTBTO Prep.Com and OPCW report to the GA.

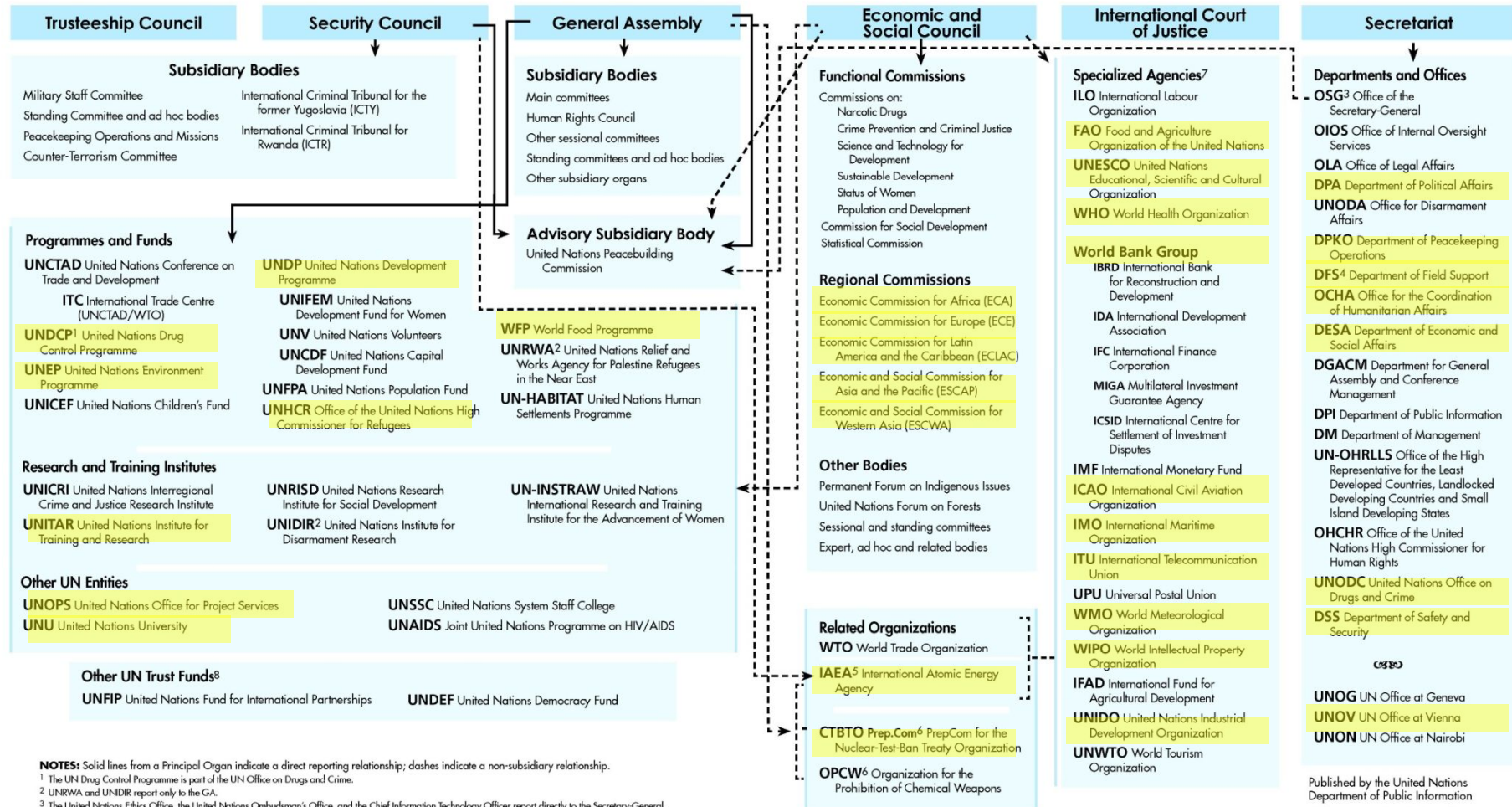
⁷ Specialized agencies are autonomous organizations working with the UN and each other through the coordinating machinery of the ECOSOC at the intergovernmental level, and through the Chief Executives Board for coordination (CEB) at the inter-secretariat level.

⁸ UNFIP is an autonomous trust fund operating under the leadership of the United Nations Deputy Secretary-General. UNDEF's advisory board recommends funding proposals for approval by the Secretary-General.



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Space and the United Nations System



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UN and Outer Space: Early Years

- 1958: Resolution by the UN General Assembly 1348(XIII):
 - Outer space to be used for peaceful purposes only and to be exploited to the benefit of mankind
 - Established an ad-hoc Committee on the Peaceful Uses of Outer Space (COPUOS) as an appropriate body for international cooperation



UN and Outer Space: Early Years

- 1959: UN General Assembly resolution 1472 (XIV) reaffirmed the role of COPUOS and mandated the Committee to:
 - Review international co-operation
 - Study space-related activities that could be undertaken under United Nations auspices
 - Encourage and assist with national space research programmes
 - Study legal problems which may arise from the exploration of outer space;



Committee on the Peaceful Uses of Outer Space

- 1961: Establishment of two Subcommittees
 - Scientific and Technical Subcommittee (STSC)
 - Legal Subcommittee (LSC)
- Membership to date: 74 member States and 32 organizations with permanent observer status
- Reports to the Fourth Committee of the General Assembly
- Adopts an annual resolution on “International cooperation in the peaceful uses of outer space”





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Office for Outer Space Affairs

United Nations Office at Vienna, Austria

www.unoosa.org



Office for Outer Space Affairs

- Originated as a small expert unit in the UN Secretariat to service the meeting of the Committee for the Peaceful Uses of Outer Space
- Can be traced to the report of the 1st meeting of the Ad Hoc COPUOS:
“there was a need for a suitable centre related to the United Nations that can act as a focal point for international co-operation in the peaceful uses of outer space”, and
“the General Assembly may wish to request the Secretary-General to organize a small unit within the Secretariat for this purpose” (A/4141)
- Evolved into a unit within the Department of Political and Security Council Affairs in 1962
- Based in Vienna since 1992



UNOOSA



27 staff members from 21 countries: Austria, Azerbaijan, Canada, China, Costa Rica, Finland, Germany, Guatemala, India, Italy, Japan, Malaysia, Romania, Russian Federation, Slovenia, South Africa, Sweden, Turkey, Ukraine, United Kingdom and Uzbekistan.

Areas of expertise: Aerospace Engineering, Astrophysics, International Law, International Relations, Physics, Remote Sensing, Satellite Communications, Space Law & Policy



UNITED NATIONS
Office for Outer Space Affairs

Vision

Bringing the benefits of space to humankind

Mission Statement

***The core business of the Office is to promote international cooperation
in the use of outer space to achieve development goals
for the benefit of humankind***

Bringing the benefits of space to humankind



UNOOSA Operational priorities

A. SPACE AND DIPLOMACY: Strengthening the intergovernmental process

B. SPACE AND LAW: Discharging the responsibilities of the Secretary-General under the treaties

C. SPACE AND DEVELOPMENT:

Securing global public goods:

- Global platform for space-based information for disaster management and emergency response
- Global navigation satellite systems

Support to regional mechanisms

Capacity-building in utilizing space-based solutions in developing countries

E. DELIVERING AS ONE: Enhancing cooperation and coordination within the UN system

F. CELEBRATING SPACE: Increasing public awareness of space



SPACE AND DIPLOMACY

-UNOOSA is the Secretariat to the only Committee of the General Assembly that deals with international cooperation **in the peaceful uses of outer space**. COPUOS serves as a unique platform for maintaining outer space for peaceful purposes at the international level.

- UNOOSA organized three major United Nations conferences on the exploration and peaceful uses of outer space, all held in Vienna in 1968, 1982 and 1999 (**UNISPACE**)



- The third conference (UNISPACE III) outlined a wide variety of actions to:
 - ▶Protect the global environment and manage natural resources;
 - ▶Increase the use of space applications for human security, development and welfare;
 - ▶Protect the space environment;
 - ▶ Increase developing countries' access to space science and its benefits;
 - ▶ Enhance training and educational opportunities, especially for young people.



Highlights and main results of COPUOS and its two Subcommittees

Recent achievements

- Establishment of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), (2006)
- Establishment of the International Committee on Global Navigation Satellite Systems (ICG) (2006)
- Space Debris Mitigation Guidelines (2007)
- GA Resolution on enhancing the practice of States and international intergovernmental organizations in registering space objects (2007)
- Safety Framework for the Use of Nuclear Power Sources in Outer Space (2009)

Current issues - Space Agenda Today:

Space applications for developing nations
Space debris
Long-term sustainability of space activities
Near-Earth objects
Space and climate change
National space legislation
Definition and delimitation of outer space
Use of Geospatial Data for Sustainable Development



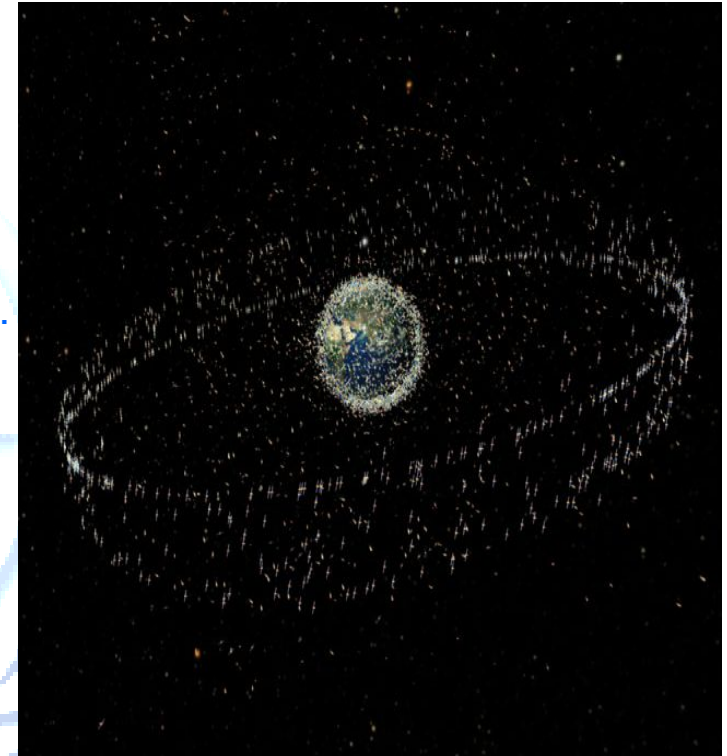
SPACE AGENDA TODAY

■ GREENING SPACE:

Mitigating Space Debris

- ▶ Space debris includes defunct satellites, discarded sections of rockets and parts of satellites that have exploded. Most numerous of all are tiny particles such as paint chips and liquid droplets.
- ▶ Space debris orbits the Earth at incredibly high speeds, normally several kilometres per second, making even small particles a hazard to active satellites and space missions.
- ▶ In 2007, COPUOS achieved a major result by adopting its own **Space Debris Mitigation Guidelines**. There is general agreement among States that the implementation of these voluntary guidelines for the mitigation of space debris at the national level would increase mutual understanding on acceptable activities in space, thus enhancing stability in space and decreasing the likelihood of friction and conflict.

Photo: Over 22,000 man-made objects are being tracked in Earth orbit. Fewer than 2,000 of these are operational. The ring around the Earth is the satellite orbit used for satellite television and other purposes. Image: Artist's impression





SPACE AGENDA TODAY

■ THREATS FROM ASTEROIDS:

Near-Earth Objects

- ▶ Near-Earth objects (NEOs) are asteroids, comets and large meteoroids whose orbit intersects the Earth's orbit and may therefore pose a danger of collision.
- ▶ NEOs with a diameter of over 1 km hit the Earth a few times in a million years.
- ▶ COPUOS works on establishing international procedures and decision-making mechanisms for dealing with a potential NEO threat.



Photo: Japan's Hayabusa space probe travelled to the Itokawa asteroid and in 2010 returned the first samples of an asteroid to Earth. Photo ©JAXA



SPACE AGENDA TODAY

Long-term sustainability of outer space activities:

SUSTAINABLE SPACE = SUSTAINABLE DEVELOPMENT ON EARTH

- Sustainable development on Earth is not possible without sustainable space.
- Space applications such as earth observation, communications, navigation, timing and positioning provide strong support for the implementation of the actions called for in the United Nations development agenda.
- COPUOS works on issues such as:
“Space and sustainable development”:
-the use of space technology and its applications
climate change, food security, monitoring of natural resource agriculture....

“Long - term sustainability of outer space activities:

- Sustainable Space Utilization supporting Sustainable Development on Earth, Space Debris, Space Operations and Tools, Space Weather, Regulatory Regimes and Guidance for Actors In the Space Arena





SPACE AND LAW

One of the biggest achievements of COPUOS was the development of five UN Treaties and five sets of Principles on Outer Space

- ▶ **Outer Space Treaty, 1967 (101 States parties / 26 additional signatures)**
- ▶ **Rescue Agreement, 1968 (91/24)**
- ▶ **Liability Convention, 1972 (88/24)**
- ▶ **Registration Convention, 1975 (55/4)**
- ▶ **Moon Agreement, 1979 (13/4)**

- ▶ Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space (1963)
- ▶ Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting (1982)
- ▶ Principles Relating to Remote Sensing of the Earth from Outer Space (1986)
- ▶ Principles Relevant to the Use of Nuclear Power Sources in Outer Space (1992)
- ▶ Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interests of All States, Taking into Particular Account the Needs of Developing Countries (1996)



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United Nations Register on Objects Launched into Outer Space

- Established in 1962, the Register is the central repository of official information provided by States on space objects in accordance with the Registration Convention or, on a voluntary basis, under General Assembly resolution 1721 B of 1961.
- The Register contains information received from Member States and also complementary information collected from external sources on all functional objects launched into outer space **since 1957**
- Space debris and non-functional objects are not included
- Search could be performed using different parameters (name, international designator, launching State, date of launch, orbital status, etc.)
- Provides links between space objects and their relevant documents of registration. This way, every user can download and print any registration document
- All information contained in the Register is publicly available via the UNOOSA website:
www.unoosa.org
- ▶ Since 1957, about 38.300 space objects have been tracked in Earth orbit or beyond. Approximately 6.400 are “functional” (i.e. satellites, probes, manned spacecraft and/or space station components). The rest are spent rocket boosters, shrouds and detached components or other residual nonfunctional components resulting from the launch, operation or termination of the space object, collectively known as “non-functional”)



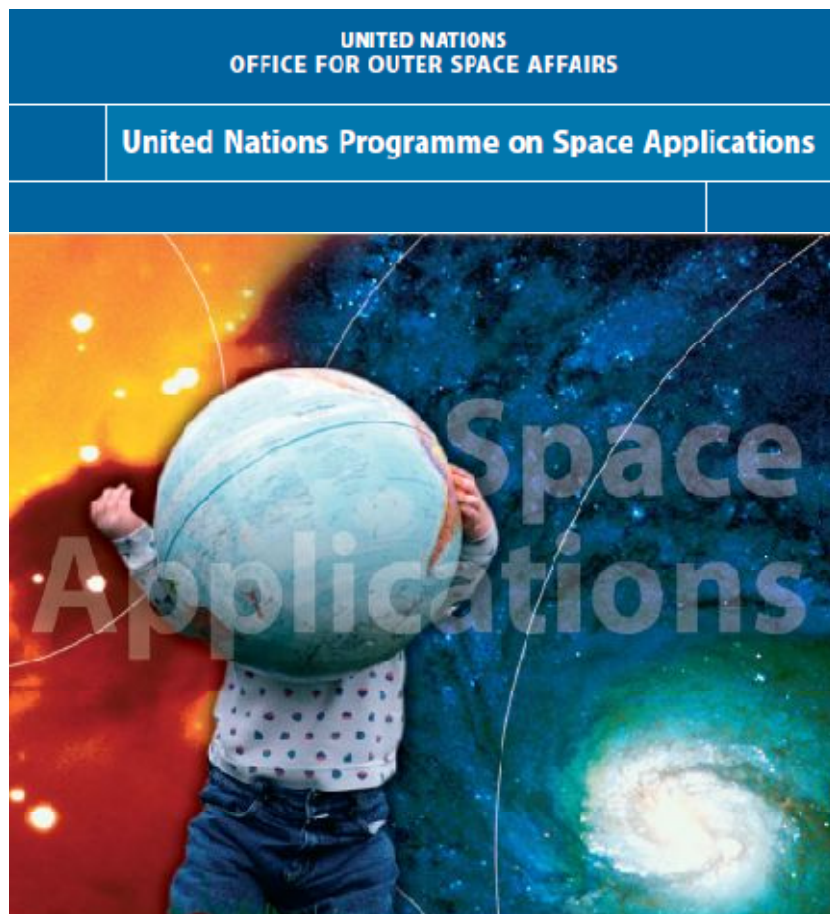
SPACE AND DEVELOPMENT

- Three major United Nations conferences on the exploration and peaceful uses of outer space, held in Vienna in 1968, 1982 and 1999 (**UNISPACE**) outlined a wide variety of actions.
- **United Nations Programme on Space Applications**, implemented by UNOOSA, was established in 1971 on the recommendation of UNISPACE I
- **UNISPACE III adopted “The Space Millennium: Vienna Declaration on Space and Human Development” in 1999 and emphasized a variety of actions to:**
 - Protect the global environment and manage natural resources;
 - Increase the use of space applications for human security, development and welfare;
 - Protect the space environment;
 - Increase developing countries’ access to space science and its benefits;
 - Enhance training and educational opportunities, especially for young people.
- UNISPACE III also led to the establishment of:
United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)

International Committee on GNSS (ICG)



SPACE AND DEVELOPMENT: UN Programme on Space Applications

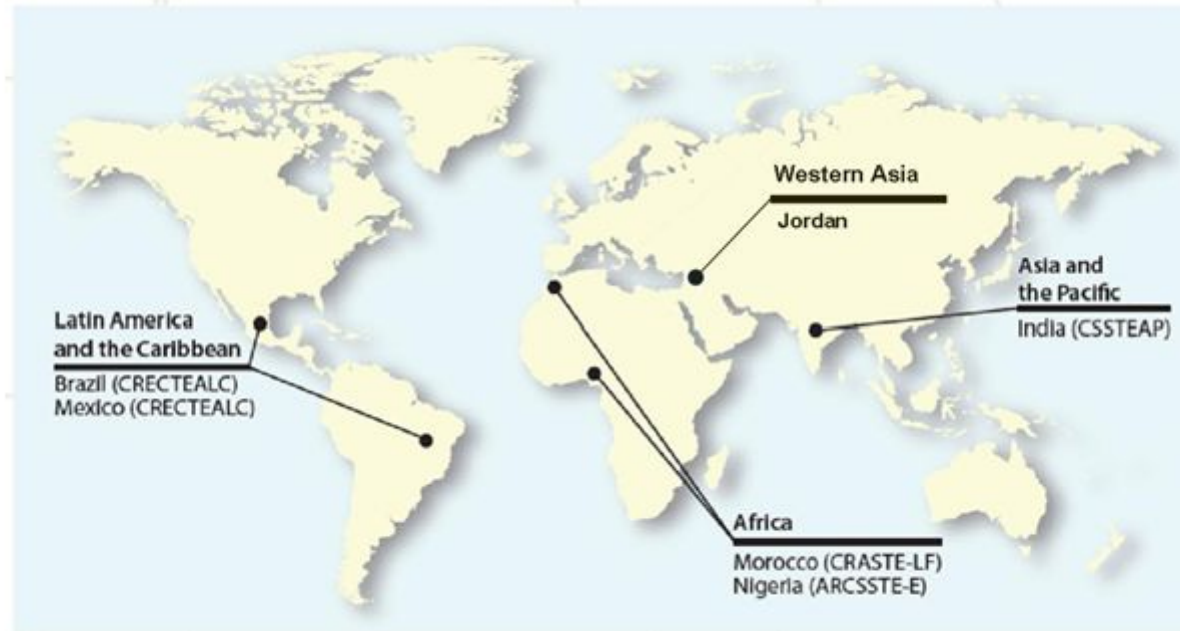


- Established in 1971 as a result of recommendations of 1968 UNISPACE conference
- Conducts a series of world-wide activities
 - Workshops
 - Symposiums
 - Training Courses
- **Priority Areas**
 - Basic Space Technology
 - Human Space Technology
 - Natural resources management and environmental monitoring
 - Satellite communications
 - Global navigation satellite systems
 - Satellite-aided search and rescue





UN-AFFILIATED REGIONAL CENTRES FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION





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GLOBAL NAVIGATION SATELLITE SYSTEM OF SYSTEMS



International Committee on
Global Navigation Satellite Systems

ICG was established in 2005 to achieve compatibility and interoperability of GNSS systems

UNOOSA serves as the Executive Secretariat to ICG

- Global navigation satellite systems (GNSS) are constellations of satellites that provide geo-spatial positioning data to users on a continuous and worldwide basis.
- To date, the United States' Global Positioning System (GPS), the Russian Federation's Global Navigation Satellite System (GLONASS), and elements of Europe's Galileo and China's Compass/BeiDou systems have been deployed.
- Satellite navigation, positioning and timing have applications in a wide variety of fields, such as surveying and mapping, transportation, precision agriculture, monitoring of the environment, leisure, recreation and disaster risk reduction.



DISASTER RISK MANAGEMENT: UN Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)

- ▶ UN-SPIDER is UNOOSA programme, established in 2006 by GA resolution 61/110.
- ▶ Ensures that all countries and regional and international organisations have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle by:
 - being a gateway to space information for disaster management support;
 - serving as a bridge to connect the disaster management and space communities; and
 - being a facilitator of capacity-building and institutional strengthening.
- ▶ Knowledge portal: <http://www.un-spider.org/>
Space matrix: Choose the disaster type and phase in combination with the appropriate space technology and this Matrix will make it easy for you to find the proper information!



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THANK YOU!

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