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**Committee on the Peaceful
Uses of Outer Space**
Scientific and Technical Subcommittee
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**International cooperation in the peaceful uses of outer
space: activities of Member States**

Note by the Secretariat

Contents

	<i>Page</i>
I. Introduction	2
II. Replies received from Member States	2
Algeria	2
Canada	3
Netherlands	7
Ukraine	10



I. Introduction

1. In the report on its fifty-fourth session, the Scientific and Technical Subcommittee on the Peaceful Uses of Outer Space recommended that the Secretariat continue to invite Member States to submit annual reports on their space activities (A/AC.105/1138, para. 42).
2. In a note verbale dated 26 July 2017, the Secretary-General invited Member States to submit their reports by 16 October 2017. The present note was prepared by the Secretariat based on the replies received to that invitation.

II. Replies received from Member States

Algeria

[Original: French]
[21 November 2017]

Algeria believes that international cooperation in the peaceful uses of outer space is the appropriate way to facilitate the exchange and transfer of knowledge and know-how, and to promote space technologies and applications for sustainable socioeconomic development, environmental protection and people's well-being.

It is in that context that Algeria has taken part in the work of:

- The First International Space Forum, the theme of which was "Space science and academy for global challenges", held in Trento (Italy) on 24 October 2016.
- The twenty-third workshop of the Comprehensive Nuclear-Test-Ban Treaty Organization on on-site inspections, which was held in Baden (Austria) from 7 to 11 November 2016, and the forty-sixth session of Working Group B of the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, which was held in Vienna from 22 February to 4 March 2016.
- The seventh regular session of the Governing Board of the African Regional Centre for Space Science and Technology — in French Language (CRASTE-LF), which was held in Nouakchott on 2 September 2016.

At the regional level, Algeria supports all initiatives to promote inter-African cooperation in the field of space technology and applications for sustainable development in Africa.

In that regard, Algeria participated in the development of the African Space Policy adopted at the twenty-sixth ordinary session of the Assembly of Heads of State and Government of the African Union, which was held in Addis Ababa on 31 January 2016, and continues its efforts through participation in the group of experts tasked with defining and putting in place mechanisms for the deployment of the implementation strategy for that policy.

In addition, the Algerian and South African space agencies have agreed on a draft plan, currently in the process of being finalized, to jointly develop Earth observation satellites as part of the project to build a constellation of Earth observation satellites for the management of African resources and the environment.

That constellation will contribute to knowledge and the rational management of the resources that are vital for consolidating the continent's process of development and the fight against poverty initiated by the New Partnership for Africa's Development, through satellite data coverage and the timely provision of lower-cost services.

At the subregional level, Algeria is home to the Regional Support Office for North Africa and the Sahel of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), and continues to provide scientific and technical support to the countries covered by that Office.

Algeria, which is committed to complying with international law, has adopted three of the five United Nations treaties on outer space and supports the mechanisms and obligations regarding the peaceful uses of outer space, international liability and the registration of objects launched into outer space.

Algeria follows with great interest the issues addressed by the Committee on the Peaceful Uses of Outer Space and contributes to the promotion of peaceful space activities for sustainable development and the well-being of humanity.

In that context, the delegation of Algeria highlights the importance of:

- Ensuring equitable access to orbital positions, in accordance with the principles of peaceful use and non-appropriation of outer space.
- Combating the proliferation of space debris, while taking care not to hinder the development of the emerging space capabilities of developing countries. Algeria supports the voluntary implementation of the guidelines on space debris mitigation established by the Inter-Agency Space Debris Coordination Committee. The delegation of Algeria also supports the Committee's initiative to develop a set of guidelines for the long-term sustainability of outer space activities.
- Establishing a regulatory framework governing the commercialization of high-resolution satellite data in order to prevent any misuse that would harm persons and property.

With regard to legislation relating to the exploration and peaceful uses of outer space, Algeria has initiated the process of enacting a law governing national space activities in order to codify the ambitious practical objectives of the National Space Programme and regulate their implementation through the establishment of a legal framework to support the development of national space activities.

Canada

[Original: English]
[4 January 2018]

2017 was rich in achievements for Canada, particularly for engaging young Canadians in science, technology, engineering, and math (STEM). Some highlights from Canada's year in space include: the commissioning of our Maritime Monitoring and Messaging Microsatellite (M3MSat); the assembly integration and testing of our RADARSAT Constellation Mission (RCM); the launch of the Canadian Cubesat Project for university students; and the closing of a yearlong astronaut recruitment campaign, to bring our corps to four active astronauts. 2017 also marked the 2nd year of Canada's Chairmanship of the United Nations Committee on the Peaceful Uses of Outer Space.

The International Space Station (ISS)

Canada's contribution to ISS, the Mobile Servicing System (Canadarm2, Dextre and the Mobile Base System), demonstrated its importance as a critical robotics system by performing resupply, maintenance, and service tasks essential to ISS operations and having been operated for a record number of hours in 2017. Canadarm2 was used to capture, manoeuvre, unload, and release six United States commercial vehicles: Orbital-ATK 07 and 08; SpaceX 10, 11, 12 and 13. As well, Dextre performed well-over a dozen distinct maintenance operations and experiment deployments.

Human health and medical science remain Canadian priorities for the utilization of ISS. Canada's study, the Life Science Research System (LSRS) consists of a new research platform of space health technologies to be deployed on ISS in 2018 and 2019 to address risks associated with human space flight.

In 2017, Canada also continued to operate four scientific studies related to health on ISS: T-Bone, Marrow, At Home in Space, and Vascular Echo.

Human space flight

In July 2017, the Canadian Space Agency recruited two new astronauts, bringing the Canadian astronaut corps to four active astronauts, thereby strengthening Canada's space programme capacity to seize new flight opportunities. The new recruits joined the NASA Astronaut Candidate (ASCAN) course in August 2017.

Canadian astronaut, Dr. David Saint-Jacques, continued to prepare for his mission as a member of ISS Expedition 58/59, planned to launch in November 2018 on a Soyuz vehicle from Baikonur. This will be his first mission and the 17th Canadian spaceflight.

Space atmospheric sciences

In 2017, the Canadian Space Agency established multiple new three-year projects to enhance the capacity of the scientific community to use observations from space. These projects aim to advance the understanding of the Earth's atmosphere and the impacts of the Earth's surface on the atmosphere.

The Canadian Space Agency continues to support Canada's SCISAT satellite, which has now been extended until 2021. SCISAT's two instruments, ACE-FTS and MAESTRO, continue to produce high quality data to better understand the depletion of the ozone layer. SCISAT remains an essential data source for climate scientists and an important asset to international environmental policymaking and implementation of international treaties, such as the Montreal Protocol.

The Canadian Space Agency also continues to support Canada's Optical Spectrograph and InfraRed Imaging System (OSIRIS) instrument on-board the Swedish Odin satellite, measuring atmospheric composition. The data quality of OSIRIS has become internationally recognized, is highlighted in United Nations Ozone Assessment Reports, and is also used to monitor the impact of the United Nations Montreal Protocol.

Canada also continues to support the Measurement of Pollution in the Troposphere (MOPITT) instrument on-board the NASA Terra satellite. For the past 18 years, MOPITT has been continuously scanning the Earth's atmosphere to make long-term measurements of carbon monoxide concentrations. It is the longest-running pollution monitor in space today.

Planetary exploration

Canada provided the OSIRIS-REx Laser Altimeter (OLA) on NASA's asteroid-sampling mission OSIRIS-Rex. OLA is a sophisticated laser-based mapping system which will be used to create 3D maps of the asteroid Bennu to help the mission team select a sample collection site.

The Canadian Space Agency continued to participate in the International Space Exploration Coordination Group (ISECG).

Space-based astronomy

The Government of Canada continues to support the James Webb Telescope project, a partnership between NASA, ESA, and the Canadian Space Agency. The partners are working towards a 2019 launch date. Canada is providing the Fine Guidance Sensor (FGS), a critical element of the mission used for extremely precise pointing of the telescope, and the Near-Infrared Imager and Slitless Spectrograph (NIRISS).

The Canadian Space Agency continued its collaboration with the Indian Space Research Organisation on ASTROSAT. Canadian astronomers are now eligible to obtain data from ASTROSAT thanks to the provision of Canadian detectors for UVIT, the twin UV and visible imaging telescopes, on India's ASTROSAT.

Canada is a partner in BRITE Constellation with Austria (University of Vienna and Graz University of Technology) and Poland (Copernicus Astronomical Center). The constellation observes the most luminous stars, including massive blue stars. As of 2017, five of the six BRITE satellites are operational.

Space weather

Space weather science is still in its infancy and requires worldwide ground and space-based observations to develop models that will ultimately contribute to the detection and mitigation of risks. Given Canada's northern location, it is highly impacted by the effects of space weather, but also has a front row seat to observe the near-Earth space environment (geospace) where space weather occurs.

Canada's Geospace Observatory (GO) initiative observes geospace using arrays of ground-based instruments deployed across Canada and the data acquired is openly available to scientists worldwide.

Canada also continues to operate ground imagers and magnetometers across Canada, through the support of the University of Calgary and the University of Alberta, to contribute to the NASA THEMIS mission.

Canada is a partner in the European Space Agency's (ESA) Swarm mission (launched in 2013), designed to measure the magnetic fields generated by the Earth. ESA procured a Canadian Electric Field Instruments (EFI) for each of the three satellites. The University of Calgary, supported by the Canadian Space Agency, uses measurements from the EFIs to learn about the influence of space weather on the space environment.

Canadian satellite CASSIOPE, with its Enhanced Polar Outflow Probe (e-POP) science payload, continues to observe the Earth's ionosphere to study space weather effects. The e-POP mission is led by the University of Calgary in collaboration with other Canadian universities, the Japan Aerospace Exploration Agency (JAXA), and the U.S. Naval Research Laboratory. Starting in 2017, CASSIOPE will coordinate its observations with the three Swarm satellites to better understand the mechanisms that drive the Earth's magnetic field.

Finally, Canada is leading the Committee of Peaceful Uses of Outer Space Expert Group on space weather and the work on UNISPACE+50 Thematic Priority 4, International Framework for Space Weather Services. In line with recommendations of the Expert Group, Canada has initiated a socioeconomic study to assess the impacts of space weather on Canadian infrastructure and aims to share its conclusions with the Committee in 2019.

Space Situational Awareness (SSA)

Canada's Department of National Defense (DND) continues to operate Sapphire, an operational space-based SSA sensor. Sapphire currently contributes 2000–3000 metric observations/day on deep-space objects to the larger US-led Space Surveillance Network, contributing to the safety of space objects in Earth's orbits. Sapphire will likely continue to be operated beyond its designed lifespan of 2018.

Since 2013, the Near-Earth Object Surveillance Satellite (NEOSSat) provides continuous tracking of man-made objects and near Earth asteroids for advanced R&D purposes. The spacecraft has suffered from two major anomalies but has since fully recovered.

Finally, several Canadian universities are collaborating with international colleagues in "all-sky camera networks", collecting observations on incoming debris/meteorites for logging and recovery purposes.

Earth observation

The Canadian Maritime Monitoring and Message Microsatellite, M3MSat, was commissioned in May 2017. The mission provides space-based automatic identification system (AIS) to improve Canada's ability to detect and manage marine traffic.

Canada's RADARSAT Constellation Mission (RCM) is undergoing assembly, integration, and testing of the three-satellite suite, ready to launch in 2018. RCM represents an evolution of the RADARSAT Program and aims to ensure C-Band SAR data and provide new applications enabled by the constellation approach.

The Canadian Space Agency continues to support a large number of R&D activities using RADARSAT-2 data both nationally and internationally through various Canadian Space Agency Earth observation applications development initiatives.

STEM

The Canadian Space Agency will award grants to post-secondary institutions, through the Canadian CubeSat Project (CCP), as part of a challenge to design, build, launch, and operate their own CubeSat for a three-year period starting in 2018. The main objective of the CCP is to provide professors in post-secondary institutions with an opportunity to engage their students in a real space mission. Once tested and ready for space, the CubeSats will be launched to and deployed from ISS. The teams will then operate their satellites and conduct science according to their mission objectives, which could last up to 12 months.

The Canadian Space Agency continued to provide funds and partnership opportunities to academia in order to provide hands-on experience to post-secondary students. In particular, 21 grants were awarded to universities in 2016–2017 under the Flights and Fieldwork for the Advancement of Science and Technology (FAST) initiative.

The Canadian Space Agency also supported various pre-space capability demonstration opportunities to raise the space readiness of Canadian science and technology, while training post-secondary students in the field of space science and technology.

Support to global challenges

The Canadian Space Agency and the Public Health Agency of Canada (PHAC) continue to apply Earth observation satellite data and derived geospatial information to advance research efforts and risk assessments within the Canadian public health domain. Efforts have been focused on six priority areas: mosquitos borne diseases, lyme disease, air-borne diseases, water borne disease, vulnerable human population, and on pandemic and major outbreaks. Inter-agency collaboration recently culminated in an international One Earth-One Health workshop in Montreal (2017) to discuss Earth observation data, indicators and methods linking environment, climate, and societal benefits of public health research and outreach.

In addition, in cooperation with Switzerland, Canada, through its Public Health Agency, is co-leading the Committee's Expert Group on Space and Global Health and the work on UNISPACE+50 Thematic Priority 5, Strengthened Space Cooperation for Global Health. The Expert Group provides a forum to enable Member States, international intergovernmental organizations, non-governmental organizations and their respective experts to share needs, opportunities, best practices and expertise to actively engage, link and enable the use of space for global health purposes.

Netherlands

[Original: English]
[22 December 2017]

I. Introduction

The highlights on outer space activities in 2015 was among other the submission for a licence to carry out space activities with non-steerable satellites and the establishment of The Hague Space Mineral Resources Governance Working Group. Another highlight was the visit from Elzbieta Bienkowska, EU Commissioner for the Internal Market, Industry, Entrepreneurship and Small-Medium Enterprises to ESTEC in Noordwijk (Netherlands).

The important highlights for the Radiocommunications Agency Netherlands were the conclusion of five agreements as “Notifying Administration” with foreign satellite operators and the outcome of the World Radio Conference 2015 (WRC-2015).

II. National highlights

National legislation

As mentioned in the previous report non-steerable satellites (e.g. cubesats) shall be by Order in Council, subject to the Space Activities Act. The Order in Council for non-steerable satellites entered into force at July 1st, 2015.

ISIS-Innovative Solutions in Space, Delft University of Technology Applicants and Radio Amateur Satellites NL submitted in September 2015 a licence to carry out space activities with non-steerable satellites at the Radiocommunications Agency.

The Hague Space Mineral Resources Governance Working Group

The Hague Institute for Global Justice convened a round table on the Governance of Space Mineral Resources with a selected group of experts on December 1st, 2014. Industrial leaders, scientists, diplomats as well as political and legal experts from across the globe discussed and proposed solutions for the current lack of a legal framework for the use of space mineral resources (SMR) found on asteroids and other celestial bodies. Following the round table, the initiative was taken to set-up The Hague Space Mineral Resources Governance Working Group to support this process and promote its advancement, within a reasonable time frame and in accordance with international law. The objective of the Working Group is to assess the need for a regulatory framework for space mineral resource activities and to prepare the basis for such a regulatory framework.

The Chair of the Working Group is René Lefeber, of the Ministry of Foreign Affairs. The International Institute of Air and Space Law of Leiden Law School, the Netherlands (IIASL) hosts the Secretariat.

Study social and economic benefit and cost space science

In September 2015 the Ministry of Economic Affairs started a study to provide insight into the social and economic benefits and costs for Dutch society regarding governmental investments in space activities. The study will be finished in June 2016; the outcome and the conclusions of the study will be sent to the House of Representatives.

Netherlands Space Office (www.spaceoffice.nl)

The Netherlands Space Office (NSO) acts as the Dutch agency for space affairs. NSO was established in October 2008 by the Dutch government in order to develop the Netherlands’ space programme and to bring that programme to action. NSO is the face of the Dutch space community for international space organizations like ESA and NASA as well as the central point of contact for the space community within the Netherlands. Space policy in the Netherlands is primarily focused on international

cooperation in European contexts within ESA, the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) and the EU/European Commission.

The Netherlands has a national programme. Every year the Ministry of Economic Affairs, the Ministry of Education, Culture and Science, the Ministry of Infrastructure and the Environment and the Netherlands Organization for Scientific Research (NWO) jointly sends to the NSO a letter with directions to implement the national programme. OMI, TROPOMI, Dutchmars, Sciamachy and Satellite data services are examples of the most important parts of the national programme.

The NSO coordinates the implementation of the national programme and stimulates the sharing and use of information in international cooperation. It also represents the Netherlands in the ESA Programme Boards and several European Committees and forums. The letter from the above-mentioned ministries also contains directions for NSO to participate in ESA Programme Boards.

III. International highlights

Elzbieta Bienkowska — European Space Research and Technology Centre (ESTEC)

On 21 September 2015 ESA's ESTEC technical centre in Noordwijk was honoured with a visit from Elzbieta Bienkowska, EU Commissioner for the Internal Market, Industry, Entrepreneurship and Small—Medium Enterprises. Her visit included tours of the spacecraft-testing ESTEC Test Centre and the Erasmus human spaceflight centre. Before departing, Commissioner Bienkowska signed ESTEC's visitor "golden book", writing "Thank you for hosting me for the first time — probably and hopefully not the last one. It's one of the most important issues for Jean-Claude Juncker's Commission".

The Netherlands and EU policy

2015 was already marked by the upcoming Netherlands Presidency of the Council of the European Union in the first half of 2016 and the preparation of this Presidency.

An informal Space Council organized by the Luxembourg Presidency on November 30th, 2015 was one of the highlights of 2015. Furthermore the European Commission announced a European Space Strategy to be published in the second half of 2016.

Next to this, several Space Working Parties and other meetings (Programme Committee Space and dedicated Committees for Copernicus and Galileo) were held. In July the proposal for a Directive on the dissemination of Earth observation satellite data for commercial purposes was withdrawn.

Particularly in the second half of 2015, the preparations for the upcoming Dutch EU-Presidency were well on their way, although this was mostly "behind the scenes". The priorities of the Presidency for Space will be the better uptake of space data and strengthened relations between ESA and the EU, specifically the Commission.

This wish for a strengthened relationship between ESA and the EU was also the main reason for Luxembourg to organize an informal Space Council, where the main focus was on the instrument "Space Council" — a joint EU/ESA Council. Most EU Member States, Switzerland, Norway, DG ESA and the Commissioner were present and most participants supported an instrument as the Space Council.

Also in the second half of 2015, the Commission announced a European Space Strategy to be published in the second half of 2016. The Commission stated that this strategy will be preceded by a process of requested inputs and coordinated meetings with both the Member States and ESA, as well as other stakeholders in the domain of Space.

IV. Radiocommunications Agency Netherlands (www.agentschaptelecom.nl)

Satellite communications

The Netherlands Radiocommunications Agency (RA) supervises a large number of activities in the satellite communications field on behalf of the Minister of Economic Affairs, notably compliance with the Radio Spectrum Policy. The RA is among other tasks, responsible for obtaining and allocating satellite orbits and frequency bands and monitoring the use.

Netherlands satellite operators

Satellite operators themselves cannot conclude formal international agreements regarding their space operations; this right is reserved to national governments only. In the Netherlands, this role is fulfilled by the RA. The RA claims for Netherlands satellite operators rights for orbital positions, frequency bands and technical parameters through the so-called “ITU filing” procedure. This task is named “Notifying Administration”. Before the RA decides to perform this task for a Netherlands satellite operator, the RA concludes an agreement in which the mutual rights and obligations are written down. In 2015 the RA had 5 agreements with such operators.

Satellite policy regarding foreign satellite operators

Since several foreign satellite operators requested information regarding a role of the RA as notifying administration (see previous item), guidelines have been developed regarding the conditions under which such a role can be accepted by the RA for a satellite operator. In 2015 a start was made to update this policy. The policy creates a framework for the work of the RA for satellite operators and the conditions under which it is willing to accept such a role. In 2015 discussions started with several foreign satellite operator. It is expected that negotiations with some of these operators will be finalized in 2016.

Election to the Radio Regulations Board of ITU

The ITU Radio Regulations Board (ITU-RRB) addresses matters which cannot be resolved through application of the ITU Radio Regulations and the ITU Rules of Procedure. Further, RRB considers reports of unresolved interference investigations at the request of one or more ITU administrations and formulates recommendations. RRB also provides advice to Radio-communication Conferences and Radio communication Assemblies.

In 2014, Ms. Lilian Jeanty of the Netherlands Radiocommunication Agency was elected as a board member to RRB. In 2015 she was appointed chairman of this well respected and highly influential board.

Small satellites

The RA noticed several developments in the area of small satellites. Although small satellites are often considered a niche market compared to e.g. the GEO satellite market, the commercial potential must be facilitated in the view of the RA. The fact that for example Google, Space-X and OneWeb announced that they will step into the small satellite market, makes it clear that the commercial potential of the small satellite market is substantial and that the small satellite industry will create a lot of adjacent activities.

In 2015 some Netherlands companies announced plans to the RA for small satellite projects in the near future. The RA noticed that, in line with the international developments, the average small satellite is getting a little bit bigger (2 U or 3 U cubesat) and more capable.

World Radio Conference 2015 (WRC-15)

During 2015 preparations for WRC-15 on the national, European, and even worldwide scale have taken place. The RA was heavily involved and took part in many European and ITU working and study groups and also chaired some of these groups.

On a national level, preparations took place in consultancy with important players in the Netherlands' telecom area, such as mobile operators, satellite operators, scientific organizations as ESA, Radio Astronomy etc.

WRC-15 took place in November 2015. Several outcomes of WRC-15 are useful, both for the RA as for the Netherlands satellite operators, and both are satisfied with the outcomes. A few highlights:

- For the next WRC-19, RA achieved to have an agenda item about “small duration mission” satellites (nano/pico satellites). The aim of this agenda item is to perform studies about and make proposals for future frequency usage of these satellites;
- On the initiative of the Netherlands, the conference accepted a resolution regarding “Stations on board suborbital vehicles”. This subject was also placed at the agenda of WRC-19;
- Extra FSS spectrum was allocated in the 14,5 GHz band;
- Administrative improvements:
 - In the satellite coordination procedure the so called “Advance Publication” in most cases does no longer apply;
 - The requirement to send some correspondence to ITU by facsimile no longer applies;
 - The area in the geostationary arc where coordination with other satellite networks is required (the so called “Coordination Arc”) has been decreased. As a result the number of coordination's and the amount of related work will increase;
 - Regulations about the so called “Bringing Into Use — BIU” of a satellite network have been improved, as several other satellite related regulations.

The outcomes of WRC-15 are extremely important for the telecom world in general and will provide the basis and guidance for the coming years.

Ukraine

[Original: English]
[22 November 2017]

Space activities of Ukraine in 2017

In 2017, it was 25 years since the creation of the State Space Agency of Ukraine — a governmental body responsible for the formation and implementation of state policy in the space sector.

During this year, space activities of Ukraine were focused on:

- Implementation of the 5th Space Program of Ukraine for 2013–2017;
- Ukraine's compliance with its international obligations in the framework of national space activities and implementation of international space projects and programmes;
- Application of the results of space activities in various areas of the country's economy;
- Expansion of geography of the space sector presence in the international space technology and services market;

- Participation in the work of numerous international space organizations, forums and exhibitions.

In the framework of the Space Program of Ukraine in 2017, in particular, the following works were continued:

- Creation of the Sich-2-1 remote sensing spacecraft as part of the future remote sensing system of Ukraine;

The above system is intended to provide monitoring of emergencies, control of the agro-industrial complex, compliance with the rules of subsoil use, eco-monitoring, implementation of infrastructure projects, land and forest management, etc.

- Creation of the Microsat-M spacecraft for the scientific experiment Ionosat-Micro and a number of technological experiments;

The purpose of Ionosat-Micro experiment is to study the dynamical processes in the ionosphere of the Earth with the help of space and ground measurements to search for the interconnection of ionospheric perturbations with processes in the Sun, in the magnetosphere, the atmosphere and the inner shells of the Earth.

In the framework of technological experiments, the working out of separate on-board devices and systems will be carried out in space conditions, in particular: a small-scale astrometry system, an experimental ammonia propulsion system, experimental chemical and solar batteries, and others.

- Creation of modern ground space infrastructure.

The above infrastructure will provide management of the national spacecraft and data reception from national and foreign spacecraft.

In 2017, Ukraine participated in the following international projects:

Antares — within the framework of the project, Ukrainian enterprises develop the basic design of the first stage of the Antares launcher, developed by United States company Orbital ATK, commissioned by NASA to deliver the cargo to the International Space Station. This year, as of the beginning of November, one launch from the United States spaceport Wallops has been performed.

Vega — within the framework of the project of the European Space Agency, Ukrainian enterprises design and develop the upper stage of the lightweight Vega launcher. The main executor of the project is the Italian company Avio. This year, as of the beginning of November, four launches of Vega from the Kourou space centre have been performed.

Solid rocket propellant elimination — as part of the project, a Ukrainian company carries out a series of works on the storage and disposal of solid propellant from rocket engines of the RS-22 ICBM at its facilities. These works are carried out in cooperation with the United States Defense Threat Reduction Agency.

In the field of international cooperation, extension of cooperation with the European Union, the European Space Agency, and the countries of North America remains a priority area.

In such, the issue of space was included in the agenda of the High-level Dialogue between Ukraine and the EU on horizontal issues and individual sectors of industry (March 2, Brussels).

Activities with Canada were initiated on development of the launching facility for in Canadian province of Nova Scotia (the project is planned to be implemented by Canadian company Maritime Launch Services and Ukrainian enterprise Yuzhnoye SDO).

The People's Republic of China remains an important partner of Ukraine in the space field. This year the implementation of the Ukrainian-Chinese Space Cooperation Program for the 2016–2020 period has been continued.

In order to expand the geography of the space sector presence in the international space technology and services market in 2017, the following international agreements have been concluded:

- Memorandum of Understanding between the State Space Agency of Ukraine and Romanian Space Agency on Cooperation in the Field of Exploration and Peaceful Use of Outer Space;
 - Memorandum of Understanding between the State Space Agency of Ukraine and Mexican Space Agency of the United Mexican States on cooperation in the space sphere for peaceful purposes;
 - Memorandum of Understanding between the State Space Agency and Canadian Space Agency in the field of exploration and use of outer space for peaceful purposes;
 - Memorandum of Understanding between the State Space Agency of Ukraine and the Space Agency of the United Arab Emirates in the field of space exploration.
-