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**Committee on the Peaceful
Uses of Outer Space**
Fifty-eighth session
Vienna, 10-19 June 2015


**Application for membership of the Committee on the
Peaceful Uses of Outer Space**

Note by the Secretariat

The present document contains a copy of the application of Israel for membership with the United Nations Committee on the Peaceful Uses of Outer Space. The Note Verbale of the Permanent Mission of Israel to the United Nations (Vienna) containing the application of Israel, was received by the Secretariat on 15 April 2015 and was circulated to member States of the Committee in Note Verbale OOSA/2015/9, CU 2015/90/OOSA/CPLA of 15 April 2015.

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Vienna, 15 April 2015

The Permanent Mission of the State of Israel to the United Nations, Organization for Security and Cooperation in Europe and other International Organizations in Vienna presents its compliments to the Secretariat of the United Nations Office for Outer Space Affairs, and has the honor to inform that the State of Israel seeks to apply for membership in 2015 to the Committee on the Peaceful Uses of Outer Space (COPUOS).

The State of Israel, as a spacefaring nation, wishes that membership in COPUOS will enable Israel to make an important contribution to international cooperation, economic development and social progress, and help to further expand Israel's capabilities in the space technology and applications areas.

The Permanent Mission of the State of Israel would be grateful to the Secretariat of the United Nations Office for Outer Space Affairs for circulating this note accordingly.

The Permanent Mission of the State of Israel to the United Nations, Organization for Security and Cooperation in Europe and other International Organizations in Vienna avails itself of this opportunity to convey to the Secretariat of the United Nations Office for Outer Space Affairs the assurances of its highest consideration.

Ambassador Zvi Heifetz

Permanent Representative to the
United Nations, OSCE and International Organizations in Vienna
Permanent Mission of Israel
Vienna



The Secretariat of the United Nations
Office for Outer Space Affairs (UNOOSA)
Vienna

The State of Israel has a long and successful legacy of more than 50 years, demonstrating its capabilities and expertise in scientific space research, 30 years of activity in space, including full, end to end, capability of development, testing, integration, launch, operation and exploitation of 15 space missions: governmental, commercial and educational (including the first launched high-school Nano-sat mission).

Israel was also involved and partnered in a series of international collaborations including the tragic flight of the space shuttle *Columbia*, with the late Israeli astronaut, Ilan Ramon, as one of the crew members.

Israel's accomplishments in these areas have benefited the Israeli economy and industry, and have improved the economic welfare of its citizens.

When Israel's national civil space program was adopted, its focus was the study of space utilization, in order to secure life on Earth and better understand the universe. Israel perceives space as a technological stimulus; a key to a modern society and an advanced information-based economy and a resource attracting highly skilled professionals.

The Israel Space Agency (ISA) - affiliated with the Ministry of Science, Technology and Space - is the authority responsible for promoting Israeli civil space activities for peaceful uses, as follows:

- Expanding bilateral and multilateral cooperation in space;
- Leading the global trend towards the miniaturization of space systems;
- Establishing technologically advanced and national capabilities in areas such as remote sensing and micro-satellites, including developing the means to launch them into space;
- Supporting community outreach and increasing public awareness, especially youth awareness.

The goals of Israel's Space Agency (ISA) embrace advancing infrastructural research at academic and research institutions, supporting the development of innovative and unique space technologies by its diverse space industries, cultivating a new generation of space scientists through space education and community projects, and encouraging the expansion and growth of Israel's space industry, domestically and internationally.

In space sciences, Israel ranks eighth in the average number of citations being published, while the quality of Israeli publications in astronomy and astrophysics is higher than the global average (50%) and it is increasing over the years. 75% of Israeli publications are part of international cooperation efforts.

Israel has provided several payloads to return scientific data in partnership with other countries. These have included the Tel Aviv University Ultraviolet Explorer, known as **TAUVEX**, or the Mediterranean Israeli Dust Experiment - **MEIDEX**. The primary mission of the MEIDEX payload was to study the temporal and spatial distribution and physical properties of atmospheric desert dust over North Africa, the Mediterranean and the Atlantic Saharan regions. The aim was achieved by a remote sensing experiment operated by the astronauts aboard the *Columbia* space shuttle mission. Moreover, MEIDEX accomplished diverse secondary science objectives by performing slant visibility observations, sea-surface reflectivity observations, desert surface observations and observations of Transient Luminous Events (sprites).

Today, the Israeli Space Agency and the French Space Agency **VEN μ S** mission are under final integration and at the test stage. The VEN μ S Project involves joint development and cooperation in launching the Vegetation and Environment Monitoring New Micro-Satellite (VEN μ S) Mission. The scientific objective of VEN μ S is to provide data for scientific studies which focuses on how to monitor, analyze and model land surfaces, given the influences of environmental factors and human activities. To accomplish this objective, VEN μ S will take high resolution and super-spectral images of predefined sites of interest on the surface of the Earth every two days. The technological objective of VEN μ S is to demonstrate technology and test hardware (specifically, electrical propulsion systems) in order to display accurate autonomous orbit control. The VEN μ S platform is being jointly built by Israel Aerospace Industries (IAI) and Rafael, while the Israeli company Elbit Systems – Electro Optics ELOP was selected by CNES to develop the electro-optical payload. The scientific missions of the project were defined and will be conducted by Ben-Gurion University and the Center for Biosphere Studies from Space in France.

Other missions include:

SHALOM - Space-born Hyperspectral Applicative Land and Ocean Mission. A joint feasibility study was successfully conducted by the Israeli Space Agency and the Italian Space Agency to develop a commercial hyper-spectral satellite. This joint feasibility study was implemented by Israeli and Italian space industries. In the near future, a unified PRISMA-SHALOM program stands to be approved.

SAMSON - Space Autonomous Mission of Swarming & Geolocating Nano-Satellites - is a project conducted by the Asher Space Research Institute (ASRI) of the Technion. It will include three nano-satellites in formation flying in a mission to demonstrate high precision geo-location of civilian signals from the ground including for rescue purposes. The project is in its final stage. SAMSON will demonstrate and implement formation-flying algorithms using an innovative nano-satellite propulsion system.

Current proposals for new space missions are being discussed with counterpart Space Agencies. Some discussions are taking place in an internal competition with other

agencies, one of them being **ULTRASAT** - a small space mission designed to carry out a wide-field UV transient survey. The project will be implemented by the Weizmann Institute of Science, Israel Aircraft Industries (IAI) and Elbit Systems Electro-optics – Elop, in collaboration with JPL and CALTECH. It brings together academia, industry and government.

The satellite will be injected into a Low Earth Orbit carrying a UV camera payload to detect and locate low energy X-ray bursts as precursors for supernova events, and to examine their time evolution in the UV spectrum.

The critical element of the time measurement of the European Space Agency's **JUICE 3GM** mission was developed by the Weizman Institute and Accubeat Company, in collaboration with the Italian Space Agency.

Several Israeli companies have also developed new, cutting edge space technologies, including the miniaturized cryocoolers from Ricor which are aboard the NASA **Curiosity** rover on Mars, atomic clocks provided by Accubeat for the Galileo ground station and many of RAFAEL's engines and fuel tanks are integrated into dozens of missions worldwide. Current, areas of technology development include electric propulsion and formation flying

Israel's space infrastructure consists of governmental institutions (ISA), several universities and research institutes (Technion, Haifa University, Tel Aviv University, Bar Ilan University, Hebrew University, Ben-Gurion University, Weizman Institute), as well as astronomical observatory stations and companies along the entire value-chain and value added services.

Large companies include Israel Aerospace Industries (IAI), Elbit Systems, Elbit Electro-optical Systems Rafael, Gilat Systems and Gilat Communications, SpaceCom, ImageSat International, and ORBIT Communication Systems.

As a "Start Up Nation", Israel also has small, but rapidly growing companies including: Effective Space Solutions, NSL Satellites, Space Pharma, Spacecialist, NovelSat, and Ramon Chips.

As part of ISA efforts to achieve its goals, Israel aims to contribute and expand the scope of its multilateral cooperation in space. We hope to strengthen collaboration with partner countries.

Israel looks forward to cooperating with any spacefaring nation, or emerging one, which shares the passion and dedication for space science and exploration, and for the peaceful uses of outer space for the benefit of all people. Space research and space use can serve as a bridge to connect people and nations. Accordingly, ISA partners with several leading space agencies, as well as international organizations.

Areas of collaboration with Israel include:

- Collaboration on preparations and implementation of the prestigious 66th International Astronautical Congress (IAC-2015) to take place in Israel in 2015; conducting an IAC 2015 promotional reception during the upcoming COPUOS meeting in June 2015; hosting the UN-IAF workshop; and dedicating an exhibition area to COPUOS/UNOOSA.
- Preparations for hosting the International Space University (ISU) in summer 2016.
- Cooperation with the UN-SPIDER initiative by providing free of charge commercial EROS images and sharing expertise in disaster management;
- Membership of Israel in SMPAG and IAWN for protecting the Earth from Near Earth Objects (NEO);
- Donation of an EROS B satellite model to the permanent space exhibition in the Vienna International Center, including a high-level dedication ceremony;
- Participation of senior representatives from UNOOSA in the annual *Ilan Ramon International Space Conference* honoring the memory of STS-107 crew members, as well as the participation of Israeli experts in conferences organized by UNOOSA.