

**PLAN OF COOPERATION
BETWEEN
THE INDIAN SPACE RESEARCH ORGANISATION
AND
THE ISRAEL SPACE AGENCY
REGARDING COOPERATION IN ELECTRIC PROPULSION FOR
SMALL SATELLITE**

The Indian Space Research Organization (hereinafter referred to as "**ISRO**") of Department of Space (DOS), Government of Republic of India,
and

The Israel Space Agency, (hereinafter referred to as "**ISA**"), on behalf of the Ministry of Science and Technology of the State of Israel

either or both of which may hereinafter be referred to as the "**Side**" or the "**Sides**",

PREAMBLE

BASED on the Agreement between the Indian Space Research Organization and the Israel Space Agency for Cooperation on Peaceful Uses of Outer Space (hereinafter, the "**Framework Agreement**"), signed in Bangalore, on October 28, 2002, which is still in force;

RECALLING the Memorandum of Understanding between the Indian Space Research Organization and the Israel Space Agency regarding Cooperation in Electric Propulsion for Small Satellite, signed in Jerusalem, on July 5, 2017 (hereinafter, the "**MOU**"), which was in force till completion of the feasibility study;

NOTING that the feasibility study dealt in the MOU was conducted successfully to the satisfaction of the Parties and concluded on March 2018;

EXPRESSING the mutual interest of the Sides to execute the joint project of an Advanced Low Power Electric Propulsion System (hereinafter, "**EPS**") in ISRO mission (hereinafter, the "**Project**"), in accordance to Article 2.2 to the MOU and Article 3 to the Framework Agreement;

The Sides will cooperate as follows:

Article 1

Object and Scope

1. The purpose of this Plan of Cooperation (hereinafter, the "**Plan**") is to define the terms and conditions governing the Project – a complete EPS, used on a satellite, based on IMS-2 Bus to perform orbital maneuvers and successful completion of its In-Orbit Tests (IOT). No other propulsion system is envisaged in this satellite. This would space qualify the EPS through ISRO's Mission.
2. This Plan will be conducted in accordance with the terms and conditions set in the Framework Agreement and this Plan. In case of contradiction between the Framework Agreement and this Plan, the Framework Agreement shall prevail
3. Any activity carried out by a Side pursuant to this Plan will be in accordance with its national laws, regulations, procedures, policies and mechanisms.

Article 2

Description of the Project

1. ISRO and ISA will use its best efforts to conduct the Project, that will include (all as detailed in the SOW):
 - (1) ISRO responsibilities
 - a. Design, development and manufacture of the satellite
 - b. Participate in tests and reviews of EPS in Israel.
 - c. Integrate the EPS on the satellite with ISA support
 - d. Launch the satellite
 - e. Performing an In-Orbit Tests of the propulsion system performance on the satellite with ISA support
 - (2) ISA responsibilities
 - a. Design, development and manufacture of an advanced low power EPS by RAFAEL Advanced Defense System Ltd. (hereinafter, "**RAFAEL**");
 - b. Support ISRO during the integration of the EPS on ISRO's satellite;
 - c. Provide the EPS' user manual and EPS' performance to support ISRO satellite system level analysis. ISA/Rafael will support ISRO with the in-orbit mission management planning of the Satellite while operating the EPS, until the SRR, based on Rafael's existing experience and the Specification document of the EPS. In case of a need for a change of the configuration and Specification of the EPS, the parties shall discuss and agree on the way forward.
 - d. Support ISRO in performing an In-Orbit Tests of the propulsion system performance on the satellite.
2. The role and responsibilities of the Sides are defined in details in Annex A - Statement of Work (hereinafter, the "**SOW**"). A detailed SOW for the launch and IOT phases will be accomplished up to 12 months from the signature of this document.
3. The technical requirements of the EPS are defined in details in annex B - Subsystem Technical Requirements document (hereinafter, the "**technical requirements**").
4. The Sides will use their best efforts to conduct the Project in accordance to the SOW and to the technical requirements.
5. The project is expected to take about 32 months from the kick off date of the project (i.e: the time period from kick off until delivery of the EPS). The launch is expected to take place up to 12 months after the delivery of the EPS. The Sides will work in concert to formulate a timetable for the Project.

Article 3

Project Management

The points of contact of each Side listed below will be responsible for coordinating the programmatic, administrative, scientific and technical implementation of the cooperative activities carried out under this Plan.

The ISRO Point of contacts are:

Technical:

Mr. Ravi Chandra Babu G
Division Head & Project Director, IRS & SSS Programme
UR Rao Satellite Centre
Old Airport Road
Bengaluru
+91 80 25205271/25082650/9449819494
ravibabu@urisc.gov.in

Administrative:

Mr. D. Gowrisankar
Director, ICLAP
ISRO Headquarters,
New BEL Road, Bengaluru
0091 80 23416361
isroic@isro.gov.in

The ISA Point of contacts are:

Technical:

Mr. Viktor Manuel Algranatti
52 Menachem Begin Street.
TEL AVIV 61213, ISRAEL
+972 52 347 1296
ViktorA.ext@most.gov.il

Administrative:

Mr Gil Peleg
52 Menachem Begin Street.
TEL AVIV 61213, ISRAEL
00972 53 427 8944
GilP.ext@most.gov.il

The Sides will inform each other on a regular basis about the milestones (at the end of each activity).

Article 4

Funding

Each Side will bear the costs of discharging its respective responsibilities under this Plan. These costs include the costs of travel and subsistence of its own personnel as well as transportation of all equipment and information for which each Side is responsible. No exchange of funds or payments among the Sides is foreseen for the execution of activities planned under this Plan.

The obligation of the Sides to carry out their respective responsibilities is subject to their respective funding procedures and to the availability of funds. In the event that funding problems arise that may affect a Side's obligation to fulfil its responsibilities under this Plan, that Side will notify the other Side in writing as soon as possible. In such a case, the Sides, through their appropriate representatives, will meet promptly in order to assess the situation and approve corrective actions.

Article 5

Public Information and Confidentiality

1. Each Side may release information to the public related to its own activities under this Plan. Any other information that has been provided by one Side (or by its Related Entity) to the other and identified and marked as "Proprietary" will be appropriately protected in accordance with the receiving Sides' internal policies, national laws and regulations and at least with the same degree of care that the receiving side treats its own proprietary information. The receiving side shall be entitled to reveal the information marked as "proprietary" only to its employees and Related Entities and on a "need to know basis" only, i.e: only for the purpose of this cooperation. The receiving side and its Related Entities shall not be entitled to reverse engineer the received item. The obligations with respect to handling of proprietary information are not applicable to any information which: (a) prior to its disclosure by the disclosing side to the receiving side, was already known to the receiving side (not as a result of a breach of any duty or obligation towards the Disclosing Side); or (b) is at the time of disclosure in the public domain; or (c) is legally received from a third party where the receiving side has no reasonable cause to believe that the receipt or the disclosure of such information by such third party was the result of or constitutes a breach of any duty or obligation towards the disclosing side; or (d) is independently developed by the receiving side without any reference to the proprietary information and by employees who did not have any access to it; The burden of proof that proprietary information which is disclosed resides within one of the exceptions set forth above shall be on the receiving side.
2. Upon completion of the activities under this Plan, the receiving Side or its Related Entities will return or otherwise dispose of all information identified and marked as "Proprietary", with which it has been provided by the other Side or its Related Entities

under this Plan, as directed by the furnishing Side or its Related Entities. Under the terms of this Plan, "Related Entity" includes contractors, subcontractors and cooperating entities of either of the Sides.

3. Each Side shall be responsible to any act of omission of its Related Entity as if it was its own act or omission and before disclosing any Proprietary information to a Related Entity/ third Party, shall obtain the written consent of the other Side.

Article 6

Intellectual Property Rights

1. For the purpose of this Plan, "Intellectual Property" will, as provided in Article-1 of the Agreement on Trade related Aspects of Intellectual Property Rights (TRIPS), refer to all categories of intellectual property that are the subject of Sections 1 through 7 of Part II of the TRIPS Agreement.
2. Nothing in this Plan will be construed as granting, either expressly or by implication, to the other Side any IPR related to, or interest in, any innovation or work of a Side or its Related Entities made prior to the entry into effect of, or outside the scope of, this Plan.
3. Any IPR related to, or interest in, any innovation or work made in the performance of this Plan solely by one Side or any of its Related Entities will be owned only by such Side or its Related Entities. Allocation of IPR between such Side and its Related Entities will be determined by such Side's rules, regulations and applicable contractual obligations.
4. Any innovation or work or IPR that is jointly made by the Sides in the performance of this Plan, the Sides will, in good faith, consult with a view to agreeing on:
 - (a) the allocation of IPR related to, or interest in, such joint innovation or work;
 - (b) the responsibilities, costs, and actions to be taken to establish and maintain the IPR related to, or interest in, such joint innovation or work; and
 - (c) the terms and conditions of any license or other IPR related to, or interest in, such joint innovation or work to be exchanged between the Sides, granted by one Side to the other Side or granted jointly by the Sides to a third Side.
5. The Sides to this Plan will cause their respective Related Entities, to be bound by the provisions of this Article through contractual mechanisms or equivalent measures.

Article 7

Transfer of Technical Data and Goods

1. The Sides are obligated to provide each other only with those goods and technical data (including software) necessary to fulfil their respective responsibilities under this Plan, in accordance with the following provisions:

- (a) Any provision of goods and/or technical data entailed by activities pursuant to this Plan will be carried out in accordance with applicable laws, rules and regulations of the respective Sides pertaining to export control and the control of classified information.
 - (b) All provision of goods and/or technical data, which are either proprietary or export-controlled, are subject to the following provisions. The provision of goods which are subject to export license shall be made only after the necessary approvals are obtained. If required, ISRO shall sign the end use/ end user statement or any similar requirement of the Israeli Export Control Authority. In the event a Side or its Related Entity, including contractor, subcontractor, grantee, cooperating entity, finds it necessary to provide goods and/or technical data, which are either proprietary or export-controlled, for which protection is to be maintained, that Side or its Related Entity will specifically identify and mark them. The identification and marking will specify that these goods and/ or technical data are "Confidential" and/or "export controlled" and they will be used by the receiving Side or its Related Entities only for the purposes of fulfilling the receiving Side's or Related Entity's responsibilities under this Plan. The identified goods and/or technical data, marked proprietary and/or "Confidential" and/or export-controlled, will not be disclosed or retransferred to any other entity without the prior written permission of the furnishing Side or its Related Entity and regarding export controlled items – according to the requirements of the furnishing Side. The receiving Side or Related Entity will abide by the terms of the identification and marking and protect any such identified goods and/or technical data, marked proprietary or export-controlled, from unauthorized use and disclosure. The Sides to this Plan will cause their Related Entities to be bound by the provisions of this Article related to use, disclosure, and retransfer of goods and/or technical data, marked proprietary and/or "Confidential" and/or export-controlled, through contractual mechanisms or equivalent measures.
2. All goods and/or technical data provided by one Side or any of its Related Entities to the other Side or any of its related entities in the performance of this Plan will be used by the receiving Side or Related Entity exclusively for the purpose of this Plan. Upon completion of the activities under this Plan, the receiving Side or Related Entity will return or otherwise dispose of all goods and/or technical data, marked proprietary, confidential or export-controlled, provided under this Plan, as directed by the furnishing Side or Related Entity.

Article 8

Ownership

Except as otherwise agreed in writing by the Sides, each Side will retain ownership of all the goods, hardware, and software, including associated data and ground support equipment, it provides to the other Side under the terms of this Plan, without prejudice to any individual rights of ownership of the Sides' respective contractors and subcontractors.

Article 9

Cross Waiver of Liability

1. With regard to all activities undertaken pursuant to this Plan, neither Side will make any claim against the other, employees of the other, the other's Related Entities, or employees of the other's Related Entities, with respect to any injury to, or death of, its own employees or employees of its Related Entities, or for damage to, or loss of, its own property or that of its Related Entities, whether such injury, death, damage or loss arises through negligence or otherwise, except in the case of gross negligence and willful misconduct.
2. Each Side will extend this cross-waiver of liability to its own Related Entities by requiring them, by contract or otherwise, to waive all claims against the other Side, Related Entities of the other Side, and employees of the other Side or of its Related Entities, for injury, death, damage or loss arising from, or related to, activities undertaken pursuant to this Plan.
3. This cross waiver of liability will not be applicable to:
 - (a) claims between a Side and its own Related Entity or among its own Related Entities;
 - (b) claims made by a natural person, his/her estate, survivors or subrogees for injury, other impairment of health, or death of such natural person; and
 - (c) Intellectual Property and confidentiality claims.
4. This cross-waiver of liability will not be construed as relieving the Sides from any of their respective programmatic responsibilities under this Plan.

Article 10

Consultation and Settlement of Disputes

The Sides will consult with each other on all differences concerning the interpretation or implementation of this Plan. Any dispute arising under this Plan will be resolved through consultations in accordance with article 8 of the Framework Agreement.

Article 11

Modification

This Plan may be modified at any time by written consent of the Sides.

Article 12

Entry into Effect, Duration and Termination

1. This Plan will enter into effect on the day of its signature thereof by the Sides.
2. This Plan will remain in force for an initial period of three (3) years, unless extended by written consent for a fixed period in accordance with Article 11 above.
3. Each Side may terminate this Plan at any time upon giving written notice to the other Side three months prior to the intended date of termination. In that event, the Sides will endeavour to reach an agreement on terms and conditions of the termination to minimise negative impacts of such termination on the other Side. The termination or expiration of this Plan will not affect a Side's continuing rights and obligations under Articles 5, 6, 7, 8 and 9 above to the extent needed to enable the Sides to safeguard their rights and to pursue the remedies and benefits.

IN WITNESS WHEREOF the undersigned being duly authorized by their respective Governments, have signed this MoU.

Done in Bangalore on April 24, 2020, in two originals, in the English language. Both texts being equally authentic.

For ISRO

[Signature]
24/4/2020

Dr. K Sivan

Chairman, ISRO/ Secretary, DOS

Avi Blasberger

For ISA
Director
Israel Space Agency
Ministry of Science & Technology

[Signature]
27/4/2020

Mr. Avi Blasberger

Director General, ISA