

AGREEMENT

between the

AMERICAN INSTITUTE IN TAIWAN

and the

TAIPEI ECONOMIC AND CULTURAL REPRESENTATIVE OFFICE  
IN THE UNITED STATES

to Continue the Application of the Terms of

the Agreement between the Taipei Economic and Cultural Representative Office in the United States and the American Institute in Taiwan for Technical Cooperation associated with Development, Launch and Operation of a Constellation Observing System for Meteorology, Ionosphere and Climate Follow-On Mission (FORMOSAT-7/COSMIC-2)

and

Implementing Arrangement No. 1 to the Agreement

WHEREAS the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office in the United States (TECRO) desire to continue their fruitful cooperation under the 2010 Agreement between the Taipei Economic and Cultural Representative Office in the United States and the American Institute in Taiwan for Technical Cooperation associated with Development, Launch and Operation of a Constellation Observing System for Meteorology, Ionosphere and Climate Follow-On Mission (FORMOSAT-7/COSMIC-2) (the "2010 Agreement") and the 2013 Implementing Arrangement No. 1 to the 2010 Agreement (IA#1), both of which instruments expired by their terms on May 27, 2020;

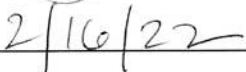
AIT and TECRO have agreed to continue the application of the terms of the 2010 Agreement and IA#1 as follows:

- (1) The terms of the 2010 Agreement, attached at Appendix 1, and as modified in the attached Appendix 2, shall apply until May 27, 2030.
- (2) The terms of IA#1, attached at Appendix 3, and as modified in the attached Appendix 4, shall apply until May 27, 2030, the term of the 2010 Agreement, or until the end of the life of the last satellite of the six satellites launched, whichever occurs first.
- (3) The terms of the 2010 Agreement, attached at Appendix 1, and as modified in the attached Appendix 2, and the terms of IA#1, attached at Appendix 3, and as modified in the attached Appendix 4, shall also apply to cooperation that occurred between May 27, 2020 and the date on which this Agreement becomes effective in accordance with paragraph 4 below.
- (4) This Agreement with Appendices 1-4 becomes effective on the date of the last signature by AIT and TECRO.

Done in duplicate in the English language.


FOR THE AMERICAN INSTITUTE  
IN TAIWAN

  
\_\_\_\_\_  
Ingrid D. Larson (Managing Director)

  
\_\_\_\_\_  
Date

FOR THE TAIPEI ECONOMIC AND  
CULTURAL REPRESENTATIVE OFFICE  
IN THE UNITED STATES

  
\_\_\_\_\_  
Robin J.C. Cheng (Deputy Representative)

  
\_\_\_\_\_  
Date

AGREEMENT

between the

TAIPEI ECONOMIC AND CULTURAL REPRESENTATIVE OFFICE  
IN THE UNITED STATES

and the

AMERICAN INSTITUTE IN TAIWAN

for

TECHNICAL COOPERATION

associated with

DEVELOPMENT, LAUNCH AND OPERATION OF A  
CONSTELLATION OBSERVING SYSTEM FOR  
METEOROLOGY, IONOSPHERE AND CLIMATE  
FOLLOW-ON MISSION (FORMOSAT-7/COSMIC-2)

ARTICLE I – SCOPE

This agreement provides a framework through which the American Institute in Taiwan (AIT), through its designated representative, the National Oceanic and Atmospheric Administration (NOAA), can provide technical expertise, training, and scientific exchange activities to the Taipei Economic and Cultural Representative Office in the United States (TECRO), through its designated representative, the National Space Organization (NSPO) of Taiwan, in areas of mutual interest in the development, launch and operation of a follow-on satellite mission to the Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC), hereafter referred to as FORMOSAT-7/COSMIC-2.

ARTICLE II – OBJECTIVES

The broad objective of this Agreement is to establish a framework to allow AIT, through its designated representative, NOAA, to carry out technical and scientific cooperation with TECRO, through its designated representative, NSPO. The technical and scientific objectives of the cooperation are:

- A. To provide technical and scientific assistance in demonstrating the capabilities of GPS Radio Occultation technology in a real-time operational environment for weather prediction, space weather observation, and climate and global change research.



- B. To demonstrate the advantages and effectiveness of a micro-satellite constellation in terms of risk management, cost and compatibility with existing observational platforms.
- C. To provide professional scientific and engineering collaboration in the development, launch and operation of a constellation of small satellites for atmospheric sensing.
- D. To provide global atmospheric data sets for scientific research and education. Both parties understand that AIT's designated representative, the National Science Foundation (NSF), will continue to work with the Taiwan National Science Council (NSC) in coordinating research and education projects using these and complementary data sets.
- E. To provide technical assistance related to atmospheric sensing techniques using space-based GPS receivers from AIT's designated representative, NOAA, to TECRO's designated representative, NSPO.

### ARTICLE III – COOPERATIVE ACTIVITIES

Specific cooperative activities will be determined after consultations between TECRO and its designated representative, NSPO, and AIT and its designated representative, NOAA. The Parties (TECRO and AIT) agree that they will equally participate in the specific cooperation activities through their respective designated representatives, unless otherwise agreed in the Implementing Arrangements.

- A. The general activity to be conducted under this Agreement is the development, launch and operation of FORMOSAT-7/COSMIC-2. Major tasks include designing and constructing satellites and their instruments, satellite launch, establishment of the operational control centers, verification and analysis of atmospheric data, and dissemination of those data for scientific research and education.
- B. Specific cooperative activities to be conducted under this Agreement will be determined after consultation between TECRO and AIT through their designated representatives, NSPO and NOAA, and will be included in Implementing Arrangements between TECRO and AIT.
- C. Each Implementing Arrangement shall specify the technical scope of the activities, management responsibilities, specific funding arrangements, cost and schedule estimates, procedures to be followed, and, if appropriate, details concerning warranty considerations, treatment of intellectual property, and liability.
- D. All cooperative activities undertaken pursuant to specific Implementing Arrangements under this Agreement shall be subject to the respective and applicable laws, regulations, policies, funding and administrative procedures under which



TECRO and its designated representative, NSPO, and AIT and its designated representative, NOAA, operate.

#### ARTICLE IV – RESPONSIBILITIES OF TECRO

- A. Pursuant to this Agreement, TECRO shall assist AIT in obtaining visas and other documents necessary for personnel of AIT's designated representative, NOAA, who visit the territory of the authorities represented by TECRO under the auspices of AIT in order to carry out this Agreement.
- B. Pursuant to this Agreement, TECRO shall assist AIT in obtaining the necessary permits and authorizations for carrying out the assistance specified in the Implementing Arrangements to this Agreement, including access to facilities and areas under the jurisdiction of TECRO's designated representative, NSPO, by personnel of AIT's designated representative, NOAA, who are in the territory of the authorities represented by TECRO under the auspices of AIT.
- C. TECRO shall, pursuant to this Agreement, assure that AIT and its designated representative, NOAA, are held free and clear of all customs duties and imposition charged by the authorities represented by TECRO. Neither AIT nor its designated representative, NOAA, shall be required to pay any duties or taxes in executing the terms and conditions of this Agreement.

#### ARTICLE V – RESPONSIBILITIES OF AIT

- A. AIT shall, through its designated representative, NOAA, keep accurate and systematic accounts and records with respect to services provided pursuant to this Agreement in such form and detail as is customary, and, through its designated representative, NOAA, shall permit TECRO, or its designated representative, NSPO, to inspect same and make copies thereof as may be reasonably requested.
- B. AIT shall, through its designated representative, NOAA, furnish to TECRO, or its designated representative, NSPO, such information related to the services AIT's designated representative, NOAA, shall provide to TECRO pursuant to this Agreement as may be reasonably requested.
- C. Upon completion of specific services provided to TECRO by AIT as delineated in the Implementing Arrangements to the Agreement, AIT, through its designated representative, NOAA, shall deliver to TECRO through its designated representative, NSPO, hardware and copies of software, technical reports, system documentation, calculations, comments, suggestions, and relevant technical data compiled or prepared by AIT's designated representative, NOAA, in and under this Agreement, subject to any existing Technical Assistance Agreement (TAA) between the Parties. Specific details will be provided in Implementing Arrangements to the Agreement.



- D. To the extent that funds are made available to AIT by TECRO, AIT through its designated representative, NOAA, will make available such personnel, equipment and facilities necessary to carry out activities pursuant to this Agreement.
- E. AIT, through its designated representative, NOAA, shall provide all technical and administrative support and other requirements as may be necessary to complement and supplement the services of personnel of AIT's designated representative, NOAA, who are in the territory of the authorities represented by TECRO under the auspices of AIT.
- F. Pursuant to this Agreement, AIT shall assist TECRO in obtaining visas and other documents necessary for personnel of TECRO's designated representative, NSPO, who visit the territory of the authorities represented by AIT under the auspices of TECRO in order to carry out this Agreement.

#### ARTICLE VI – FINANCIAL ARRANGEMENTS

Pending formal funding approval, execution of funding will be conducted in the following manner:

- A. The financial arrangements and terms of payments will be specified and mutually agreed to in the Implementing Arrangements to this Agreement, it being the Parties' understanding that their designated representatives will each contribute to the funding for the specific cooperative activities in proportion to their respective participation in such activities.
- B. AIT shall provide TECRO with documentation supporting requests for reimbursement in accordance with the standard financial regulations and practices of AIT and its designated representative, NOAA.
- C. TECRO shall provide AIT with documentation supporting requests for reimbursement in accordance with standard financial regulations and practice of TECRO and its designated representative, NSPO.
- D. Pursuant to Article III, each Implementing Arrangement shall specify funding and payment arrangements for activities covered by the Implementing Arrangement and shall include the estimated budget for at least the first year of activity.

#### ARTICLE VII – INTELLECTUAL PROPERTY CONSIDERATIONS

- A. TECRO and its designated representative, NSPO, and AIT and its designated representative, NOAA, support the widest possible dissemination of information provided, exchanged or arising under this Agreement, subject to the need to protect pre-existing proprietary information, patent, and copyright restrictions, and subject to any existing TAA between the Parties.



- B. Details concerning intellectual property considerations and information dissemination will be specified in each Implementing Arrangement to this Agreement.
- C. Information transmitted by either Party to this Agreement or by the Party's designated representative to the other Party or its designated representative shall be accurate to the best knowledge and belief of the transmitting Party or transmitting designated representative, as delineated in the Implementing Arrangement to this Agreement.

#### ARTICLE VIII – EFFECTIVE DATE

This Agreement will become effective for ten (10) years on the date of the last signature.

#### ARTICLE IX – AMENDMENT AND TERMINATION

This Agreement, and its Implementing Arrangements, may be amended by the mutual written agreement of TECRO and AIT.

This Agreement may be terminated by either Party at any time by notification to the other party in writing sixty (60) days in advance of the desired termination date. Termination of this Agreement also terminates at the same time all Implementing Arrangements issued hereunder, unless they have been previously terminated. It is understood that an attempt will be made to reach mutual agreement on the termination dates to allow orderly termination of activities and repatriation of personnel, settlement with sub-tier suppliers, the determination of settlement costs, and the distribution of project inventories and supplies. The equitable adjustment for any termination shall provide for payment to TECRO's designated representative, NSPO, or AIT's designated representative, NOAA, as the case may be, for services rendered and expenses incurred prior to the termination, in addition to termination settlement costs reasonably incurred by NSPO or NOAA, as the case may be, relating to commitments that became firm prior to termination.

#### ARTICLE X – RESOLUTION OF DIFFICULTIES

TECRO and AIT shall consult, upon request of either Party or their designated representatives, regarding any matter related to the terms of this Agreement, and shall endeavor jointly, in a spirit of cooperation and mutual trust, to resolve by informal means for a period of sixty (60) days any difficulties or misunderstandings that may arise.

#### ARTICLE XI – SURVIVING PROVISIONS

The provisions of Article VII shall survive the expiration of this Agreement.

#### ARTICLE XII – FORCE MAJEURE

Any event of Force Majeure shall constitute an excusable delay. Examples include, but are not limited to, embargo, quarantine, war, public disorders, explosions, fire, earthquake or other acts of God, the suspension, cancellation or failure to receive



necessary permissions, or any other condition beyond the control of the Parties or designated representatives affected. Such delays shall excuse the affected Party or designated representative from performance during the period when prevented, not terminate the Agreement, and the Parties and their designated representatives are required to resume performance as promptly as possible, using all best efforts to remove the cause of non-performance.

ARTICLE XIII – DESIGNATED REPRESENTATIVES’ POINTS OF CONTACT

The points of contact for the designated representatives are as follows below, which may be changed from time to time.

For NSPO:

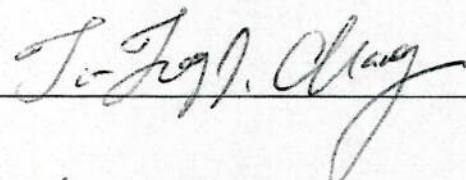
National Space Organization of National  
Applied Research Laboratories  
8F, No. 9 Prosperity Road 1  
Science-Based Industrial park  
Hsin-Chu 30077, Taiwan  
Attn: Dr. Guey-Shin Chang  
Telephone: 886-3-5784208, x 8101  
Fax: 886-3-5784210  
Email: [gschang@nspo.org.tw](mailto:gschang@nspo.org.tw)

For NOAA:

National Oceanic and Atmospheric  
Administration  
1335 East West Highway, 6<sup>th</sup> floor  
Silver Spring, MD 20910  
SSMC1, E/OSD  
Attn: Gary Davis  
Telephone: 301-713-0100  
Fax: 301-713-3599  
Email: [gary.davis@noaa.gov](mailto:gary.davis@noaa.gov)

FOR THE TAIPEI ECONOMIC AND  
CULTURAL REPRESENTATIVE  
OFFICE IN THE UNITED STATES

FOR THE AMERICAN INSTITUTE IN  
TAIWAN



May 27, 2010  
Date



5/27/10  
Date



AMENDMENT NO. 1  
TO THE AGREEMENT BETWEEN  
TAIPEI ECONOMIC AND CULTURAL REPRESENTATIVE OFFICE IN THE UNITED  
STATES  
and the  
THE AMERICAN INSTITUTE IN TAIWAN  
for  
TECHNICAL COOPERATION  
associated with

DEVELOPMENT, LAUNCH AND OPERATION OF A CONSTELLATION OBSERVING  
SYSTEM FOR METEOROLOGY, IONOSPHERE AND CLIMATE FOLLOW-ON MISSION  
(FORMOSAT-7/COSMIC-2)

WHEREAS, the Taipei Economic and Cultural Representative Office in the United States (TECRO) and the American Institute in Taiwan (AIT) concluded an Agreement for Technical Cooperation associated with Development, Launch and Operation of a Constellation Observing System for Meteorology, Ionosphere and Climate Follow-on Mission (FORMOSAT-7/COSMIC-2), concluded on 27 May 2010 (hereinafter referred to as the Agreement), and

RECOGNIZING, that fruitful cooperation conducted pursuant to the Agreement is ongoing,

TECRO and AIT agree to amend the Agreement as follows:

Amend the Designated Representatives' Points of Contact by deleting Article XIII and replacing it with the following:

ARTICLE XIII – DESIGNATED REPRESENTATIVES' POINTS OF CONTACT

The Parties shall provide contact information by separate written communication.

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All other Articles of the Agreement remain unchanged.

**IMPLEMENTING ARRANGEMENT NO.1 TO THE AGREEMENT**

**between the**

**TAIPEI ECONOMIC AND CULTURAL REPRESENTATIVE OFFICE  
IN THE UNITED STATES**

**and the**

**AMERICAN INSTITUTE IN TAIWAN**

**for**

**TECHNICAL COOPERATION**

**associated with**

**DEVELOPMENT, LAUNCH AND OPERATION OF A CONSTELLATION OBSERVING  
SYSTEM FOR METEOROLOGY, IONOSPHERE AND CLIMATE FOLLOW-ON MISSION  
(FORMOSAT-7/COSMIC-2)**

WHEREAS, the Taipei Economic and Cultural Representative Office in the United States (TECRO) and the American Institute in Taiwan (AIT) signed an Agreement for Technical Cooperation associated with Development, Launch and Operation of a Constellation Observing System for Meteorology, Ionosphere and Climate Follow-on Mission (FORMOSAT-7/COSMIC-2), dated 27 May 2010 (the Agreement), which provides a framework through which AIT, through its designated representative, the National Oceanic and Atmospheric Administration (NOAA), can provide technical expertise, training, and scientific exchange activities to TECRO, through its designated representative, the National Space Organization (NSPO) of Taiwan, in areas of mutual interest in the development, launch and operation of a follow-on satellite mission to the Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC), hereinafter referred to as FORMOSAT-7/COSMIC-2. The broad objective of the Agreement is to establish a framework to allow AIT, through its designated representative NOAA, to carry out technical and scientific cooperation with TECRO, through its designated representative NSPO.

This Implementing Arrangement No.1 (IA#1) describes the cooperative activities to be undertaken by TECRO's designated representative, NSPO, and AIT's designated representative, NOAA, to carry out technical and scientific cooperation in seven areas related to the development, launch and operation of a satellite constellation for atmospheric sensing, for the purpose of demonstrating the capabilities of Global Navigation Satellite System (GNSS) Radio Occultation (RO) technology and science payloads in a real-time operational environment for



weather prediction, space weather observation, and climate and global change research and to provide global atmospheric data sets for scientific research and education.

### Article 1 – Authorization

The activities described in this IA#1 will be carried out under the general terms and conditions established by the Agreement under which NSPO is TECRO's designated representative and NOAA is AIT's designated representative.

### Article 2 – Technical Scope of Cooperative Activities and Schedule

- 2.1 Specific cooperative activities are to be determined by TECRO, through its designated representative NSPO, and AIT, through its designated representative NOAA, in seven mission-related areas as follows: Mission, Spacecraft Bus, Payloads, Launch System, Ground System, Mission Operation and Data System.
- 2.2 Objectives of the mission will include demonstrating the capabilities of GNSS RO technology in a real-time operational environment for weather prediction, space weather observation, and climate and global change research and demonstrating the advantages and effectiveness of a satellite constellation in terms of risk management, cost and compatibility with existing observational platforms.
- 2.3 The duration of the mission shall be compliant with Article VIII of the Agreement, and shall be subject to the availability of appropriated funds and the respective funding procedures of TECRO's designated representative, NSPO, and AIT's designated representative, NOAA.

### Article 3 – Financial Arrangements

- 3.1 TECRO's designated representative, NSPO, and AIT's, designated representative, NOAA, will each be responsible for funding their respective activities under this IA#1. In general, there will be no exchange of funds between TECRO's designated representative, NSPO, and AIT's designated representative, NOAA. The financial obligations of NSPO and NOAA, as designated representatives of their respective Parties, are subject to their respective funding procedures and to the availability of appropriated funds. The Parties understand that if either Party, through its designated representatives, is not able to secure the necessary resources to carry out its obligations, such circumstance would be a basis for termination of this IA#1 in accordance with Article 17 of this IA#1 and Article IX of the Agreement. Should TECRO, through its designated representative, NSPO, and AIT, through its designated representative, NOAA, determine that there is a need to transfer funds to facilitate the implementation of one Party's responsibilities by the other, a written amendment to the IA #1 will be negotiated and executed by the Parties. Such



transfers would be subject to the terms of the Agreement and to such specific funding arrangements and procedures as may be agreed to in writing by the Parties.

3.2 Unless otherwise agreed between the Parties, the following shall apply:

All costs of transporting an instrument or ground equipment, including taxes, insurance, and other fees, to their final destination shall be borne by the Party's designated representative that owns the instrument or equipment. Once an instrument has been integrated onto a spacecraft, all costs of transporting the spacecraft with the instrument(s) so integrated, including taxes, insurance, and other fees, to its final destination shall be borne by the Party's designated representative that owns the spacecraft. In the event an instrument that was integrated onto a spacecraft is thereafter removed from the spacecraft, the full cost of transporting the instrument to a subsequent location, including taxes, insurance, and other fees, shall be borne by the Party's designated representative that owns the instrument. All costs related to the return of ground equipment to a Party's designated representative that owns the equipment shall be borne by such designated representative.

Article 4 - Management Responsibilities

TECRO, through its representative, NSPO, and AIT, through its representative, NOAA, will jointly manage the FORMOSAT-7/COSMIC-2 Program under the guidance of an Executive Steering Committee (ESC), and through a NSPO-NOAA Joint Program Management Office (JPMO).

Article 5 – Responsibilities of TECRO

- 5.1 Mission - TECRO, through its designated representative, NSPO, will jointly define the FORMOSAT-7/COSMIC-2 Mission with AIT, through its designated representative, NOAA.
- 5.2 Spacecraft Bus - TECRO, through its designated representative, NSPO, will provide six spacecraft buses with an option for six more and integration of payloads onto the spacecrafts. TECRO, through its designated representative NSPO, will assure that launch system and ground system information provided by AIT, through its designated representative, NOAA, is taken into account in selection of spacecraft buses to be provided by TECRO, through its designated representative, NSPO.
- 5.3 Payloads - TECRO, through its designated representative, NSPO, will provide a Taiwan science payload suite for each of the six high-inclination satellites.



- 5.4 Launch System - TECRO, through its designated representative, NSPO, will assure that the spacecraft buses provided by TECRO, through its designated representative, NSPO, are compatible with the launch systems provided by AIT, through its designated representative, NOAA, with the support of the United States Air Force (USAF). TECRO, through its designated representative, NSPO, will provide for the launch dispensers and integration support to the launch vehicle.
- 5.5 Ground System – TECRO, through its designated representative, NSPO, will provide the FORMOSAT-7/COSMIC-2 Satellite Operations Control Center (SOCC) and Taiwan ground data acquisition facilities.
- 5.6 Mission Operations - TECRO, through its designated representative, NSPO, will provide constellation deployment and normal mission operations through the SOCC. TECRO, through its designated representative NSPO, will make best efforts to follow established guidelines and best practices with respect to orbital debris mitigation.
- 5.7 Data System – TECRO, through its designated representative, NSPO, will provide the Taiwan Data Processing Center to process, archive and distribute data from the FORMOSAT-7/COSMIC-2 mission for weather forecasting, space weather monitoring and for meteorological, climatic, ionospheric and geodetic research.
- 5.8 TECRO, through its designated representative, NSPO, will consult with AIT, through its designated representative, NOAA, to consider including in the program one additional 13<sup>th</sup> satellite and to consider what responsibilities may be feasible for the Parties to undertake in connection with such additional satellite. As may be appropriate, and as agreed by the Parties, specific understandings will be the subject of a subsequent amendment to this IA #1.

#### Article 6 - Responsibilities of AIT

- 6.1 Mission – AIT, through its designated representative, NOAA, will jointly define the FORMOSAT-7/COSMIC-2 Mission with TECRO, through its designated representative, NSPO.
- 6.2 Spacecraft Bus – AIT, through its designated representative, NOAA, will assure that the spacecraft bus information provided by TECRO, through its designated representative, NSPO, is taken into account in selection of launch systems and ground systems to be provided by AIT, through its designated representative, NOAA.
- 6.3 Payloads - AIT, through its designated representative, NOAA, with the support of the United States Air Force (USAF), will provide six GNSS RO payloads, with an option to provide six more as may be agreed by AIT, through its designated representative NOAA ,



and TECRO, through its designated representative, NSPO, and two United States science payloads for each of the six low-inclination satellites.

- 6.4 Launch System –AIT, through its designated representative, NOAA, with the support of the USAF, will provide one launch for six satellites into low-inclination orbit with an option for one more launch for six satellites into high-inclination orbit as may be agreed by AIT, through its designated representative NOAA , and TECRO, through its designated representative, NSPO. AIT, through its designated representative, NOAA, with the support of the USAF, will make best efforts to follow established guidelines and best practices with respect to orbital debris mitigation.
- 6.5 Ground System – AIT, through its designated representative, NOAA, will initiate FORMOSAT-7/COSMIC-2 ground data acquisition architecture planning.
- 6.6 Mission Operations - AIT, through its designated representative, NOAA, with the support of the USAF, will provide launch and early-orbit operations, in coordination with TECRO, through its designated representative, NSPO.
- 6.7 Data System – AIT, through its designated representative, NOAA, will provide the United States Data Processing Center to process, archive and distribute data from the FORMOSAT-7/COSMIC-2 Mission for weather forecasting, space weather monitoring, and meteorological, climatic, ionospheric and geodetic research. AIT, through its designated representative, NOAA, will provide technical assistance related to atmospheric sensing techniques using space-based GNSS RO receivers to TECRO’s designated representative, NSPO.
- 6.8 AIT, through its designated representative, NOAA, will consult with TECRO, through its designated representative, NSPO, to consider including in the program one additional 13<sup>th</sup> satellite and to consider what responsibilities may be feasible for the Parties to undertake in connection with such additional satellite. As may be appropriate, and as agreed by the Parties, specific understandings will be the subject of a subsequent amendment to this IA #1.

#### Article 7 – Data Validation and Distribution

Data from the FORMOSAT-7/COSMIC-2 mission will be made available on a full and open basis by TECRO’s designated representative, NSPO, and AIT’s designated representative, NOAA.

#### Article 8 – Data Availability and Integrity

TECRO, through its designated representative, NSPO, and AIT, through its designated representative, NOAA, in coordination with the USAF, will coordinate to assure that information security measures for protecting the availability and integrity of mission data are in place and



will comply with their respective information security requirements and policies, consistent with established guidelines and best practices.

#### Article 9 – Intellectual Property Considerations

Activities under this IA#1 will be carried out consistent with Article VII of the Agreement, on intellectual property considerations. Unless otherwise agreed, either Party, through its designated representative, will retain the sole and exclusive ownership of any technical or proprietary information conceived, developed or produced by such Party, through its designated representative, prior to and during the course of the implementation of this IA#1.

#### Article 10 – Transfer of Goods and Technical Data

- 10.1 TECRO, through its designated representative, NSPO, and AIT, through its designated representative, NOAA, will exchange those goods and technical data (including software) necessary to fulfill their respective responsibilities under this IA#1, in accordance with the following provisions.
- 10.2 The transfer of goods and technical data for the purpose of discharging the responsibilities of TECRO's designated representative, NSPO, and AIT's designated representative, NOAA, shall normally be made without restriction, subject to the need to protect pre-existing proprietary information, patent, and copyright restrictions, and subject to any existing applicable Technical Assistance Agreements (TAAs) and any necessary export licenses.
- 10.3 Nothing in this IA#1 is intended to require or entail the transfer of technical data, software and goods contrary to relevant laws relating to export control.
- 10.4 All transfers under this IA#1 shall be carried out in accordance with all applicable laws, rules, and regulations.

#### Article 11 – Title and Risk

Title and risk of loss and damage to supplies, defined for the purposes of this Article to include hardware and software provided under this IA#1, is retained by the designated representative of the providing Party. If a supply is lost or damaged, the designated representative of the providing Party, in consultation with the designated representative of the other Party, shall determine whether the designated representative of the providing Party shall restore the supply.

#### Article 12 – Accommodation and Access

- 12.1 TECRO, through its designated representative, NSPO, and AIT, through its designated representative, NOAA, shall facilitate customs clearance and freedom from import duties, taxes or similar charges for mission-related equipment moving between the territories of the authorities represented by TECRO and AIT.



- 12.2 Each Party, through its designated representative, shall assist the personnel of the other Party's designated representative to obtain the visas, work permits, and/or other documents or approvals necessary for the performance of duties under this IA#1.

#### Article 13 - Liability and Consultation

- 13.1 TECRO, through its designated representative, NSPO, and AIT, through its designated representative, NOAA, do not guarantee the timeliness or suitability of the data for any purpose and are not liable for damages that may result from the defective operation of the FORMOSAT-7/COSMIC-2 system.
- 13.2 In the event of a third party claim arising out of activities under this IA#1, including those arising under the 1972 Convention on International Liability for Damage Caused by Space Objects, the Parties shall consult promptly on any potential liability, on any apportionment of such liability, and on the defense of such claim. Any apportionment of liability with regard to third party claims arising out of the activities under this IA#1 shall take into consideration that AIT, through its designated representative, NOAA, is conducting the launch of FORMOSAT-7 satellites, and in accordance with Article 14, the authorities represented by TECRO will thereafter possess sole jurisdiction and control of any FORMOSAT-7 satellites launched under this IA #1.
- 13.3 The Parties agree to consult promptly to resolve any potential claims arising out of the activities under this IA#1 between themselves, their designated representatives, and/or the authorities they represent.

#### Article 14 – Registration of Space Objects

- 14.1 Bearing in mind Article VIII of the 1967 Treaty on Principles Governing Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, TECRO will ensure that the FORMOSAT-7 satellites are carried on the registry maintained by the authorities it represents, and confirms that the authorities it represents will retain jurisdiction and control of such satellites.

#### Article 15 –Parties' and Parties' Designated Representatives' Points of Contact

The Parties' and the Parties' designated representatives points of contact are:

TECRO

The Taipei Economic and Cultural Representative Office in the United States

4201 Wisconsin Avenue, N.W.

Washington, D.D. 20016

Telephone No: 202-895-1895

Facsimile No: 202-966-8639

Attention: Dr. Ta-Tung Jacob Chang



NSPO (TECRO's Designated Representative)  
National Space Organization, National Applied Research Laboratories (NARL).  
8F, No. 9, Prosperity Road 1, Science-Based Industrial Park,  
Hsin-Chu, Taiwan, ROC  
Telephone No: 886-3-578-4208 ext.8101  
Facsimile No: 886-3-578- 4210  
Attention: Dr. Guey-Shin Chang

AIT  
The American Institute in Taiwan  
1700 North Moore Street, Suite 1700  
Arlington, VA 22209  
Telephone No.: 703-525-8474  
Facsimile No.: 703-841-1385  
Attention: Ms. Barbara Schrage

NOAA (AIT's Designated Representative)  
Office of Systems Development (OSD) E/OSD 1  
National Environmental Satellite, Data and Information Service (NESDIS)  
1335 East West Highway Room 6223  
Silver Spring, MD 20910 U.S. A.  
Telephone No: 301-713-7323 Mobile: 301-807-3524  
Facsimile No.: 301-713-3599  
Attention: Mr. Peter Wilczynski

#### Article 16 – Release of Public Information

- 16.1 To the extent consistent with the laws of the authorities TECRO and AIT represent, TECRO's and AIT's designated representatives, NSPO and NOAA, respectively, will coordinate with each other on all public release of information regarding the FORMOSAT-7/COSMIC-2 Program.
- 16.2 In any release of information relating to the FORMOSAT-7/COSMIC-2 Mission, such release shall include a statement to the effect that the FORMOSAT-7/COSMIC-2 Program or effort depicted was or is jointly sponsored by NSPO and NOAA, as designated representatives of TECRO and AIT. For the purpose of this clause, "information" includes, but is not limited to, news releases, articles, manuscripts, brochures, advertisements, still and motion pictures, speeches, trade association meetings, symposia, etc.

#### Article 17 – Effective Date, Amendment and Termination

This IA#1 is effective on the date of the last signature hereafter and will remain in effect through the term of the Agreement or until the end of the life of the last satellite launched, whichever



occurs first. This IA#1 may be amended, extended and/or terminated by the mutual written agreement of TECRO and AIT in accordance with the terms of the Agreement. This IA#1 is done in two versions in the English language. A TECRO-AIT version and an AIT-TECRO version are both equally valid.

Article 18 – Surviving Provisions

18.1 The provisions of Articles 7, 8, 9, 13, 14, and 16 of this IA#1 shall survive the expiration of this IA#1 and the Agreement.

FOR THE TAIPEI ECONOMIC AND  
CULTURAL REPRESENTATIVE OFFICE  
IN THE UNITED STATES

*Jas-Jung Chang*  
May 29, 2013  
Date

FOR THE AMERICAN INSTITUTE IN  
TAIWAN

*Chun-F. Sheng*  
4/26/13  
Date



**AMENDMENT NO. 1**  
**TO IMPLEMENTING ARRANGEMENT NO. 1 TO THE AGREEMENT**  
between the  
**TAIPEI ECONOMIC AND CULTURAL REPRESENTATIVE OFFICE**  
**IN THE UNITED STATES**  
and the  
**AMERICAN INSTITUTE IN TAIWAN**  
for  
**TECHNICAL COOPERATION**  
associated with  
**DEVELOPMENT, LAUNCH AND OPERATION OF A CONSTELLATION OBSERVING SYSTEM FOR**  
**METEOROLOGY, IONOSPHERE AND CLIMATE FOLLOW-ON MISSION**  
**(FORMOSAT-7/COSMIC-2)**

WHEREAS, the Taipei Economic and Cultural Representative Office in the United States (TECRO) and the American Institute in Taiwan (AIT) concluded the Agreement for Technical Cooperation associated with Development, Launch and Operation of a Constellation Observing System for Meteorology, Ionosphere and Climate Follow-on Mission (FORMOSAT-7/COSMIC-2), on 27 May 2010 (hereinafter referred to as the Agreement) and the Implementing Arrangement No. 1 to the Agreement (IA#1) on 29 May 2013. IA#1 describes the cooperative activities to be undertaken under the Agreement by TECRO, through its designated representative, the National Space Organization (NSPO) of Taiwan, and AIT, through its designated representative, the National Oceanic and Atmospheric Administration (NOAA) of the United States, to carry out technical and scientific cooperation in development, launch and operation of a satellite constellation for atmospheric sensing which consists of six satellites in a low-inclination orbit and an option for an additional six satellites in a high-inclination orbit. The objectives of the mission are to demonstrate the capabilities of Global Navigation Satellite System (GNSS) Radio Occultation (RO) technology and science payloads in a real-time operational environment for weather prediction, space weather observation, and climate and global change research and to provide global atmospheric data sets for scientific research and education.



The Joint Program through its Executive Steering Committee decided on 16 October 2017 not to exercise the option for the second launch of six satellites into polar orbit, FORMOSAT-7/COSMIC-2B.

The purpose of this Amendment No. 1 (Amendment No. 1) to IA#1 is to amend IA#1 to reflect the Joint Program decision not to exercise the option for the second launch of six satellites into polar orbit, FORMOSAT-7/COSMIC-2B; and to document the understanding to consider extending scientific collaboration through GNSS systems under IA#1 through exchange of information on NOAA and Taiwan activities on calibration of data from the NASA CYGNSS mission and planning activities on the NSPO-built spacecraft and NSPO GNSS reflectometry instrument that NSPO refers to together as FORMOSAT-7R, also called Triton, as referenced below in (4), revision of Article 5.8, and (8) revision of Article 6.8.

Accordingly, pursuant to Article 17 of IA#1, Effective Date, Amendment and Termination, TECRO, through its designated representative, NSPO, and AIT, through its designated representative, NOAA, having reviewed IA#1, have agreed to amend IA#1 as follows:

(1) Article 5.2 Spacecraft Bus is amended to read:

5.2 Spacecraft Bus - TECRO, through its designated representative, NSPO, will provide six spacecraft buses and integration of payloads onto the spacecraft. TECRO, through its designated representative NSPO, will assure that launch system and ground system information provided by AIT, through its designated representative, NOAA, is taken into account in selection of spacecraft buses to be provided by TECRO, through its designated representative, NSPO.

(2) Article 5.3 Payloads is amended to read:

5.3 Payloads - TECRO, through its designated representative, NSPO, will provide the NSPO Triton GNSS reflectometry instrument for consideration for extending collaboration in GNSS systems under this IA#1. As may be appropriate, and as may be agreed by the Parties, specific understandings and respective responsibilities may be the subject of a subsequent amendment to this IA#1.

(3) Article 5.6 Mission Operations is amended to read:

5.6 Mission Operations – TECRO, through its designated representative NSPO, will provide constellation deployment and normal mission operations through the SOCC and Taiwan ground data acquisition facilities and make best efforts to maximize the operational and scientific return of the data collected by the FORMOSAT-7/COSMIC-2 instruments in



coordination with AIT, through its designated representative NOAA. TECRO, through its designated representative NSPO, will follow established guidelines and best practices with respect to orbital debris mitigation and collision avoidance.

(4) Article 5.8 is amended to read:

5.8 TECRO, through its designated representative, NSPO, will consult with AIT, through its designated representative, NOAA, to consider extending scientific collaboration through GNSS systems under this IA#1 through exchange of information on NOAA and Taiwan activities on calibration of data from the NASA CYGNSS mission and science planning activities on the NSPO Triton GNSS reflectometry instrument. In this connection, TECRO, through its designated representative, NSPO, and AIT, through its designated representative, NOAA, will consult on launch, operations, ground stations as well as science for Triton. As may be appropriate, and as may be agreed by the Parties, specific understandings and respective responsibilities may be the subject of a subsequent amendment to this IA#1.

(5) Article 6.3 Payloads is amended to read:

6.3 Payloads – AIT, through its designated representative, NOAA, with the support of the United States Air Force (USAF), will provide six GNSS RO payloads and two United States science payloads for each of the six satellites.

(6) Article 6.4 Launch System is amended to read:

6.4 Launch System -- AIT, through its designated representative, NOAA, with the support of the USAF, will provide one launch for six satellites into low-inclination orbit. AIT, through its designated representative, NOAA, with the support of the USAF, will follow established guidelines and best practices with respect to orbital debris mitigation and collision avoidance.

(7) Article 6.6 Mission Operations is amended to read:

6.6 Mission Operations – AIT, through its designated representative, NOAA, with the support of the USAF and its other partners, will provide launch and payload early-orbit operations and a network of ground stations to assure ground data acquisition that meets required data latency and make best efforts to maximize the operational and scientific return of the data collected by the FORMOSAT-7/COSMIC-2 instruments in coordination with TECRO, through its designated representative NSPO.

(8) Article 6.8 is amended to read:

6.8 AIT, through its designated representative, NOAA, will consult with TECRO, through its designated representative, NSPO, to consider extending scientific collaboration through GNSS systems under this IA#1 through exchange of information on NOAA and Taiwan activities on calibration of data from the NASA CYGNSS mission and science planning



activities on the NSPO Triton GNSS reflectometry instrument. In this connection, AIT, through its designated representative, NOAA, and TECRO, through its designated representative, NSPO, will consult on launch, operations, and ground stations, as well as science, for Triton. As may be appropriate, and as may be agreed by the Parties, specific understandings and respective responsibilities may be the subject of a subsequent amendment to this IA#1.

(9) Article 15 – Parties’ and Parties’ Designated Representatives’ Points of Contact is amended to read:

The Parties shall provide updated contact information for the Parties and the Parties’ designated representatives by separate written communication.

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All other Articles of IA#1 remain unchanged.