

AGREEMENT

between the

TAIPEI ECONOMIC AND CULTURAL REPRESENTATIVE OFFICE
IN THE UNITED STATES

and the

AMERICAN INSTITUTE IN TAIWAN
for

TECHNICAL COOPERATION

associated with

ESTABLISHING SATELLITE-BASED MARINE OIL POLLUTION AND MARINE DEBRIS
MONITORING COLLABORATIVE ACTIVITY

ARTICLE I – SCOPE

This Agreement provides a framework through which the Taipei Economic and Cultural Representative Office in the United States (TECRO), through its designated representatives, the Ocean Conservation Administration, Ocean Affairs Council (OCA, OAC) and the Center for Space and Remote Sensing Research (CSRSR) of the National Central University of Taiwan, can provide technical and scientific assistance and a limited amount of FORMOSAT series satellite imagery and Unmanned Aerial Vehicle images to the American Institute in Taiwan (AIT), through its designated representative, the National Oceanic and Atmospheric Administration (NOAA). In addition, this Agreement provides a framework through which AIT, through its designated representative NOAA, can provide technical and scientific assistance and emergency operational support to TECRO, through its designated representatives, OCA, OAC and CSRSR, in the area of satellite-based oil spill and marine debris detection, monitoring and analysis.

ARTICLE II – AUTHORITIES

The Agreement is entered into pursuant to the Taiwan Relations Act, Public Law 96-8 (22 USC 3301 et seq.).

ARTICLE III – BACKGROUND AND OBJECTIVE

TECRO, through its designated representatives OCA, OAC and CSRSR, and AIT, through its designated representative NOAA, have ongoing satellite-based marine oil spill monitoring and satellite-based and Unmanned Aerial Vehicle marine debris monitoring to help authorities mitigate pollution. The crucial importance of this work is underscored for AIT, through its designated representative NOAA, by the disastrous Deepwater Horizon oil spill and the tremendous utility of satellite imagery to help task resources, inform the public, plan the response and otherwise mitigate the damage. The importance of this work for TECRO, through its designated representatives OCA, OAC and CSRSR, is underscored by the numerous environmentally and ecologically significant oil spills in the greater coastal area around Taiwan. Developments and enhancements in satellite and Unmanned Aerial Vehicle technology have improved large-scale monitoring capabilities and assessment of spatial distribution. In addition, marine debris has also become not only a regional but global environmental issue.

AIT, through its designated representative NOAA, has extensive experience using Synthetic Aperture Radar (SAR) imagery to detect oil in the ocean. Moreover, most oil-related expertise and development work in support of oil detection activities of AIT, through its designated representative NOAA, rely on SAR algorithms and techniques. Oil analysis operations conducted by AIT, through its designated representative NOAA, are 24 x 7 x 365, and extensive measures are in place including offsite backup capabilities to assure its operational continuity. AIT, through oil analysis personnel of its designated representative NOAA, has developed expertise for interpretation of very high resolution visible/multispectral satellite imagery for oil detection. AIT, through its designated representative NOAA, has limited access to very high resolution visible/multispectral satellite imagery such as that available from the FORMOSAT series satellites. These limitations in the acquisition, use and technical development of visible/multispectral imagery for oil detection adversely impacts the readiness of AIT, through its designated representative NOAA, for oil spills.

TECRO, through oil analysis personnel of its designated representatives OCA, OAC and CSRSR, has considerable experience with detecting oil in visible/multispectral satellite imagery, and TECRO, through its designated representatives OCA, OAC and CSRSR, is actively developing algorithms and other tools to enhance this detection. In addition, the FORMOSAT series satellite imagery provides an invaluable source of such imagery to support oil analysis operations of TECRO through its designated representatives OCA, OAC and CSRSR. However, the experience of TECRO, through its designated representatives OCA, OAC and CSRSR, with SAR algorithms and techniques for oil spill detection is limited. Moreover, TECRO, through the oil analysis group of its designated representatives OCA, OAC and CSRSR, is a small 8 x 5

operation that could use additional support in the event of a large-scale oil spill where 24 x 7 support is needed.

AIT, through its designated representative NOAA, has implemented marine debris monitoring and assessment, as well as moving toward increased ability to quantify and categorize types of marine debris. AIT, through its designated representative NOAA, investigates marine debris sources and implements preventive actions. AIT, through its designated representative NOAA, can benefit from experience in acquiring images from the Unmanned Aerial Vehicle database and using artificial intelligence technology for marine debris automatic identification technology, which could facilitate tracking of marine debris sources and implementation of preventive actions to reduce marine debris.

TECRO, through its designated representatives OCA, OAC and CSRSR, has used Unmanned Aerial Vehicle technology to monitor marine debris, as well as being keen to develop artificial intelligence technology for marine debris automatic identification technology and a marine debris image database. TECRO, through its designated representatives OCA, OAC and CSRSR, can benefit from obtaining long-term marine debris monitoring procedures and experience that could facilitate preventive actions to reduce marine debris.

The objective of this Agreement is to enhance the oil pollution and marine debris analysis operations of both TECRO, through its designated representatives OCA, OAC and CSRSR, and AIT, through its designated representative NOAA, by establishing a working relationship to allow each organization to benefit from the strengths of the other.

ARTICLE IV – COOPERATIVE ACTIVITIES

AIT agrees to, through its Designated Representative NOAA:

- A. provide TECRO, through its designated representatives OCA, OAC and CSRSR, with training in the use of SAR imagery for satellite-based oil detection, share algorithms and help TECRO, through its designated representatives OCA, OAC and CSRSR, install and use any such SAR-based oil detection algorithms;
- B. by phone or email, provide a "second opinion" upon request for any SAR image showing possible oil;
- C. in the event of a significant emergency, provide requested assistance/backup to effectively extend hours of coverage available to TECRO, through its designated representatives OCA, OAC and CSRSR;

- D. provide technical advice about the possible use of the International Charter Space and Major Disasters assets to mitigate a major oil spill; and
- E. share experiences of marine debris monitoring, prevention, removal, research, education and promotion with TECRO, through its designated representatives OCA, OAC and CSRSR.

TECRO agrees to, through its designated representatives OCA, OAC and CSRSR:

- A. provide AIT, through its designated representative NOAA, with training in the use of visible/multispectral imagery for satellite-based oil detection, share algorithms and help AIT, through its designated representative NOAA, install and use any visible/multispectral-based oil detection algorithms or procedures or "toolbars" that TECRO, through its designated representatives OCA, OAC and CSRSR, currently uses;
- B. by phone or email, provide a "second opinion" upon request for any visible/multispectral image showing possible oil;
- C. provide at no charge up to 30 FORMOSAT series satellite images in response to requests from AIT, through its designated representative NOAA;
- D. assist in obtaining any necessary authorizations for carrying out the assistance specified in this Agreement, including access to facilities and areas under the jurisdiction of TECRO's designated representatives, OCA, OAC and CSRSR, by personnel of AIT's designated representative NOAA, who are in the territory of the authorities represented by TECRO under the auspices of AIT; and
- E. share experience with using artificial intelligence technology for marine debris automatic identification technology and marine debris image database with AIT, through its designated representative NOAA.

ARTICLE V – FINANCIAL ARRANGEMENTS

TECRO, through its designated representatives OCA, OAC and CSRSR, and AIT, through its designated representative NOAA, are responsible for funding their own activities under this Agreement. The ability of the Parties and their designated representatives to carry out obligations under this Agreement is subject to the funding procedures, law, and regulations of the respective organizations and to the availability of appropriated funds.

ARTICLE VI – DATA AVAILABILITY AND INTEGRITY

TECRO, through its designated representatives OCA, OAC and CSRSR, and AIT, through its designated representative NOAA, shall coordinate to confirm that information security measures for protecting availability and integrity of data are in place. The Parties agree to take necessary steps to promote compliance of their Designated Representatives with applicable information security requirements and policies, consistent with established guidelines and best practices.

ARTICLE VII – INTELLECTUAL PROPERTY AND EXPORT CONTROL CONSIDERATIONS

The handling and distribution of data, algorithms and information provided, exchanged or arising under this Agreement may be restricted due to the need to protect pre-existing proprietary information or other intellectual property. In addition, the Parties agree to obtain any necessary approvals prior to exchanging any information subject to the U.S. International Traffic in Arms Regulations (ITAR).

ARTICLE VIII – DATA PRODUCTS

Consistent with conditions under which TECRO, through its designated representatives OCA, OAC and CSRSR, has access to FORMOSAT series satellite imagery, AIT agrees to take appropriate steps consistent with applicable laws and regulations to ensure that its designated representative NOAA shall not in general archive and/or redistribute the FORMOSAT series satellite data outside of NOAA. However, if analysis of FORMOSAT series satellite imagery is used in a product that would be operationally useful to manage a specific oil spill or marine debris event, it is understood that AIT, through its designated representative NOAA, may distribute the analysis product to other users among the authorities represented by AIT. The product would be marked with the logo of the National Space Organization (NSPO), which owns and operates the FORMOSAT series satellites, and NSPO would be credited for the information.

ARTICLE IX – PUBLIC RELEASE OF INFORMATION

- A. TECRO and AIT agree to coordinate in consultation with their designated representatives on voluntary public release of information regarding cooperation pursuant to this Agreement.
- B. Such voluntary public release of information related to cooperation pursuant to this Agreement should include a statement to the effect that the cooperative activity was or is

jointly sponsored by TECRO through its designated representatives OCA, OAC and CSRSR, and AIT, through its designated representative NOAA. 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 X – ENTRY INTO FORCE

This Agreement shall enter into force on the date of the last signature and remain in force for a period of five (5) years and may be extended by the mutual written agreement of TECRO and AIT. TECRO and AIT agree to review this Agreement at least every three (3) years to determine whether the Agreement should be revised, renewed, or terminated.

ARTICLE XI – REPLACEMENT

This Agreement, upon its entry into force, replaces 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 Establishing Satellite-Based Marine Oil Monitoring Collaborative Activity signed on October 9 and 17, 2013 and amended on February 7, 2018.

ARTICLE XII – AMENDMENT AND TERMINATION

- A. This Agreement may be amended by the mutual written agreement of TECRO and AIT.
- B. This Agreement may be terminated by TECRO or AIT at any time by notification to the other in writing sixty (60) days in advance of the desired termination date.

ARTICLE XIII – RESOLUTION OF DIFFICULTIES

TECRO and AIT agree to consult, upon request of TECRO or AIT 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 difficulties or misunderstandings that may arise.

ARTICLE XIV – SURVIVING PROVISIONS

The provisions of Articles VI, VII, and VIII shall survive the expiration or termination of this Agreement.

ARTICLE XV – DESIGNATED REPRESENTATIVES’ POINTS OF CONTACT

The points of contact for the designated representatives are listed in Appendix 1.

In witness whereof, the undersigned, being duly authorized thereto, have signed this Agreement.

Done in duplicate on January 20 and February 16, 2022 at Arlington, VA, USA in the English language.

APPENDIX 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
ESTABLISHING SATELLITE-BASED MARINE OIL POLLUTION AND MARINE DEBRIS
MONITORING COLLABORATIVE ACTIVITY

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 OCA, OAC:

Ocean Conservation Administration,
Ocean Affairs Council
Marine Environmental Management
Division
7F., No. 25, Chenggong 2nd Rd.,
Qianzhen Dist., Kaohsiung City 80661
Telephone: 886-7-338-2057 Ext. 262361
Fax: 886-7-338-1755
Email: chw70113@oca.gov.tw

For NOAA:

National Oceanic and Atmospheric
Administration
Office of Satellite and Product Operations
NSOF Room 1605
4231 Suitland Road
Suitland, MD 20746
E/SPO
Telephone: 301-817-4000
Fax: 301-817-7901
Email: Richard.G.Marlow@noaa.gov

For CSRSR:

Center for Space and Remote Sensing
Research
National Central University
No. 300, Jhongda Rd.,
Jhongli City 32001
Telephone: 886-3-4227151 Ext. 57659
Fax: 866-3-4264301
Email: liouyufu@csrsr.ncu.edu.tw