

MEMORANDUM OF UNDERSTANDING

BETWEEN THE

**UNITED STATES GEOLOGICAL SURVEY
OF THE DEPARTMENT OF THE INTERIOR**

AND THE

[*INTERNATIONAL COOPERATOR]

**To be Determined-Foreign Government or International Organization*

**FOR COOPERATION IN THE USE OF
U.S. LAND REMOTE SENSING SATELLITE DATA**

PREAMBLE

The United States Geological Survey of the United States Department of the Interior and [*IC], (hereinafter referred to as “the Parties”),

RECOGNIZING their mutual interest in the use of space technology for peaceful purposes;

NOTING the value of the United States Landsat satellite missions to cooperation among governments in space-based remote sensing of the Earth’s surface;

DESIRING to establish an overall legal framework for cooperation in future land remote sensing satellite missions;

HAVE AGREED as follows:

ARTICLE 1 – PURPOSE AND SCOPE OF COOPERATION

This Memorandum of Understanding (MOU) establishes the terms and conditions under which the United States Geological Survey (USGS) will provide United States-owned land remote sensing satellite data and [*IC] will receive, process, archive, distribute, and exchange such data in cooperation with the USGS. This MOU consists of a main text, a definition of terms annex, and mission-specific annexes. The annexes are an integral part of this MOU.

ARTICLE 2 – SCIENCE AND TECHNOLOGY AGREEMENT

[If an umbrella Science and Technology Agreement is in force with the partner country, this Article may be included if it is decided to enter into the proposed MOU as an implementing arrangement under the Science and Technology Agreement.]

[This MOU is subject to the Agreement on Science and Technology Cooperation between the Government of the United States of America and the [*IC] Government of _____ (hereinafter “S & T Agreement”) signed _____.]

ARTICLE 3 – RESPONSIBILITIES OF THE PARTIES

- A. The USGS shall endeavor to provide operational land remote sensing satellite service under the terms of this MOU and shall:
 - 1. Program land remote sensing satellites to collect and provide remote sensing data of areas within the acquisition radius of [*IC’s] ground station(s) to the extent that such requests can be accommodated by the spacecraft. The USGS will endeavor to schedule satellite downlink

resources to meet requests from all participating ICs) in an equitable and balanced manner, subject to conflict-resolution guidelines to be provided to all stations. Programming details to meet such requests will be arranged by mutual decision of the Parties' technical representatives.

2. Provide [IC] with orbital elements for calculating the antenna pointing angles necessary to acquire the satellite-transmitted signals and with the necessary ancillary and calibration information for processing the data acquired.
3. Reserve the right to curtail or terminate transmission of satellite data to [IC] for reasons of (1) spacecraft or USGS ground equipment limitations, or (2) non-payment of annual access fee as agreed in any mission-specific Annex to this MOU. In these cases, the USGS will notify [IC] and discuss the planned action in the most expeditious manner possible.
4. Provide to [IC], upon request by [IC], reasonable quantities of raw USGS land remote sensing satellite data extracted from the USGS archive in an agreed-upon format and delivered electronically or on media at a price to be negotiated.
5. Provide support for anomaly resolution for USGS land remote sensing satellite missions.
6. Endeavour to ensure that any radio frequency problem occurring in relation to data reception by [IC's] ground station(s) is resolved to the satisfaction of the Parties.

B. [IC] shall:

1. Operate (a) ground station(s) for the reception, processing, archiving, distribution, and exchange of USGS land remote sensing satellite data at its own expense, including the cost of establishing and operating the necessary communication links with the USGS's Mission Operations Center (MOC) and the USGS's data center located at the Earth Resources Observation and Science (EROS) Center.
2. Produce land remote sensing satellite data products in accordance with agreed-upon USGS-sponsored distribution formats.
3. Ensure that all USGS land remote sensing satellite data acquired by [IC] are available for sale or distribution on a public, nondiscriminatory basis. This applies to all USGS land remote sensing satellite data acquired under this and previous Landsat MOUs signed with U.S. Government agencies.
4. Make available to the USGS, upon request, English-language copies of any arrangements signed by [IC] concerning the distribution of USGS

land remote sensing satellite data from [IC]. Such arrangements shall be consistent with this MOU.

5. Maintain a current inventory of its USGS land remote sensing satellite data holdings and provide at least monthly updates of its metadata to the USGS in an agreed-upon format, electronically or on agreed-upon media, once the ground station(s) is (are) operational. These metadata may be made available publicly through USGS data facilities.
6. Establish and maintain a computer-accessible electronic system, with external public access, of browse imagery for its USGS land remote sensing satellite data holdings, or provide browse data at least monthly to the USGS in an agreed-upon format and on agreed-upon media, once the ground station(s) is (are) operational. [IC] browse imagery may be made available publicly through USGS data facilities.
7. Maintain USGS land remote sensing satellite data that have met [IC] quality standards in [IC's] archive for at least 10 years following data acquisition, using accepted archive management practices. If [IC] plans to discard data, it will issue a purge alert to the USGS, which will be given first right of refusal to acquire the data at a price to be negotiated.
8. Endeavor to ensure that any radio frequency problem occurring in relation to data reception by [IC's] ground station(s) is resolved to the satisfaction of the Parties. Questions concerning radio frequency interference by the USGS land remote sensing spacecraft raised by entities in third countries will be referred to the USGS.
9. When requested by the USGS in support of key U. S. Government programs, provide reasonable quantities of [IC]-held USGS land remote sensing satellite data, in an agreed-upon format, electronically or on media, and at a price to be negotiated.
10. Repatriate to the USGS, within 30 days of downlink, any USGS land remote sensing satellite data received which is unique to [IC's] archive.
11. For purposes of validating data quality, exchange limited amounts of [IC]-held USGS land remote sensing satellite data, in an agreed-upon format, electronically or on media, when requested by the USGS. Data for this purpose shall be exchanged annually, at no cost to the USGS.
12. When requested by the USGS in response to a significant loss of spacecraft capability to record data for the USGS archive, routinely provide sufficient quantities of newly acquired USGS land remote sensing satellite data to meet U.S. Government mission requirements, in an agreed-upon format, electronically or on media, at a cost to be negotiated. For any support necessary to [IC] beyond providing USGS land remote sensing satellite data to the USGS as described above, the Parties will

negotiate specific financial terms.

13. Communicate with the MOC on spacecraft information, in order to maximize data collection and efficiency of spacecraft operations.
14. Provide support for anomaly resolution of USGS land remote sensing satellite missions.

ARTICLE 4 – INTERNATIONAL MISSION COORDINATION

- A. Each Party shall designate program representatives to be responsible for the implementation of this MOU. Supplemental meetings between the Parties will be held by mutual agreement.
- B. Program management representatives from the Parties will participate in annual meetings of the Landsat Ground Station Operations Working Group (LGSOWG). This group, chaired by the USGS, will serve as a forum for the exchange of policy, programmatic and management information among station operators and the USGS.
- C. Technical representatives from the Parties will participate in annual meetings of the Landsat Technical Working Group (LTWG). This group, also chaired by the USGS, will review and coordinate technical and operational aspects of USGS international mission support.

ARTICLE 5 – SCIENCE AND APPLICATIONS DEVELOPMENT

1. The Parties will seek to identify opportunities for cooperation in improved land remote sensing satellite data collection, user accessibility, and data distribution.
2. The Parties will seek to identify opportunities to support new research in the use of land remote sensing satellite data, and the development of related applications to enhance land use practices, ecosystems management, climate change research, and other areas of Earth systems science.
3. The Parties will seek to cooperate in the support of global observation and science programs involving the use of land remote sensing satellite data.
4. The Parties will consult with one another on best practices and improved means of cooperation in the long-term archiving and preservation of land remote sensing satellite data.
5. The Parties will share information and consider opportunities for training

and capacity building in the use of land remote sensing satellite data.

6. Subject to the provisions of Article 11, the Parties will share information on their respective development and potential for cooperation in their respective land remote sensing satellite missions.

ARTICLE 6 – USER SERVICE ARRANGEMENTS

The USGS reserves the right to service the land remote sensing satellite data requests of all users affiliated with U.S. Government programs.

ARTICLE 7 – FINANCIAL ARRANGEMENTS AND LEGAL AUTHORIZATION

1. The Parties shall be responsible for funding their respective activities under this MOU. Additionally, [IC], or its designated agent, shall pay to the USGS[, or ensure the appropriate authorities of [IC's] government pay to the USGS,] in a timely manner, any access fees described in any mission-specific Annex(es). These fees are required to enable the USGS to administer all operations in support of a global network of cooperating ground receiving stations.
2. Obligations under this Agreement and any Implementing Annexes shall be subject to the availability of funding obtained through each Party's funding procedures.
3. Should either Party encounter budgetary problems that may affect the activities carried out under this MOU that Party shall notify and consult with the other Party in a timely manner in order to minimize the negative impact of such problems on the cooperation.

ARTICLE 8 – DUTIES, FEES, AND TAXES

In accordance with its national laws and regulations, each Party shall seek to ensure free customs clearance and waiver of all applicable duties, fees, and taxes for the import or export of goods necessary for the implementation of this MOU. In the event that any duties, fees, or taxes of any kind are nonetheless levied on such goods, such duties, fees, or taxes shall be borne by the Party of the country levying them.

ARTICLE 9 – ENTRY AND EXIT OF PERSONNEL

On a reciprocal basis, each Party shall use reasonable efforts to facilitate, in accordance with its laws and regulations, the entry to and exit from its territory of personnel engaged in joint activities pursuant to this MOU.

ARTICLE 10 – LAWS, WARRANTIES, RIGHTS, AND LIABILITY

1. The activities under this MOU will be conducted in accordance with the applicable laws and regulations of the Parties' countries, respectively, and shall be subject to the availability of appropriate funds.
2. The USGS does not warrant the suitability of its land remote sensing data for any purpose and shall not be liable for any damage or injury brought about by use of USGS land remote sensing satellite systems and their data
3. The USGS retains the ownership right to all raw land remote sensing data acquired by its satellites. Beyond the provisions of Article 3.B.3, the USGS places no restrictions on [IC] to disclose, use, manipulate, generate products from, distribute, or sell USGS land remote sensing satellite data.

ARTICLE 11 – EXCHANGE OF TECHNICAL INFORMATION

1. Technical information exchanged between the Parties will be subject to the applicable laws, regulations, and policies of the Parties' countries, respectively. In the event it is necessary to exchange technical information and the furnishing Party considers that such technical information is to be protected for proprietary or export control purposes, such information must be clearly marked with a legend indicating the country of origin, the conditions of release, that the information relates to this MOU, and that it is furnished in confidence.
2. The Parties USGS and [IC] will take all lawful steps available to prevent disclosure of such protected or proprietary technical information without the consent of the other Party and to ensure that it is used only for the purposes of this MOU.
3. The USGS and [IC] may release to the public other general, non-technical information regarding each other's programs or operations after ensuring, through consultation with each other when necessary, that this information is fairly and accurately represented.

4. The USGS and [IC] **may exchange** appropriate technical information and documentation for the purposes of downlinking, processing, and archiving USGS land remote sensing satellite data as well as for generating and distributing products from that data.

ARTICLE 12 – CONSULTATIONS AND SETTLEMENT OF DISPUTES

1. The Parties shall consult, as appropriate, to review the implementation of activities undertaken pursuant to this MOU, and to exchange views on potential areas of future cooperation.
2. In the event questions arise regarding the interpretation, application, or implementation of activities under this MOU, the Program Managers of the Parties shall endeavor to resolve the questions. If the Program Managers are unable to reach an agreement, then the matter will be referred to a more senior level of the Parties for joint resolution.

ARTICLE 13 – ENTRY INTO FORCE, DURATION, AND TERMINATION

1. This MOU shall enter into force upon signature by both Parties and remain in force through the operational lifetime of the USGS land remote sensing spacecraft(s) from which [IC] receives USGS land remote sensing data. This MOU may be amended by mutual agreement of the Parties.
2. In the event that either of the Parties is unable to comply with any provision of this MOU, either Party, after consultation with the other, shall have the option of terminating this MOU, providing at least 30 days' notice of such action, forwarded in writing by one Party to the other.
3. Notwithstanding termination or expiration of this MOU, the obligations of the Parties set forth in Article 3.B.3, Article 3.B.7, Article 10.2, Article 10.3, Article 10.4, and Article 11 of this MOU shall continue to apply.

ARTICLE 14 – SIGNATURE

IN WITNESS THEREOF, respective representatives of the Parties have signed this Memorandum of Understanding.

For the United States Geological Survey
of the Department of the Interior:

For [**International Cooperator**]

Marcia K. McNutt
Director
U.S. Geological Survey
Reston, Virginia

Name
Title
Organization
Location

Date

Date

Place

Place