

No. 30290

**UNITED STATES OF AMERICA
and
THAILAND**

**Memorandum of understanding relating to the establishment
and operation of a Landsat system. Signed at Washing-
ton on 9 May 1979**

Authentic text: English.

Registered by the United States of America on 28 September 1993.

**ÉTATS-UNIS D'AMÉRIQUE
et
THAÏLANDE**

**Mémoire d'accord relatif à l'établissement et au fonc-
tionnement du système Landsat. Signé à Washington le
9 mai 1979**

Texte authentique : anglais.

Enregistré par les États-Unis d'Amérique le 28 septembre 1993.

MEMORANDUM OF UNDERSTANDING¹ BETWEEN THE NATIONAL RESEARCH COUNCIL OF THAILAND AND THE UNITED STATES NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The United States National Aeronautics and Space Administration (NASA), which conducts an experimental Landsat program and, under certain conditions, provides for direct reception of data from these satellites by stations operated outside the United States, and the National Research Council Of Thailand (NRCT) which plans to establish a station to receive, process, archive and disseminate Landsat data, have decided to enter into this Memorandum of Understanding which, subject to the following terms and conditions, provides for (a) direct reception of data from NASA's currently operating and potential future experimental Landsat satellites by the NRCT's ground station and (b) availability to NASA and others of Landsat data acquired by this NRCT station.

1. For its part, the NRCT will use its best efforts to:
 - (a) set up and operate a ground station near Bangkok for the reception and facilities for processing, archiving and dissemination of Landsat data at its own cost including the cost of the necessary communication links with the NASA Landsat Operations Control Center at the Goddard Space Flight Center, Greenbelt, Maryland;
 - (b) produce Landsat computer compatible tapes and image products;
 - (c) ensure, in conformance with US Landsat data dissemination practices, unrestricted public availability of all Landsat data received within range of the Bangkok ground station at a fair and reasonable charge, and in a non-discriminatory manner;
 - (d) ensure the provision of processed Landsat data (imagery and digital products) to NASA-selected Principal Investigators whose test sites are within range of the Bangkok station, for the period of coverage envisaged and under the same conditions as NASA applies to them;
 - (e) provide to NASA reasonable support requested by NASA during a spacecraft emergency condition, such as the provision of duplicate station tapes or high density digital tapes should NASA have problems with data transmission;

¹ Came into force on 9 May 1979 by signature, in accordance with section 6.

- (f) provide at no charge to NASA and the US EROS Data Center monthly catalog listings of all the Landsat data acquired by the Bangkok ground station. These catalog listings will also be made publicly available;
 - (g) make available to NASA on request, for US Agencies' experimental purposes, on a cost-free basis and in reasonable quantities, copies of processed or unprocessed Landsat data acquired by the NRCT.
2. For its part, NASA will use its best efforts to:
- (a) program the Landsat Multispectral Scanner, Return Beam Vidicon and Thematic Mapper instruments for coverage of the area within the acquisition radius of the Bangkok ground station and transmit the data acquired directly to this station. Programming details will be arranged by mutual agreement of the Project Managers;
 - (b) provide the Bangkok ground station with orbital elements for calculating the antenna pointing angles necessary to acquire the Landsat transmitted signal, and for processing the data acquired;
 - (c) process, on a time-available basis and as agreed by the designated technical representatives, a limited number of NRCT data tapes for initial evaluation and calibration of the Bangkok station's performance. The NRCT will ensure that such data tapes are fully compatible with NASA's data processing equipment and related software;
 - (d) make available to the NRCT for comparison purposes, a limited amount of NASA-acquired Landsat data covering selected portions of the Bangkok station's coverage zone.
3. The NRCT and NASA will each designate technical representatives to be responsible for coordinating the agreed functions and responsibilities of each party with the other. The technical representatives, or their deputies and advisors by mutual agreement, will participate in meetings of the Landsat Ground Station Operations Working Group. This Working Group, established by NASA, meets every six months and serves as a forum for exchange of technical information among station operators. Supplemental meetings between the NRCT and NASA will be held by mutual agreement.
4. The following additional understandings are confirmed:
- (a) The NRCT, in conjunction with other Thailand agencies, will use its best efforts to ensure that any radio frequency problem occurring in relation to Landsat data reception by the Bangkok station is resolved to the satisfaction of the parties to this Memorandum of Understanding. Questions concerning radio