

No. 22999

**BRAZIL
and
UNITED STATES OF AMERICA**

**Memorandum of Understanding concerning the Landsat
system (with annex). Signed at Brasília on 8 May 1984**

Authentic texts: Portuguese and English.

Registered by Brazil on 28 June 1984.

**BRÉSIL
et
ÉTATS-UNIS D'AMÉRIQUE**

**Mémorandum d'accord relatif au système Landsat (avec an-
nexe). Signé à Brasília le 8 mai 1984**

Textes authentiques : portugais et anglais.

Enregistré par le Brésil le 28 juin 1984.

MEMORANDUM¹ OF UNDERSTANDING BETWEEN THE GOVERNMENT OF THE FEDERATIVE REPUBLIC OF BRAZIL AND THE GOVERNMENT OF THE UNITED STATES OF AMERICA CONCERNING THE LANDSAT SYSTEM

The Government of the Federative Republic of Brazil and the Government of the United States of America, hereinafter referred to as the Parties,

Considering the Agreement for a Program of Scientific Cooperation between the two Governments of 1 December 1971,² as amended and extended on 28 December 1976,³ and again extended on 30 November 1981,⁴ 1 June 1982,⁵ 30 November 1982,⁶ 31 May 1983⁷ and 1 December 1983;⁸

Agree as follows:

Article 1. For the implementation of this Memorandum of Understanding, the Government of the Federative Republic of Brazil designates as Executive Agency the Comissão Brasileira de Atividades Espaciais (COBAE), through the Instituto de Pesquisas Espaciais (INPE) of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), and the Government of the United States of America designates as Executive Agency the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce.

Article 2. The purpose of this Memorandum of Understanding and of its annex is to establish the terms and conditions under which the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce will provide and the Comissão Brasileira de Atividades Espaciais (COBAE) through the Instituto de Pesquisas Espaciais (INPE) of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) will receive, process, archive, and distribute data from the U.S. civil land remote sensing satellite program (hereafter referred to as the Landsat system), which is managed by NOAA.

Article 3. 1. The undertakings of the Executive Agencies are the following:

A. NOAA, as manager of the Landsat system, through its National Environmental Satellite, Data, and Information Service (NESDIS), will use its best efforts to provide operational Landsat service for the duration of this Memorandum of Understanding and will:

- i) Program as requested by CNPq/INPE, the Landsat system Multi-Spectral Scanner to cover areas within the acquisition radius of the CNPq/INPE ground station and transmit the data acquired directly to this station. Programming details will be arranged by mutual agreement of the technical representatives responsible for the implementation of this Memorandum of Understanding;

¹ Came into force on 8 May 1984 by signature, in accordance with article 4.

² United Nations, *Treaty Series*, vol. 822, p. 135.

³ *Ibid.*, vol. 1082, p. 357.

⁴ *Ibid.*, vol. 1263, No. A-11774.

⁵ *Ibid.*, vol. 1286, p. 399.

⁶ *Ibid.*, vol. 1296, p. 401.

⁷ *Ibid.*, vol. 1318, p. 343.

⁸ *Ibid.*, vol. 1344, No. A-11774.

- ii) Program, as requested by CNPq/INPE, the Landsat system Thematic Mapper to cover areas within the acquisition radius of the CNPq/INPE ground station, to the extent that such requests can be accommodated by the U.S. National Aeronautics and Space Administration (NASA) experimental Thematic Mapper program, and transmit the data acquired directly to this station. Programming details to meet such requests will be arranged by mutual agreement of the technical representatives responsible for implementation of this Memorandum of Understanding, based on arrangements between NOAA and NASA;
- iii) Provide the CNPq/INPE ground station with orbital elements for calculating the antenna pointing angles necessary to acquire the Landsat system spacecraft transmitted signal and for processing the data acquired; and
- iv) Reserve the right to curtail or terminate transmission of data to the CNPq/INPE ground station in the event of spacecraft or NOAA ground equipment limitations requiring such actions. In this case, NOAA will notify CNPq/INPE in the most expeditious manner possible to discuss the planned action and to explore possibilities for continued access to data.

B. CNPq/INPE, as manager of the ground station, will:

- i) Operate a ground station at Cuiaba for the reception, and at Cachoeira Paulista for the processing, archiving and distribution of Landsat data at its own cost, including the cost of establishing and operating the necessary communication links with NOAA's Landsat Operations Control Center located at the NASA Goddard Space Flight Center, Greenbelt, Maryland;
- ii) Produce Landsat computer compatible tapes and image products in accordance with such formats as may be agreed;
- iii) Ensure that all Landsat data acquired and archived by the CNPq/INPE ground station are available for sale or distribution on a public, non-discriminatory basis. This applies to all Landsat data acquired under this Memorandum of Understanding, as well as Landsat data acquired under previous Memoranda of Understanding with NASA. Copies of any agreements signed by CNPq/INPE concerning the distribution of Landsat data from the CNPq/INPE ground station shall be made available to NOAA upon request and shall be consistent with the above provisions;
- iv) Pay to NOAA the fees contained in Annex I to this Memorandum of Understanding for the direct reception and distribution of all Landsat data acquired and archived after October 1, 1982;
- v) Provide to NOAA quarterly listings, in an agreed format, of all Landsat data acquired by the CNPq/INPE ground station. These catalog listings will be made available publicly through NOAA data facilities;
- vi) Use its best efforts to ensure that any radio frequency problem occurring in relation to data reception by the CNPq/INPE ground station is resolved to the satisfaction of the parties to this Memorandum of Understanding. Questions concerning radio frequency interference by the Landsat system spacecraft raised by parties in third countries will be referred to the U.S. Government and NOAA for reply. NOAA will use the following frequencies for sensor data transmission from the Landsat system spacecraft:
 - Multi-Spectral Scanner—S-Band (2200-2300 MHz) and X-Band (8025-8400 MHz)
 - Thematic Mapper — X-Band (8025-8400 MHz); and

vii) Acquire, on a limited basis as/if requested by NOAA and in support of key U.S. Government programs, reasonable quantities of Landsat data in the form of station tapes or high density digital tapes in accordance with such formats as may be agreed. Such requests will be made and the data provided in the framework of mutual cooperative arrangements defined through exchanges of letters between the NOAA Assistant Administrator for Environmental Satellite, Data, and Information Services and the Director of CNPq/INPE.

C. It is further understood and agreed that:

- i) NOAA and CNPq/INPE will each designate technical representatives to be responsible for implementation of this Memorandum of Understanding. The technical representatives, or their deputies, will participate in the Landsat Ground Station Operations Working Group. This group, chaired by NOAA, will serve as forum for the exchange of technical and management information among station operators and NOAA. For example, through this group NOAA and CNPq/INPE may work together to develop a market strategy for the promotion of Landsat data which will take the interests of both parties into account. Also, CNPq/INPE and NOAA may exchange, as mutually agreed, limited numbers of Landsat data tapes and related documentation for the purpose of intercomparison of equipment performance. Supplemental meetings between CNPq/INPE and NOAA will be held by mutual agreement;
- ii) The ability of CNPq/INPE and NOAA to carry out their obligations under this Memorandum of Understanding is subject to the availability of funds;
- iii) NOAA does not warrant the suitability for any purpose of Landsat data, and shall not be liable for any damage or injury brought about by the use of the Landsat system;
- iv) The NOAA Assistant Administrator for Environmental Satellite, Data, and Information Services and the Director of CNPq/INPE are authorized to enter into and modify as necessary technical, financial, and management implementing agreements within the guidance specified in this agreement;
- v) NOAA will include with all responses to requests for Landsat data acquired in the CNPq/INPE ground station's coverage zone a statement noting that the CNPq/INPE ground station should have available more complete data. In the event that NOAA receives requests for specific Landsat scenes, products, or specific information on its holdings, NOAA will supply data and/or information requested. When the expected coverage of a prospective Landsat ground station overlaps with that of the CNPq/INPE Landsat station, NOAA will inform CNPq/INPE before finalizing any agreement with the prospective station operator. NOAA will encourage CNPq/INPE and the prospective station operator to consult with a view toward reaching a mutually satisfactory understanding on responding to requests for data of the overlapping coverage area; and
- vi) The availability of data under any of the above paragraphs shall not prejudice any rights and obligations of the parties under international law which may be established in the future with respect to remote sensing activities.

Article 4. 1. This Memorandum of Understanding shall enter into force upon signature by both parties and remain in force for a period of three years or until NOAA no longer retains management responsibility for the Landsat system should that occur first. It is understood that this Memorandum may be extended by mutual

agreement of the parties should NOAA's management responsibility for the Landsat system extend beyond the three year period.

2. In the event that either NOAA or CNPq/INPE is unable to comply with the agreed terms and conditions of this Memorandum of Understanding, either party, after consultation with the other, shall have the option of terminating or suspending the activities under this Memorandum, providing that reasonable notification of such action is forwarded in writing by one party to the other.

DONE at Brasília, on the 8th of May, 1984, in duplicate, in the Portuguese and English languages, both texts being equally authentic.

For the Government
of the Federative Republic
of Brazil:

[Signed]

RAMIRO SARAIVA GUERREIRO

For the Government
of the United States of America:

[Signed]

DIEGO CORTES ASENSIO

ANNEX I TO THE MEMORANDUM OF UNDERSTANDING BETWEEN THE COMISSÃO BRASILEIRA DE ATIVIDADES ESPACIAIS AND THE UNITED STATES DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, FOR THE DIRECT RECEPTION AND DISTRIBUTION OF LANDSAT DATA

I. FEES

Pursuant to Section II.B.4 of the above Memorandum of Understanding (MOU), beginning October 1, 1982, the National Oceanic and Atmospheric Administration (NOAA) has implemented an annual access fee of US\$ 600,000 for the direct reception of Landsat data at each ground station and a distribution fee of US\$ 5.00 for each photographic product and US\$ 65.00 for each Computer Compatible Tape (CCT), derived from all Multi-Spectral Scanner (MSS) data and a fee of US\$ 300 for each full scene of Thematic Mapper (TM) digital data and US\$ 25.00 for each TM photographic product sold, transferred or otherwise distributed by the Comissão Brasileira de Atividades Espaciais (COBAE), through CNPq/INPE, or its agent(s) to users. The distribution fees will apply to all data received and distributed after October 1, 1982. Following conclusion of this MOU, CNPq/INPE will pay to NOAA any outstanding payments for the access fee of US\$ 600,000 and distribution fees for the period beginning October 1, 1982, through September 30, 1983. The above provisions do not apply to data exchanged under Section II.B.7.

Reasonable notification of any proposed change to these fees, taking into account the budget cycles of the parties to this agreement, shall be provided in writing by the NOAA Assistant Administrator for Environmental Satellite, Data, and Information Services to the Director of CNPq/INPE prior to the implementation of the proposed change.

II. PAYMENT SCHEDULE

Payments for each station will be made payable to the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, in U.S. Dollars and to any U.S. bank according to the following schedule:

<i>Date</i>	<i>Payments Due</i>
January 31, 1984	Distribution fee for July 1, 1983–September 30, 1983, based on report submitted October 15, 1983. \$300,000 access fee for each station for October 1, 1983–March 31, 1984.
March 31, 1984	Distribution fee for October 1, 1983–December 31, 1983, based on report submitted January 15, 1984. \$150,000 access fee for each station for April 1–June 30, 1984.
June 30, 1984	Distribution fee for January 1, 1984–March 31, 1984, based on report submitted April 15, 1984. \$150,000 access fee for each station for July 1, 1984–September 30, 1984.
September 30, 1984	Distribution fee for April 1, 1984–June 30, 1984, based on report submitted July 15, 1984. \$150,000 access fee for each station for October 1, 1984–December 31, 1984.

All payments must be received within 30 days from the date of invoice. Charges for late payment will be at the U.S. Treasury Department prevailing rate on the overdue balance for each 30 day period or portion thereof that payment is delayed. Payments should be sent to:

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
AT/GSM331 Attn: NOAA Collection Official
6010 Executive Boulevard
Rockville, Maryland 20852
U.S.A.

Distribution fee payments will be based on quarterly distribution reports delivered via air mail or cable to NOAA by CNPq/INPE within two weeks after the end of each quarter. Detailed definition of the contents of the quarterly distribution reports will be arranged by the technical representatives responsible for the implementation of this agreement.

III. CONTINGENCIES

Should limitation of spacecraft or NOAA ground equipment degrade or preclude regular transmission of Landsat data to the CNPq/INPE ground station, NOAA, in consultation with CNPq/INPE, will waive or appropriately reduce the subsequent access fee payment(s); distribution fees will continue to be due at the prevailing rates.

NOAA reserves the right to terminate transmission of Landsat data to CNPq/INPE at any time CNPq/INPE is in arrears in its payments to NOAA provided that NOAA notifies CNPq/INPE 30 days in advance of its intention to terminate transmission for this reason.

IV. DURATION OF ANNEX

This Annex will remain in effect until September 30, 1984, and may be extended or revised by mutual agreement of NOAA and COBAE through exchanges of letters between the NOAA Assistant Administrator for Environmental Satellite, Data, and Information Services and the Director of CNPq/INPE. NOAA will provide COBAE with reasonable notification in writing of financial terms and conditions proposed for the period beginning October 1, 1984, which take into account the budget cycles of the parties to this agreement.