

Memorandum of Understanding between

The National Satellite Meteorological Centre of the China  
Meteorological Administration, People's Republic of China

And the

National Institute for Space Research of the Ministry of Science and  
Technology, Federative Republic of Brazil

*Preamble*

The National Satellite Meteorological Centre (NSMC) is an auxiliary institution of the China Meteorological Administration (CMA). NSMC is responsible for receiving, processing the data of Chinese and foreign meteorological satellites, and distributing the data and information products to users for application. Other responsibilities include establishing the ground segment of the Chinese meteorological satellite observation system, conducting applied research in satellite meteorology, making plans and programs for developing Chinese meteorological satellite system based on the national requirements.

The National Institute for Space Research (hereafter referred as "INPE") is a research institute of the Brazilian Ministry of Science and Technology, promoting and conducting studies, scientific research, technological development and human resources development in the fields of space, earth and atmosphere sciences, space applications, meteorology, and space engineering and technology, as well as in related areas, in accordance with the policies and guidelines set forth by the Science and Technology Ministry.

Recalling the framework agreement between the Governments of the People's Republic of China and of the Federative Republic of Brazil on the peaceful applications of science and technology of the outer space signed on 8<sup>th</sup> November 1994 and amended in 2002 and 2004;

Also recalling the Memorandum of Understanding between the Ministry of Science and Technology of the Federative Republic of Brazil and the Ministry of Science and Technology of the People's Republic of China on cooperation in science and technology, signed on 18<sup>th</sup> April 2001;

Acknowledging the long standing and robust character of the ongoing cooperation between the People's Republic of China and the Federative Republic of Brazil in the field of space technology for earth observation;

Expressing the mutual wish to increase the scientific and technological cooperation between the Federative Republic of Brazil and the People's Republic of China while strengthening the links between the two countries, and

Confirming their mutual interest in developing cooperation, the Parties have agreed to establish this Memorandum of Understanding as the formal framework for the implementation of such cooperation, under the following terms and conditions:

#### ***Article 1- Purpose***

The purpose of this Memorandum of Understanding ("MOU") is to establish a working relationship between the Parties, on the basis of equality, reciprocity and mutual benefit.

#### ***Article 2- Scope of Cooperation***

The Parties have jointly identified the following areas of interest for potential cooperation pursuant to this MOU, including but not restricted to:

- 1. Data receiving of FY-3A and FY-3B satellite data and retransmission to NSMC in near real time**  
NSMC will provide technical information and pre-processing software to INPE, who will receive and process the data to further transmission to NSMC. The ground station to receive all data of FY-3A and FY-3B will be responsibility of INPE.
- 2. Validation of Chinese products over the Brazilian territory**  
Rainfall and other satellite derived products will be validated using surface data collected over South America. To carry out this task, all algorithms developed by NSMC will be installed in INPE computers in order to produce the products. However, in case of any technical or operational incompatibility, NSMC will provide

the information to be validated. All surface data produced by INPE and used for validation will be available to the NSMC with no restriction.

**3. Installation in NSMC of Brazilian products and algorithms like the Forecast and Tracking of Convective Cloud Clusters (FORTRACC)**

The source codes and all algorithms that compose the FORTRACC system will be fully available to NSMC which can install them in any computer inside or outside NSMC facilities. All technical and operational support necessary for the installation of FORTRACC programs will be provided by INPE.

**4. Use of sounding data for weather forecast data assimilation**

INPE is authorized to use infrared and microwave sounding data of China's polar orbiting satellites FY-3A and FY-3B in its weather forecast models.

**5. Exchange of space weather data**

The Parties will exchange satellite and in-situ data on space weather, especially solar and ionosphere observations.

Details of implementation of specific agreed activities will be worked out by mutual agreement, involving researchers of each area mentioned and may be the subject of subsidiary attachments to this MOU.

**Article 3- Data Sharing and Access**

1. Data generated by INPE (satellite and surface) and NSMC from direct readout broadcasts and from processed data records, shall be made freely available to both institutions.

2. INPE is responsible for its own receiving stations, computing, storage and communications costs to acquire and store NSMC data. NSMC data stored by INPE will be subject to the NSMC data policy.

3. NSMC will provide necessary technical information, which will allow the receiving of China's polar orbiting satellites FY-3A and FY-3B.

#### ***Article 4 - Structure and Annexes***

The Parties intend that the activities undertaken pursuant to this MOU be structured as follows:

The terms and conditions for specific activities, which are identified by the Parties to be of mutual interest and to be undertaken as cooperative projects pursuant to this MOU, shall be described in annexes that will be added to this MOU. All annexes shall be consistent with and subject to this MOU.

Annexes to this MOU are expected to provide:

- (a) Specific reference to this MOU;
- (b) Specific detail on the nature and scope of the activities to be undertaken;
- (c) Individual and joint responsibilities of the Parties and their designates;
- (d) Other provisions as may be required consistent with the provisions of this MOU.

#### ***Article 5 - Confidentiality of Information***

The scientific and technical results of cooperative projects conducted under this MOU may be shared and published or held in confidence in accordance with the specific terms set forth in the Annexes to this MOU.

#### ***Article 6 - Designated Representatives***

In order to implement cooperation under this MOU, the Parties will designate appropriate representatives to identify activities for joint cooperation and to define the details of their implementation.

#### ***Article 7 - Financial Considerations***

Cooperation under this MOU is subject to and dependant upon the availability of funds and resources from each Party.

No costs incurred by one Party will be assumed by the second Party unless otherwise specified and agreed upon in writing in the Annexes pursuant to this MOU. All costs or estimated costs will be detailed in these Annexes.

**Article 8 - Property & Equipment**

Any and all property or equipment of whatever nature or kind furnished by either Party in connection with work under this MOU is and shall remain the property of the Party furnishing such property or equipment unless otherwise consented in the Annexes pursuant to this MOU.

**Article 9 - Governing Law**

All activities related to this MOU conducted in Brazil will be carried out in accordance with the applicable laws, statutes and regulations in force in Brazil. All activities related to this MOU conducted in the People's Republic of China will be carried out in accordance with the applicable laws, statutes and regulations in force in the People's Republic of China.

**Article 10 - Participation of Other Organizations**

For cooperation requested by either of the Parties that extends to subjects outside their areas of expertise, the Parties may endeavour, upon mutual written consent, to include the participation of industrial, academic, professional and government organizations, as well as others, in the development of activities falling within the scope of this MOU.

**Article 11 - Resolution of Differences**

Any differences regarding the interpretation or application of this MOU will be resolved amicably by consultation among the Parties, through their representatives, and will not be referred to a third party for settlement.

**Article 12 - Period of Validity and Termination**

This MOU will become effective upon signature by both Parties and will remain in effect for four (4) years, unless extended or terminated. This MOU may be amended or extended by mutual written notification and may be terminated at any time by either Party upon ninety (90) days written notice to the other Party.

Termination of this MOU will not affect the implementation of activities being conducted under any existing Annexes pursuant to this MOU. Termination or amendment of such



Annexes will follow the terms and conditions established in the relevant sections of each specific Annex.


**Article 13 - Legal Obligations**

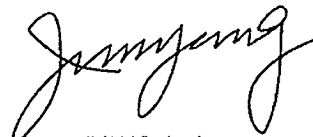
This MOU does not create any obligations between the Parties and is not binding under international law.

Signed at Brasília on the 16<sup>th</sup> day of April, 2010, in duplicates, in the English, Portuguese and Chinese languages. In case of doubt, the English version shall prevail.

For the National Institute for Space  
Research, Ministry of Science and  
Technology, Federative Republic of Brazil

For the National Satellite Meteorological  
Centre of the China Meteorological  
Administration, People's Republic of China

  
(Gilberto Camara)  
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