

**Agreement to
Amend and Extend the
Arrangement for Cooperation
Between the
National Aeronautics and Space Administration (NASA)
and the
Brazilian Space Agency (AEB)
on
Space Geodetic Research
With Emphasis in the Global Positioning System (GPS)**

The United States National Aeronautics and Space Administration (NASA) and the Brazilian Space Agency (AEB) (hereinafter referred to as the "Parties");

Desiring to continue their cooperation with respect to strengthening the Global Geodetic Observing System and its applications including Space Geodetic Science, Geohazards Research and mitigation, and Global Climate Change under their Arrangement for Cooperation (hereinafter referred to as the "Arrangement") signed by NASA on April 4, 2000, and by AEB on April 11, 2000 (enclosed);

Recalling the terms of the Framework Agreement between the Government of United States of America and the Government of the Federative Republic of Brazil, signed March 1, 1996, for Cooperation in the Peaceful Uses of Outer Space and most recently extended through January 31, 2012, by an exchange of notes which was concluded on January 5, 2010, (hereinafter the "Framework Agreement");

Recalling that NASA, and AEB are designated as the Principal Implementing Agencies in the Framework Agreement, and in accordance with Article 13 of the Framework Agreement;

The Parties have agreed to amend the enclosed Arrangement by extending the termination date of the Arrangement to April 30, 2020.

Additionally, the Parties have agreed to the following changes to their respective Points of Contact:

For NASA:

Dr. John LaBrecque
Lead, Earth Surface and Interior Focus Area
Earth Science Division
Science Mission Directorate
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E-mail: John.LaBrecque@nasa.gov

For AEB:

Ambassador Carlos J. P. Campelo
Office of International Cooperation
Brazilian Space Agency - AEB
SPO Area 5 Quadra 3 Bloco A
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Brazil
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For INPE:

Dr. Eduardo W. Bergamini
Information Networks in Space Missions - RME
Coordination of Technology Management - TEC
Instituto Nacional de Pesquisas Espaciais - INPE
Ministry of Science and Technology - MCT
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All of the other terms and conditions outlined in the current Arrangement will continue to apply.


This agreement shall enter into force on the date of the last signature below.

FOR THE UNITED STATES
NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION:

FOR THE BRAZILIAN SPACE
AGENCY:



April 8, 2010
Date



April 8, 2010
Date

Enclosure

BRD119
4-11-00

ARRANGEMENT FOR A PROGRAM OF COOPERATION
BETWEEN THE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)
AND THE
BRAZILIAN SPACE AGENCY (AEB)
ON
SPACE GEODETIC RESEARCH
WITH EMPHASIS IN THE GLOBAL POSITIONING SYSTEM (GPS)

In accordance with the Framework Agreement between the Government of the United States of America and the Federative Republic of Brazil on Cooperation in the Peaceful Uses of Outer Space, dated 1 March, 1996, (Framework Agreement) the National Aeronautics and Space Administration (NASA) and the Brazilian Space Agency (AEB), through the Instituto Nacional de Pesquisas Espaciais (INPE), agree to cooperate in space geodetic research and other related areas.

This proposed cooperative effort results from the fact that geodetic networks are vital for understanding global change phenomena, assessing natural hazards, providing support for local geodetic control, and supplying ground support to space missions.

As part of this cooperation, NASA and the AEB will establish one or more permanent GPS ground stations in Brazil, with the first agreed upon station to be located at the INPE, Cachoeira Paulista, SP (Brazil). Additional stations in support of this cooperation may be added upon agreement of the Parties and amendment of this Arrangement. The cooperative support of one or more permanent GPS stations by NASA and the AEB will provide critical geodetic reference points in South America. The inclusion of these Brazilian stations within the global geophysical network will significantly improve the accuracy of the global and regional geodetic measurements. The objective of this cooperation is also to encourage scientists from both Brazil and the U.S. to develop research programs based on the Brazilian network data along with geodetic and related data available from the global networks.

Under this Arrangement, NASA, through the Jet Propulsion Laboratory (JPL) and the University Corporation for Atmospheric Research/University NAVSTAR Consortium (UCAR/UNAVCO), its designated representatives, will use reasonable efforts to:

1. Provide to the AEB, on a long-term loan basis, one or more GPS receivers and/or associated equipment and software for continuous operation at permanently-fixed sites as per mutual agreement herein;
2. Provide technical installation support, major maintenance, training, and the loan of spare parts for the GPS tracking and communication systems hardware and software;
3. Provide for automated data retrieval from the INPE to the NASA Network Operations Centers at JPL and/or UCAR/UNAVCO;
4. Make available to the INPE, directly from the GPS receivers and/or associated equipment, data of interest in raw or processed form;
5. Provide on loan to INPE the GPS data processing software package GIPSY in executable form, and related software updates, and training in its use;

6. Make available to the INPE all publicly available pre-processed and analyzed NASA space geodetic data in the Crustal Dynamics Data Information System (CDDIS) at the NASA Goddard Space Flight Center (GSFC) in Greenbelt, MD;
7. Provide for the loan, through mutual agreement, any NASA-developed software to be used in the operation of the station, and in the processing and analysis of the station data;
8. Encourage scientific collaboration between U.S. and Brazilian scientists in the area of space geodesy, ionosphere research and other related sciences;
9. Provide unique equipment (as available) on loan, if needed for special requirements of a specific experiment, as mutually agreed;
10. Participate in cooperative measurement campaigns involving GPS and other space geodetic techniques, as mutually agreed;
11. Coordinate with investigators from North America, South America, Europe, Australia, Africa, and Asia for a cooperative program of space geodetic systems measurements for the determination of global plate motion, regional deformation, and polar motion; and
12. Assist in the integration of NASA-provided space geodetic systems hardware and software by making available NASA civil service and/or contractor personnel for mutually agreed upon time periods.

Under this Arrangement, the AEB, through its designated representative, the INPE, will use reasonable efforts to:

1. Provide utilities (electricity and communications), security, and housing for the permanently-installed station(s) at a mutually agreed-upon location;
2. Provide personnel necessary for the installation, full-time operations and nominal maintenance of the station(s);
3. Download data daily from the station(s) to a computer which will be accessible via Internet by a NASA-designated facility;
4. Use NASA-provided equipment only as intended and make no modifications to NASA-provided equipment unless approved in writing or requested in writing by NASA;
5. Encourage scientific collaboration between Brazilian and U.S. scientists in the area of geodesy, ionosphere research and other related sciences;
6. Return the loaned equipment and software to NASA at the end of this cooperation in as good condition as received, except for normal equipment use and aging;
7. Process and analyze the space geodetic data from the NASA and the INPE/AEB cooperative campaigns, as desired, and deposit these data in the NASA Network Operations Center(s) indicated by JPL and/or UCAR/UNAVCO;
8. Participate in cooperative global geodynamics campaigns by conducting measurements at space geodetic stations in Brazil;
9. Cooperate with investigators from North America, Europe, South America, Australia, Africa, Antarctica and Asia for the cooperative program of space geodetic observations to measure plate motion, regional deformation, and polar motion;
10. Provide to NASA reports on the results of research activities conducted with the pertinent space geodetic systems and, upon request, of publicly available software programs developed for use in the processing and analysis of this data, including documentation which describes these programs, provided that their original, legal, authorships and copyrights are recognized, and cited, as necessary, by the authorized receivers;
11. Arrange for participation by appropriate Brazilian representatives in NASA Investigators Working Group meetings related to this cooperation and which are held periodically;



12. Arrange for any assistance required by third parties including NASA contractors; and
13. Provide port and airport storages in Brazil, with no costs for NASA, for all NASA-provided equipment.

The points-of-contact who will be responsible for the coordination and execution of this Arrangement will be:

For NASA:

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 USA
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For AEB:

Ambassador Carlos J.P. Campelo
 Department of Space Cooperation
 Brazilian Space Agency
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 Brazil
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 Fax: 55 61 326 5339
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For INPE:

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 ATNRI/CEP/INPE
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The Parties will each bear the costs of discharging their respective responsibilities, including travel and subsistence of their own personnel and transportation of all equipment for which each is responsible. Activities under this Arrangement will be conducted on a no-exchange-of-funds basis. Further, it is understood that the ability of the Parties to carry out their respective responsibilities is subject to their respective funding limitations and the availability of appropriated funds.

Release of public information regarding this project may be made by the appropriate agency for its own portion of the program as desired and, in so far as participation of the other is involved, after suitable consultation.

The Parties will make data resulting from this cooperative project available as soon as practicable, in any event within no more than three months of acquisition, and without any period of exclusive access for any user group. The data sets will be archived in and made available to the international scientific community through the CDDIS.

Nothing in this Arrangement shall be construed as granting or implying any rights to, or interest in, patents or inventions of the Parties or their contractors or subcontractors.

Results of the investigations will be made available to the scientific community in general through publications in appropriate journals or other established channels. In the event such reports or publications are copyrighted, the Parties shall have a royalty-free right under the copyright to reproduce, distribute and use such copyrighted work for their own purpose.

The Parties are obligated to transfer only those technical data (including software) and goods necessary to fulfill their respective responsibilities under this Arrangement, in accordance with the following provisions:

1. The transfer of technical data (excluding software) for the purpose of discharging the Parties' responsibilities with regard to interface, integration, and safety shall normally be made without restriction, except as required by national laws and regulations relating to export control or the control of classified data. If design, manufacturing, and processing data and associate software, which is proprietary but not export controlled, is necessary for interface, integration, or safety purposes, the transfer shall be made and the data and associated software shall be appropriately marked.
2. All transfers of proprietary technical data, export-controlled goods, and technical data are subject to the following provisions. In the event a Party finds it necessary to transfer goods which are subject to export control or technical data which is proprietary or subject to export controls, and for which protection is to be maintained, such goods shall be specifically identified and such technical data shall be marked with a notice to indicate that they shall be used and disclosed by the receiving Party and its related entities (e.g., contractors and subcontractors) only for the purposes of fulfilling the receiving Party's responsibilities under the programs implemented by this Arrangement, and that the identified goods and marked technical data shall not be disclosed or retransferred to any other entity without the prior written permission of the furnishing Party. The receiving Party agrees to abide by the terms of the notice, and to protect any such identified goods and marked technical data from unauthorized use and disclosure, and also agrees to obtain these same obligations from its related entities prior to the transfer. Nothing in this article requires the Parties to transfer goods or technical data contrary to national laws and regulations relating to export control or control of classified data.
3. All goods, marked proprietary data, and marked or unmarked technical data subject to export control, which are transferred under this Arrangement, shall be used by the receiving Party exclusively for the purposes of the programs implemented by this Arrangement.

Equipment provided by NASA under this Arrangement shall remain the property of the United States Government. Equipment provided by INPE under this Arrangement shall remain the property of the Government of the Federative Republic of Brazil.



In accordance with Article 8 of the Framework Agreement, and in accordance with its laws and regulations, each Party shall facilitate free customs clearance and waiver of all applicable customs duties and taxes for equipment and related goods necessary for the implementation of this Arrangement. In the event that any customs duties or taxes of any kind are nonetheless levied on such equipment and related goods, such customs duties or taxes shall be borne by the Party of the country levying such customs duties or taxes. The Parties' obligation to ensure duty-free entry and exit of equipment and related goods is fully reciprocal.

Subject to its laws and regulations, each party shall facilitate provision of the appropriate entry and residence documentation for the other party's nationals who enter, exit, or reside within its territory in order to carry out the activities under this Arrangement.

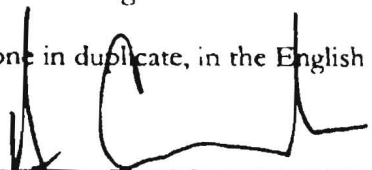
Neither Party shall make any claim against the other, its employees, a related entity of the other (e.g., contractors, subcontractors, investigators, other participating entities), or employees of the other's related entities for injury to or death of its own employees or employees of its related entities, or for damage of any kind to or loss of its own property or that of its related entities arising out of activities under this Arrangement whether such injury, death, damage or loss arises through negligence or otherwise, except in the case of willful misconduct. In addition, each Party shall extend the cross-waiver of liability as set forth above to its own related entities by requiring them, by contract or otherwise, to agree to waive all claims against the entities or persons identified above.

In addition, the AEB agrees to indemnify and hold the United States Government and its contractors and subcontractors harmless from any third Party claim, judgment, or cost arising from the injury to or death of any person, or for damage to or loss of any property arising as a result of its use of NASA equipment provided for activities expressly or implicitly covered under this Arrangement.

This Arrangement will enter into force on the date of its final signature and remain in force for ten years. This Arrangement may be amended or extended by mutual written Arrangement of the Parties. It may be terminated by either Party by notifying the other Party, in writing, six months in advance.

The obligations of the Parties regarding return of loaned equipment and software, intellectual property and data rights, and customs shall continue to apply after the expiration or termination of this Arrangement.

Done in duplicate, in the English and Portuguese languages, both texts being equally authentic.



For NASA



For AEB

Date: APR 4 2000

Date: APR 11 2000

Place: Washington, D.C.

Place: BRASILIA, DF