

National Aeronautics and Space Administration

Headquarters

Washington, DC 20546-0001



January 23, 2013

Reply to Attn of: Office of International and Interagency Relations

Dr. Fernando Paz-Pellat
General Coordinator
Mexican Carbon Program
Calle Chiconautla No. 8 Interior A
Col. Lomas de Cristo, C.P. 56230,
Texcoco, Estado de México
Mexico

Dear Dr. Paz-Pellat:

The National Aeronautics and Space Administration (NASA) and the Mexican Carbon Program (MCP) have expressed a mutual interest in pursuing cooperation on the collection of airborne lidar, hyperspectral, and thermal measurements in Mexico. The purpose of this letter is to establish a cooperative agreement (hereinafter the "Agreement"), between NASA and the Mexican Carbon Program (hereinafter referred to individually as "the Party" or jointly as "the Parties"), detailing the cooperation regarding airborne data collection.

Purpose of Cooperation

The NASA Carbon Cycle Science Program is funding the development of methods to inventory aboveground forest biomass and carbon in the continental United States and Mexico using remotely sensed satellite data. The project will integrate ground, airborne lidar, and space lidar measurements in order to develop space-based lidar models. These models will be used to estimate biomass and carbon across the entire continental United States and all of Mexico. Biomass totals and estimates of the variance of those totals will be calculated for the different land cover types within each of the ecozones across both countries.

The current project involves the collection of airborne laser ranging measurements on approximately 1500 ground plots scattered throughout the eastern and western United States and Mexico and approximately 15,000 kilometers of the Geoscience Laser Altimeter System (GLAS) orbital transects. The airborne measurements will be conducted by a United States aircraft and personnel with the assistance of colleagues from MCP. The study will attempt to address the following questions and goals:

1. How should the estimation of the variances of the different biomass estimates for cover types within ecozones within countries be conducted? Is there an appropriate way to treat the GLAS acquisitions as systematic samples in order to reduce sampling variability? How do model-based variance estimates compare with variances calculated assuming that the Ice, Cloud, and Land Elevation Satellite GLAS data were collected as a systematic sample? Is one statistical approach more robust and more defensible?
2. The study will provide a “snapshot” of standing carbon stocks in the United States and Mexico for 2013. These subcontinental snapshots may be compared with Mexican and United States ground-based estimates and with biomass maps generated using other remote sensing products.
3. Can Advanced Land Observing Satellite Phased Array L-band Synthetic Aperture Radar (PALSAR) dual-pol L-band radar observations be used to estimate biomass in areas where GLAS fails? If so, the investigators suggest an economical approach to integrate these two data sets, i.e., PALSAR and GLAS.

Definitions

The term “Related Entity”:

A. For the purpose of this Agreement means:

- (i) A contractor or subcontractor of a Party at any tier;
- (ii) A grantee or any other cooperating entity or investigator of a Party at any tier; or
- (iii) A contractor or subcontractor of a grantee or any other cooperating entity or investigator of a Party at any tier.

B. In the Liability and Risk of Loss Article, also means:

- (i) A user or customer of a Party at any tier; or
- (ii) A contractor or subcontractor, including suppliers of any kind, of a user or customer of a Party at any tier.

C. In the Liability and Risk of Loss Article and Transfer of Goods and Technical Data Article, may also include another State or an agency or institution of another State, where such State, agency, or institution is an entity described above or is otherwise involved in the activities undertaken pursuant to this Agreement.

Responsibilities

1. NASA will use reasonable efforts to carry out the following responsibilities:
 - (a) Provide and operate the aircraft for the campaign;
 - (b) Supervise the mounting of the NASA lidar, hyperspectral, and thermal instruments on the aircraft;
 - (c) Secure Mexican overflight clearance for the aircraft, as necessary;
 - (d) Operate the scientific instruments during the flight of the aircraft;
 - (e) Collect data from the instruments and perform statistical analysis; and
 - (f) Post-process all data and make the data freely and openly available.
2. MCP will use reasonable efforts to carry out the following responsibilities:
 - (a) Provide the ground data necessary to conduct the study;
 - (b) Provide the locations of relevant National Forest Inventory ground plots;
 - (c) Provide an interpreter to accompany the plane during the Mexican data collection in 2013; and
 - (d) Provide local guidance on flight paths.

Rights in Resulting Data

The Parties will have equal rights in the data resulting from this campaign. Joint publication of results is expected and encouraged. Neither Party shall prevent publication by the other Party.

Financial Arrangements

Each Party will bear the costs of discharging its respective responsibilities, including travel and subsistence of personnel and transportation of all equipment and other items for which it is responsible, except as noted in the Responsibilities section.

The ability of the Parties to carry out their obligations is subject to the availability of appropriated funds. Should either Party encounter budgetary problems that may affect the activities to be carried out under this Agreement, the Party encountering the problems will notify and consult with the other Party as soon as possible.

Points of Contact

For NASA:

Dr. Ross F. Nelson
614.4/Biospheric Sciences Branch, NASA-Goddard Space Flight Center
Greenbelt, MD 20771
USA
TEL: +1-301-614-6632
FAX +1-301-614-6695
E-MAIL: ROSS.F.NELSON@NASA.GOV

For the Mexican Carbon Program:

Dr. Fernando Paz-Pellat
General Coordinator
Calle Chiconautla No. 8 Interior A
Col. Lomas de Cristo, C.P. 56230
Texcoco, Estado de México
Mexico
TEL: 052-595-9512182
E-MAIL: ferpazpel@gmail.com
Mexico

Dr. Bernardus de Jong
International Relations Coordinator
Scientific Steering Committee, Mexican Carbon Program
Colegio de la Frontera Sur, Unidad Villahermosa
Villahermosa, Tabasco
Mexico
TEL: 052-993-3136110, EXT. 3401
E-MAIL: BJONG@ECOSUR.MX

Any change in a Party's respective contact information will be communicated in writing to the other Party.

Liability and Risk of Loss

1. Each Party hereby waives any claim against the other Party, employees of the other Party, the other Party's Related Entities or employees of the other Party's Related Entities for any injury to, or death of, the waiving Party's employees or the employees of its Related Entities, or for damage to, or loss of, the waiving Party's property or the property of its Related Entities arising from or related to activities conducted under this Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct.
2. Each Party further agrees to extend this cross-waiver to its Related Entities by requiring them, by contract or otherwise, to waive all claims against the other Party, Related Entities of the other Party, and employees of the other Party or of its Related Entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement. Additionally, each Party will require that their Related Entities extend this cross-waiver to their Related Entities by requiring them, by contract or otherwise, to waive all claims against the other Party, Related Entities of the other Party, and employees of the other Party or of its Related Entities for injury, death, damage, or loss arising from or related to activities conducted under this Agreement.

Transfer of Goods and Technical Data

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

1. All activities under this Agreement will be carried out in accordance with the Parties' national laws and regulations, including those laws and regulations pertaining to export control.
2. The transfer of technical data for the purpose of discharging the Parties' responsibilities with regard to interface, integration, and safety will normally be made without restriction, except as required by paragraph 1, above.
3. All transfers of goods and proprietary or export-controlled technical data are subject to the following provisions.
 - (a) In the event a Party or its Related Entity finds it necessary to transfer such goods or data, for which protection is to be maintained, such goods will be specifically identified and such data will be marked.
 - (b) The identification for such goods and the marking on such data will indicate that the goods and data will be used by the receiving Party and its Related Entities only for the purposes of fulfilling the receiving Party's or Related

Entities' responsibilities under this Agreement, and that such goods and data will not be disclosed or retransferred to any other entity without the prior written permission of the furnishing Party.

- (c) The receiving Party and its Related Entities will abide by the terms of the notice and protect any such goods and data from unauthorized use and disclosure.
 - (d) The Parties to this Agreement will cause their Related Entities to be bound by the provisions of this Article through contractual mechanisms or equivalent measures.
4. All goods exchanged in the performance of this Agreement will be used by the receiving Party or Related Entity exclusively for the purposes of the Agreement. Upon completion of the activities under this Agreement, the receiving Party or Related Entity will return or otherwise dispose of all goods and marked proprietary or export-controlled technical data provided under this Agreement, as directed by the furnishing Party or Related Entity.

Intellectual Property Rights

1. Nothing in this Agreement will be construed as granting, either expressly or by implication, to the other Party any rights to, or interest in, any inventions or works of a Party or its Related Entities made prior to the entry into force of, or outside the scope of, this Agreement, including any patents (or similar forms of protection in any country) corresponding to such inventions or any copyrights corresponding to such works.
2. Any rights to, or interest in, any invention or work made in the performance of this Agreement solely by one Party or any of its Related Entities, including any patents (or similar forms of protection in any country) corresponding to such invention or any copyright corresponding to such work, will be owned by such Party or Related Entity. Allocation of rights to, or interest in, such invention or work between such Party and its Related Entities will be determined by applicable laws, rules, regulations, and contractual obligations.
3. It is not anticipated that there will be any joint inventions made in the performance of this Agreement. Nevertheless, in the event that an invention is jointly made by the Parties in the performance of this Agreement, the Parties will, in good faith, consult and agree within 30 calendar days as to:
 - (a) The allocation of rights to, or interest in, such joint invention, including any patents (or similar forms of protection in any country) corresponding to such joint invention;

- (b) The responsibilities, costs, and actions to be taken to establish and maintain patents (or similar forms of protection in any country) for each such joint invention; and
 - (c) The terms and conditions of any license or other rights to be exchanged between the Parties or granted by one Party to the other Party.
- 4. For any jointly authored work by the Parties, should the Parties decide to register the copyright in such work, they will, in good faith, consult and agree as to the responsibilities, costs, and actions to be taken to register copyrights and maintain copyright protection (in any country).
- 5. Subject to the provisions of the Transfer of Goods and Technical Data and the Release of Results and Public Information Articles, each Party will have an irrevocable royalty-free right to reproduce, prepare derivative works, distribute, and present publicly, and authorize others to do so on its behalf, any copyrighted work resulting from activities undertaken in the performance of this Agreement for its own purposes, regardless of whether the work was created solely by, or on behalf of, the other Party or jointly with the other Party.

Release of Results and Public Information

- 1. The Parties retain the right to release public information regarding their own activities under this Agreement. The Parties will coordinate with each other in advance concerning releasing to the public information that relates to the other Party's responsibilities or performance under this Agreement.
- 2. The Parties will make the results available to the general scientific community, as appropriate and agreed between the Parties, in a timely manner.
- 3. The Parties acknowledge that the following data or information does not constitute public information and that such data or information will not be included in any publication or presentation by a Party under this article without the other Party's prior written permission:
 - (a) Data furnished by the other Party in accordance with the Transfer of Goods and Technical Data Article which is identified as export-controlled or proprietary; or
 - (b) Information about an invention of the other Party before an application for a patent (or similar form of protection in any country) corresponding to such invention has been filed covering the same, or a decision not to file has been made.

Exchange of Personnel and Access to Facilities

1. To facilitate implementation of the activities conducted under this Agreement, the Parties may support the exchange of a limited number of personnel from each Party, at an appropriate time and under conditions mutually agreed between the Parties.
2. Access by the Parties to each other's facilities or property, or to each other's Information Technology (IT) systems or applications, is contingent upon compliance with each other's respective security and safety policies and guidelines including, but not limited to: standards on badging, credentials, and facility and IT system application/access.

Customs Clearance and Movement of Goods

1. In accordance with its laws and regulations, each Party will facilitate free customs clearance and waiver of all applicable customs duties and taxes for goods necessary for the implementation of this Agreement. 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 will be borne by the Party of the country levying such customs duties or taxes.
2. In accordance with its laws and regulations, each of the Parties will also facilitate the movement of goods into and out of its territory as necessary to comply with this Agreement.

Ownership of Equipment

Unless otherwise agreed in writing, each Party will retain ownership of all equipment, including the goods, hardware, software, and associated technical data, it provides to the other Party under the terms of this Agreement, without prejudice to any individual rights of ownership of the Parties' respective Related Entities. To the extent feasible and recognizing that equipment integrated into the other Party's equipment cannot be returned, each Party agrees to return the other Party's equipment in its possession at the conclusion of activities under this Agreement.

Consultation and Dispute Resolution

The Parties agree to consult promptly with each other on all issues involving interpretation, implementation, or performance of the Agreement. Such issues will first be referred to the points of contact named above for the Parties. If they are unable to come to agreement, then the issue will be referred to the signatories or their designated representatives for joint resolution.

Choice of Law

U.S. Federal law governs this Agreement for all purposes, including, but not limited to, determining the validity of the agreement, the meaning of its provisions, and the rights, obligations and remedies of the Parties.

Amendments

This Agreement may be amended at any time by written agreement.

Continuing Obligations

The obligations of the Parties set forth in the Liability and Risk of Loss Article, the Transfer of Goods and Technical Data Article, the Rights in Resulting Data Article, and the Intellectual Property Rights Article of this Agreement will continue to apply after the expiration or termination of this Agreement.

Entry into Force and Termination

If the above terms and conditions are acceptable to MCP, I propose that this letter, together with your written affirmative reply, constitute the Agreement between NASA and MCP that will enter into force on the date of your affirmative reply and expire on August 31, 2017. This Agreement may be terminated by either Party upon 30 days written notice.

Sincerely,



Karen C. Feldstein
Director, Science Division
Office of International and Interagency Relations