



SCIENCE

International Cooperation at NASA

Matt Koeppe

International Program Specialist, NASA HQ, OIIR

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International Cooperation is NASA Heritage



- National Aeronautics and Space Act of 1958
 - The aeronautical and space activities of the U.S. shall be conducted so as to contribute materially to one or more of the following objectives: *[of 9]*
 - (1) The expansion of human knowledge of the Earth and of phenomena in the atmosphere and space;
 - (7) Cooperation by the United States with other nations and groups of nations in work done pursuant to this Act and in the peaceful application of the results thereof.
- National Space Policy of June 2010
 - Expand international cooperation on mutually beneficial space activities to: broaden and extend the benefits of space; further the peaceful use of space; and enhance collection and partnership in sharing of space-derived information.
 - Pursue human and robotic initiatives to develop innovative technologies, foster new industries, strengthen international partnerships, inspire our Nation and the world, increase humanity's understanding of the Earth, enhance scientific discovery, and explore our solar system and the universe beyond.



International Cooperation: Overview



- International cooperation at NASA:
 - Has been a cornerstone of NASA's activities throughout its history
 - Since 1958, NASA has concluded over 4000 agreements with over 100 nations and international organizations
 - Over 600 active international agreements
 - Cooperation now established with every region in the world
 - 8 partners account for 50% of the agreements
 - ESA, France, Germany, UK, Italy, Canada, Japan, Russia
 - Every Mission Directorate has international partnerships
 - Of the approximately 60 SMD missions in operation, well over half have international contributions
 - By mission area: 2/3 of agreements are for NASA science missions



Early NASA Principles for Cooperation



- NASA policy foundations are unchanged after 50 years
 - Designation by each participating government of a central agency for the negotiation and supervision of joint efforts
 - Agreement upon specific projects rather than generalized programs
 - Acceptance of financial responsibility by each participating country for its own contributions to joint projects *[no exchange of funds]*
 - Projects of mutual scientific interest
 - General publication of scientific results
- * Cited from *International Programs*, NASA Office of International Programs, 1962; In place by September 1959 per Homer Newell's book, *Beyond the Atmosphere* (p. 306)



International Cooperation: Current Guidelines



- NASA international partners are generally government agencies due to the significant level of investment and legal requirements
- Each Partner funds its respective contributions, but contributions need not be equivalent
- Cooperation must be consistent with foreign policy objectives of each Partner
- Projects/Partnerships:
 - Must have scientific and technical merit and meet NASA program objectives
 - Must be mutually beneficial (demonstrate specific benefit to each Partner)
 - Are structured to protect against unwarranted technology transfer
 - Are structured to establish clearly defined managerial and technical interfaces to minimize complexity
 - Are documented in a written, binding agreement, closely coordinated with the U.S. Department of State and other U.S. government agencies as needed



Why Do We Need International Agreements?



- International Agreements are tools that:
 - Clarify responsibilities of the partners
 - Confirm commitments and terms
 - Document the quid pro quo and benefits of the cooperation
 - Protect investment and interests, such as:
 - Technical data rights
 - Intellectual property rights
 - Allocation of risk – cross-waiver of liability
 - Allow import/export of technical data and goods
 - Confirm arrangements to meet international obligations, such as UN Registration Convention, if necessary



When Do We Draft International Agreements?



- International Agreements are not required for proposals
- Mars 2020 AO guidelines and requirements for non-U.S. participation are covered in Section 5.9
- If the AO proposal is from a foreign entity – or if U.S. AO proposal includes foreign participation – a Letter of Commitment is needed from the foreign partner's government agency or funding institution, acknowledging the activity and preferably indicating sufficient funds will be made available
- International Agreements are drafted after final selections are made
- **Note : International Agreements will likely take several months to put into place!**



Challenges to International Cooperation



- Management complexity
 - Decision-making is inherently more complex
 - Communication challenges
 - Differing specifications, standards and assumptions
- Technical and programmatic risk
 - Interdependence – the “critical path” issue
 - Interfaces are difficult to manage at a distance; it’s harder to monitor progress and get early warning of problems
 - Multiple partners with multiple interfaces adds complexity
- Political risk
 - Budgetary and bureaucratic uncertainties
 - Potential linkage to political activities unrelated to the cooperation



Why International Cooperation?



- Benefits of international cooperation:
 - Leverage resources (financial, technological, scientific, etc.)
 - Access foreign capabilities or geography
 - Adds unique capability and/or expertise
 - Increases mission flight opportunities
 - Enhances the scientific return
 - Promote U.S. foreign policy interests
 - NASA follows foreign policy guidance from the U.S. Department of State



NASA's International Agreements



- NASA's International Agreements do **NOT** trump export control laws & regulations

An International Agreement does not replace a contractor's need for a Technical Assistance Agreement



Questions?



Office of International and Interagency Relations (OIIR)

***Matthew Koeppe
International Programs Specialist
Science Division***

1-202-358-2468
matthew.t.koeppe@nasa.gov

<http://oiir.hq.nasa.gov/>