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Piero Messina, of Italian nationality, has been working on the ESA's space exploration programme Aurora since its inception also acting as Secretary of the supervisory Board of Participants. He is currently dealing with coordination and public affairs for the Programme Aurora. In this capacity he has been deeply involved in the on going talks with international partners on a global strategy and international cooperation for space exploration. He is the organiser of the series of the joint ESA / ASI Spineto workshops. He joined the European Space Agency in 1991 where he held several positions in the field of financial and project management. He served as Coordinator with the Director of Industrial Matters and Technology Programmes. He was responsible for education policies and relations with European Higher Education Institutions until 2003. He holds a degree in Political Science, International Economic Relations, from the University of Florence and a Master in Space Studies (MSS) from the International Space University in Strasbourg.



Towards the Establishment of a Strategic
Framework
for a
Global Exploration Strategy

A view from Europe

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Europe's involvement in space
exploration

Automatic missions to distant Worlds:

Mars Express

Cassini/Huygens (with NASA and
ASI)

SMART-1

Venux Express

Participation in the ISS and Human
Spaceflight

Columbus Laboratory

ATV

European Astronauts

Future exploration activities by Europe
will build up on the results achieved, the
investments made and the capabilities
developed so far



A renewed spirit for space exploration

Since few years space exploration has risen on space fairing Nations' agenda:

- ESA's Aurora Programme (2001)
- US President Vision for Space Exploration (2004)
- New JAXA's Vision "JAXA 2025" (2005)
- China manned space programme as well as planned robotic missions to the Moon (Chang'e -1, -2, -3)
- Russia revamped space program include a new crew transportation system as well as robotic missions to Moon and Mars'



Different Programs – Similar Goals

- Moon is the next immediate target in most cases and is an element of all strategies;
- Mars remains an important destination on long-term and with a strong scientific case;
- Several robotic missions will reach the Moon and Mars in the next 10-15 years;
- First human landings, on the Moon, not likely to happen before 15 years.



Different Programs – Similar Goals

Declared rationale for space exploration:

- Advancing scientific knowledge;
- Further economic interests (mainly through innovation and support to industrial competitiveness);
- Inspiring the public and the youth in particular;

US Vision specifically calls for advancing:
“U.S. (...) security interests”.



International Cooperation

In this seemingly converging context (“a journey not a race”) international cooperation becomes an important enabling element .

It allows to enhance program’s robustness

- Strengthen the program domestically;
- Resilience to changing political environment;
- Division of labour as well as redundancy;

- Additional/Gap filling capabilities;
- Providing leadership.



International Cooperation

All space exploration programs foresee to some extent international cooperation as an important feature. For instance:

A Renewed Spirit of Discovery (US, 2004):

“Promote international and commercial participation in exploration to further U.S. scientific, security, and economic interests”

ESA's Aurora Program is conceived to prepare Europe to play a significant role in a global space exploration endeavour.



Establishing an International Cooperation Framework

First consultation of international partners by NASA in November 2004:

First Agency-to-Agency formal talk since the Vision has been announced

Previous NASA Leadership

25 Agencies invited of which 18 attended the event including ESA, EC, JAXA, Roskosmos, CNSA, ISRO, 4 main European national agencies etc.;



Establishing an International Cooperation Framework

The joint ESA/ASI Workshops on “International Cooperation for Sustainable Space Exploration” in Spineto, Italy:

- 1st May 2005
- 2nd May 2006

Attempt to create the conditions for a global partnership for space exploration while recognising current NASA’s leadership.

Core participation as in previous Workshop in USA



Establishing an International Cooperation Framework

The currently on going NASA-led process was kicked off in April 2004 with a “non attribution basis” consultation.

A broad Request For Information was launched along with a consultation with stakeholders.

Consultation with 13 International Space Agencies is also part of the process:

- | | | |
|------------|--------|---------|
| - CNSA | - KARI | - CSIRO |
| - Roscomos | - CSA | - ISRO |
| - Jaxa | - NSAU | - DLR |
| - ESA | - ASI | |
| | - BNSC | |
| | - CNES | |



Establishing an International Cooperation Framework

Collective work among representatives of the space agencies involved will continue intensively over the next months in order to develop a:

“Strategic Framework for Global Sustainable Space Exploration”
(working title)

While continue working under NASA leadership to define a comprehensive set of objectives for Moon exploration (“Why? What?”)



Establishing an International Cooperation Framework

The International Partners are working towards a shared vision for robotic and human exploration of the Solar System eventually leading to sustained human presence on other Planets.

They will address:

- The global benefits of exploring together;
- The overall exploration goals and the place of Lunar exploration therein;
- The implementation aspects of this global strategy and their desired features.



Establishing an International Cooperation Framework

As a result of the work among international Partners (Montreal mtg.) the proposed Themes were re-worked as follows (not final):

- Serve public policies by inspiring and educating individuals, improving global welfare and sustaining economic growth;
- Foster the development of new markets and technological innovations as well as to demonstrate economic resource exploitation;
- Strengthening and expanding global partnerships among nations;
- Pursue scientific activities to address fundamental questions about the solar system, the universe, and our place in



Conclusions

Europe, through ESA in coordination with its Member States, is committed to Space Exploration in the frame of a balanced European Space Policy.

Space Exploration is envisioned as a global undertaking involving as many nations as possible.

International cooperation is a condition to ensure robustness and long term sustainability of space exploration

Consultation and coordination is a key feature that should not prevent however each partner to retain control of its program.

