

Proposition de discours de clôture du séminaire
« Space Exploration and International Cooperation »

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It is a pleasure for me to close this seminar and to discuss the topic of space exploration and international cooperation.

Before proceeding, I would like to thank our partner the **Elliott School of International Affairs at George Washington University**, and its Dean Dr. Harding, its **Space Policy Institute**, and its director Dr. Logsdon. I was always curious about the meaning of such an institute in a school of international affairs. Today, with this event, I finally understand...

I would like to thank as well, the Office for Science and Technology Policy of the White House, NASA, the European Commission, the European Space Agency, ESA, and the French Space Agency, CNES, for their support and for putting together such an outstanding program. Of course this would not have been possible without the generosity of all our industrial sponsors.

Finally, I would like to thank all the speakers and panelists and the members of the audience for being here, especially our friends who came from far away... from Russia, Japan, Canada, Europe and California and Colorado...

Introduction

For the last three years the Mission for Science and Technology of the Embassy of France, in cooperation with CNES, the French Space Agency, and in partnership with a renowned U.S. university, has organized a timely seminar on a space related issue.

Space and Security was held with MIT in April 2002 in Boston,

Space and Environment was held with the Scripps Institution of Oceanography in February 2003 in La Jolla, CA, months before the fruitful international summit on the Global Earth Observation System in Washington. Recommendations to implement a Global earth Observation System of Systems were supported again this month during the G8 meeting.

It was time to return to Washington to address a topic dear to our hearts, “**Space exploration and international cooperation**”.

Space exploration has been going on for nearly four decades now, and international cooperation in space is almost as old.

Nevertheless, this seminar is indeed very timely, and this is why:

- 1) The new U.S. vision for space exploration was announced by President Bush on the 14th of January this year. This vision is both bold and compelling; it is at the same time a challenge and an opportunity for all of us.
- 2) Dr. Aldridge, who was appointed by the President himself to propose an implementation strategy for this vision, delivered his recommendations last week in this very university. I want to

thank Pete Aldridge once again for accepting to speak this morning. I understand he shared his findings on international cooperation (within a transformational environment and spiral developments).

- 3) In these difficult times we need to find a uniting vision to strengthen our partnerships and alliances, a focal point out of this world to combine our efforts and renew our friendships.
- 4) Last but not least, it is timely to remind everybody here that the cooperation between our two countries in space, I mean the cooperation between NASA and CNES, dates back from President Kennedy. In the early months of CNES, four decades ago, it was agreed between the U.S. and France that all CNES engineers on orbital systems would spend a year at the NASA Goddard Flight Space Center, in Greenbelt, just on the other side of the beltway. This was probably one of the greatest technology transfers in history, at least in our common history. Professor Jacques Emile Blamont who initiated this agreement and who is here with us today once said that CNES is NASA's daughter. That is probably why CNES has the same strengths and weaknesses as NASA.

I would like to spend some time on the trends of the bilateral cooperation in space between the U.S. and France and then address the increasing role of the European Space Agency, ESA, and the emerging and necessary involvement of the European Commission as a key partner to the U.S. in space.

Finally I would like to capture some of the ideas that were discussed here and try to anticipate along which lines the transatlantic cooperation, in combination with other international cooperations, could play a positive role in space exploration for the decades to come.

1) bilateral cooperation

Space transportation is probably the only field where our two space agencies have not really undertaken any significant cooperation. I will come back to that in a minute. Everywhere else, joint efforts existed and were successful. To name a few:

Telecommunications: the UHF relay on the MARS Global Surveyor relaying most of the pictures from the rovers Spirit and Opportunity,

currently rocking and rolling on the red planet, has been provided by CNES.

Earth Observation: the satellite Topex-Poseidon, followed by Jason 1 and soon Jason 2, is often referred to as the success story in international cooperation. Indeed this ocean topography mission helped us tremendously to understand the El Nino phenomenon.

Human Space Flight:

French astronauts have flown 16 times in space: **8 times with our Russian friends, and 8 times on the shuttle.** One of these flights took place exactly 8 years ago, on June 20th 1996 during STS-78, when the young engineer, Jean-Jacques Favier, who is here today as well, flew on Columbia thanks to our American friends.

Now, to come back to the lack of cooperation on space transportation, it is necessary to keep in mind that in the beginning of the 60s, France was in the process of developing its own independent ballistic missile capability. This was considered proliferation by the U.S. Today, thanks to that national effort, France has its “force de frappe” and Europe has its own launcher - Ariane 5.

Forty years later, the launchers are still costing all of us a lot of precious resources, about 25% of our space budgets. Can you imagine spending 25% of your income on your car?

I believe it is time to move on in this field, to go further together:

1) We now cooperate hand in hand, with our Russian and American partners on the non-proliferation of missile technology. You all should know about the **MTCR which is in fact a strategic multilateral cooperation on launcher technology.**

2) Our companies both commercialize Russian launchers and they work together to provide back-up options to their customers. I am referring here to the Arianespace-Boeing-MHI partnership. Some, like Lockheed Martin, incorporated foreign sub-systems in their launchers which provided for both additional reliability, and lower production and development costs. I deeply regret that we were not able to partner on the development of a common upper stage engine back in 2000. I guess Europe was not ready at that time. The exploration might give us another opportunity to equip our expandable launchers with a mighty new upper stage.

3) This field, which looks more and more like a commodity market characterized by an overwhelming over capacity, is often narrowly perceived as only competitive.

Space transportation is key to space exploration, by space transportation I mean both space launch and atmospheric reentry. Cooperation in launch transportation is now possible and necessary to achieve a global successful exploration of space.

II) **This last point leads me naturally to transatlantic cooperation:**

In fact, Ariane is a very good example of a field that has been Europeanized. The launchers are now handled at the European level by the European Space Agency. Some people argue it is the European JSF model of cooperation.

In space science and human space flight, ESA has become the European partner of NASA. I must recall here that Ariane 5 and the Automated Transfer Vehicle, ATV, will be key elements of our cooperation on the International Space Station.

The European Union is emerging rapidly as the future main European player in space. With the Galileo program, it is the first time we see the real involvement of the E.U. in space. This involvement allowed

us to find an agreement on a new type of cooperation with the U.S. A cooperation that will be very intimate, that will strive for the commercial interoperability of two systems while preserving the compatibility for the military applications.

At the same time, the commercialization of Russian launchers and the dependence of the International Space Station, on the availability of the Soyuz, are clear indications that another trend has been initiated. Whether or not we admit it, space has become global from the market stand point, or multilateral from the foreign relations point of view.

Over time, bilateral transatlantic cooperation is being replaced by multilateral transatlantic cooperation, which is slowly being replaced by international multilateral cooperation in space.

The International Space Station paved the way for a new type of international cooperation, involving 16 nations. Although this multilateral model is not perfect, it has provided sustainability and robustness to human space flight for more than a decade. It remains to be seen if the partners can find now an agreeable way to both

utilize efficiently this costly infrastructure and optimize the associated costs.

The Galileo program is itself a multilateral program since it involves all the E.U. members as well as the U.S. and others.

The Global Earth Observation System of Systems, which is meant to observe measure and understand our only real spaceship so far, Mother Earth, is indeed a multilateral venture.

Finally, to conclude with space Telecommunications, they now belong to the realm of the global market. Intelsat, Immarsat and Eutelsat, once multilateral international organizations, are now global private equity companies.

This might tell us that after a period of “multilateralisation”, the time has come for a global market and global entrepreneurship. I believe the Aldridge Commission has discussed this point as well, so I will not comment further.

III - What is the role for the transatlantic cooperation in space exploration?

Once again, this U.S. vision for space exploration is very attractive and compatible with the European vision. However, different

roadmaps must somehow co-exist. They have to be coordinated to be more efficient, to provide sustainability, and yet to preserve the principle of competition.

I see three main axes that I believe have been discussed during this seminar that can help us to coordinate our two roadmaps.

1) Taking advantage of the current infrastructures

The ISS, the Expandable Launch Vehicles, the Japanese HTV and the European ATV have been costly developments during last decade that we should use to the maximum possible extend for exploration.

2) Defining common standards early

Unlike the International Space Station where both Russian and U.S. interface standards remain, we should discuss from the onset, before new systems are developed, new exploration standards, in launch capabilities, in telecommunication, to build robustness and flexibility for exploration.

It is the only way for spiral development, as promoted by the U.S., to be implemented internationally.

If I am not mistaken, the Ariane 5 payload interface specifications were compatible with the reference of the 80's, the space shuttle. It

then became the Evolved Expandable Launch Vehicle, EELV, standards, through the commercial market.

To this end, we should follow the GPS/Galileo negotiations where common standards were agreed upon before the systems are built.

3) Promoting global industry to industry partnerships

We should give more freedom to industry to initiate partnership in order to reach higher efficiency through global competition. Of course, this supposes the following alternative: either the U.S. ITAR limiting constraints are to be applied; or they are to be changed. **I believe that only the later will truly provide for a vibrant and sustained space exploration.**

Conclusion

These are three examples among the many possibilities for international cooperation which have been discussed during this seminar.

Therefore, to conclude, I hope that thanks to you this seminar will result in a report that shall capture the new ideas and become a reference for international cooperation in space exploration in the years to come.

Thank you all again very much.