



You are invited to a seminar on

INTEROPERABILITY AND SPACE EXPLORATION



September 6th and 7th 2006
George Mason University – Arlington Campus
3401 North Fairfax Drive
"Original Building" – Room 329
Arlington, VA 22201

Co-organized by

The Center for Strategic and International Studies'
HUMAN SPACE EXPLORATION INITIATIVE

The Center for Aerospace Policy Research
GEORGE MASON UNIVERSITY SCHOOL OF PUBLIC POLICY

and

THE AMERICAN ASTRONAUTICAL SOCIETY

INTEROPERABILITY AND SPACE EXPLORATION

September 6th and 7th, 2006 • Washington, DC

OVERVIEW

With the age of globalization, increased connectivity is increasingly the rule. To make efficient use of this trend and remain competitive both economically and technologically, interoperability becomes a necessity. In many disciplines, such as information technology, aerospace, and software, interoperability has become an essential and fundamental requirement. Yet this same type of integration is still relatively rare within the space exploration field itself – countries have few common standards, definitions, practices, or objectives. For space exploration to be successful and sustainable, space exploration must absorb and implement the lessons and best practices of interoperability from other sectors. To address this issue the **Human Space Exploration Initiative** (HSEI) at the **Center for Strategic and International Studies** (CSIS), the **Center for Aerospace Policy Research** of the **School of Public Policy** at **George Mason University**, and the **American Astronautical Society** are co-organizing a major international seminar on *Interoperability in Space Exploration* to take place in at the Arlington Campus of George Mason University near **Washington, DC** on **September 6th and 7th, 2006**. This seminar will include panels with case studies from both inside and outside of the space sector discussing various facets of interoperability, followed by discussions of lessons learned from both the private and public sector on interoperability.

AGENDA: WEDNESDAY, SEPTEMBER 6TH 2006

08:15 - 09:00 Registration and Coffee

09:00 - 09:15 Welcome Remarks

09:15 - 09:45 Opening Remarks

A discussion of interoperability in broad terms, borrowing from experience with interoperability in the context of NATO and exploration of its application to space exploration.

Speaker: Dr. John Hamre, President and CEO, CSIS

09:45 - 10:00 Coffee Break

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10:00 - 11:30 Panel 1: Hardware Interoperability

In a number of sectors, practitioners have included ease of interoperability as a primary defining feature of their product. In other cases, the use of open-source designs and architectures for hardware enables new products to include interoperability as a principle feature.

Moderator: Lyn Wigbels, *Vice President, International, AAS*

Speakers: Program Development – Greg Glaros, *Synnexus Corporation*

ISS Hardware – Sam Scimemi, *Senior Integration Manager, International Space Station Program Office, Office of Space Operations, NASA Headquarters*

Intermodal Freight– Ken Button, *Professor, Director, Center for Transportation Policy, Operations and Logistics, GMU School of Public Policy*

11:30 - 13:00 Lunch

13:00 - 15:15 Panel 2: Software and Middleware Interoperability

Interoperability in software and middleware is critical as it affects things beyond the realm of systems integration into more complex arenas such as interagency cooperation, joint operations, and basic information exchange, to name a few. This session explores interoperability in the context of software, interfaces, systems, and information flow mechanisms

Moderator: Michael Schrage, *Co-director, eMarkets Initiative, MIT Media Lab, and Senior Advisor, MIT Security Studies Program*

Speakers: Air Traffic Control – Jere Meserole, *Director, Engineering and Programs, Advanced Air Traffic Management, Phantom Works, The Boeing Company*

Middleware – Jeff Schick, *Vice President of Social Networking Software Lotus IBM Software Group*

Shuttle-Mir Integration – Frank Culbertson, *Senior Vice President and Deputy Business Unit General Manager, Science Applications International Corporation*

NATO Interoperability – J. Troy Turner, *Section Head, C4 Interoperability Standardization & Architectures, Supreme Allied Command Transformation*

Shuttle-Mir Policy Perspectives – Bryan O'Conner, *Chief, Safety and Mission Assurance, NASA*

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14:30 - 14:45 **Coffee Break**

AGENDA: THURSDAY, SEPTEMBER 7TH 2006

08:30 - 10:00 **Panel 3: Orgware and Interoperability**

While a given set of items may be interoperable, if an organization cannot take advantage of this due to fundamental structural shortcomings, then the interoperability itself can be rendered useless. The set of organizational tools needed to truly make best use of interoperability are sometimes referred to as orgware.

Moderator: Ken Button, *Professor, Director, Center for Transportation Policy, Operations and Logistics, George Mason University School of Public Policy*

Speakers: COSPAS/SARSAT – Ajay Mehta, *SARSAT Manager, NOAA Space and Logistics* – Andy Evans, *Space Logistics Project, United Space Alliance*

Institutional Issues In The Deployment Of Intelligent Transportation Systems – Brien Benson, *Professor, Manager, ITS Implementation Research Center, George Mason University*

10:00 - 10:15 **Coffee Break**

10:15 - 12:15 **Panel 4: Space Industry Perspectives on Interoperability**

This session reviews the results of previous panel discussions, exploring what can be gleaned from previous experience in and outside of the space sector, and how these experiences can be applied to address current problems and open new opportunities to private sector participants in space exploration. This panel will also discuss the role of standards development and consensus standards building processes and their role in space exploration.

Moderator: James Lewis, *Director and Senior Fellow, Technology and Public Policy Program, CSIS*

Speakers: Galileo-GPS Integration – Bruce De Cleen, *Navigation Program Manager, Aircraft Engineering Division, Federal Aviation Administration*

Boeing – Paul Eckert, *International & Commercial Strategist, Boeing Integrated Defense Systems – Space Exploration*

Northrop Grumman – Harrison Freer, *Director, Space Programs, Northrop Grumman Integrated Systems*

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Standards and Interoperability – Craig Day, *Standards Program
Manager, AIAA*

12:15 - 13:45 **Lunch**

13:45 - 16:00 **Panel 5: Space Agency Perspectives on Interoperability**

This panel discussion presents the observations from civil space agencies regarding interoperability, cooperation, and their future space exploration plans.

Moderator: Vincent Sabathier, *Senior Fellow and Director of Space
Initiatives, Technology and Public Policy Program, CSIS*

Speakers: NASA – Jeffrey Volosin, *Lead, Global Exploration Strategy
Program, NASA*

CNES – Jean-Jacques Tortora, *CNES Representative in the
United States and the French Embassy Space Attaché*

JAXA – Kiwao Shibukawa, *Director, Washington DC Office,
JAXA*

ESA – *Speaker To Be Determined*

16:00 - 16:15 **Concluding Remarks**