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WORKING PANEL #2

TECHNOLOGY TRANSFER WITHIN THE GOVERNMENT

COL. JOHN RUSSELL

TECHNOLOGY TRANSFER WITHIN THE GOVERNMENT

CHARTER

TO EXAMINE TECHNOLOGY TRANSFER WITHIN THE U.S. GOVERNMENT

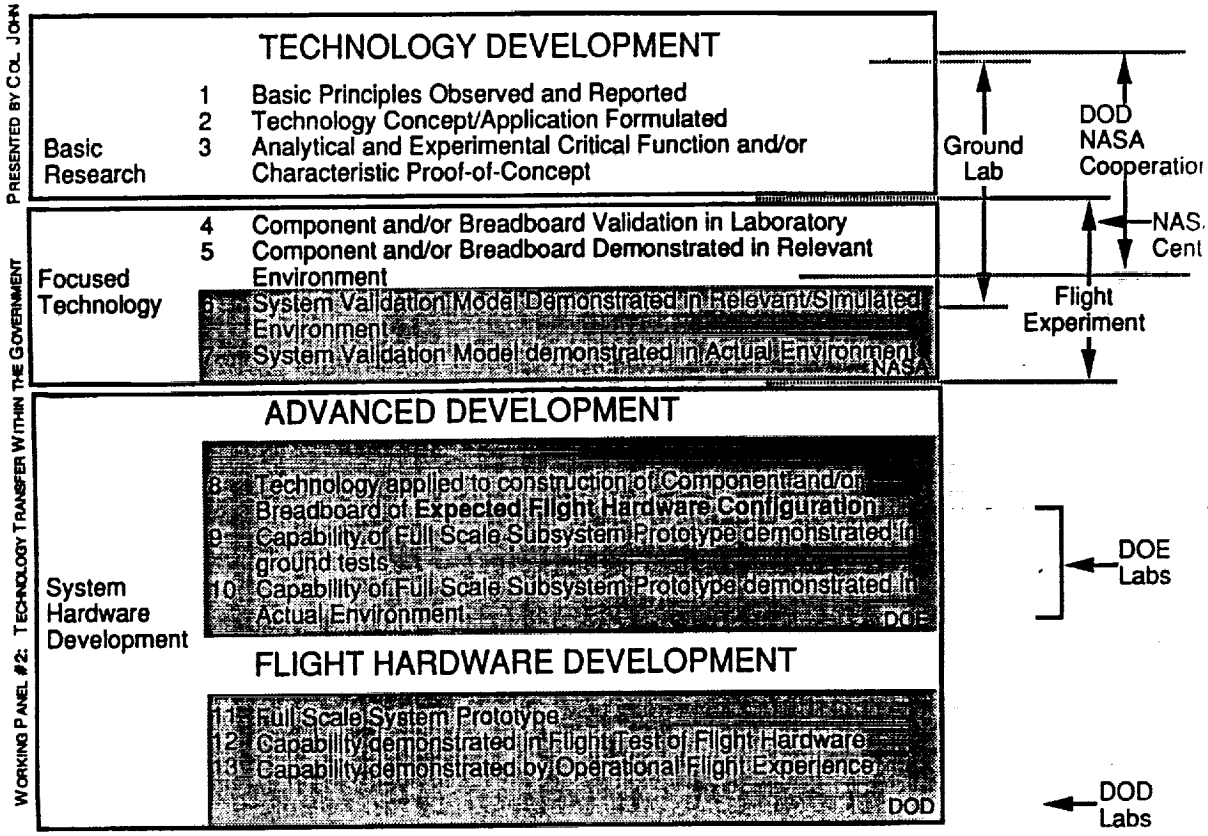
SUBTOPICS

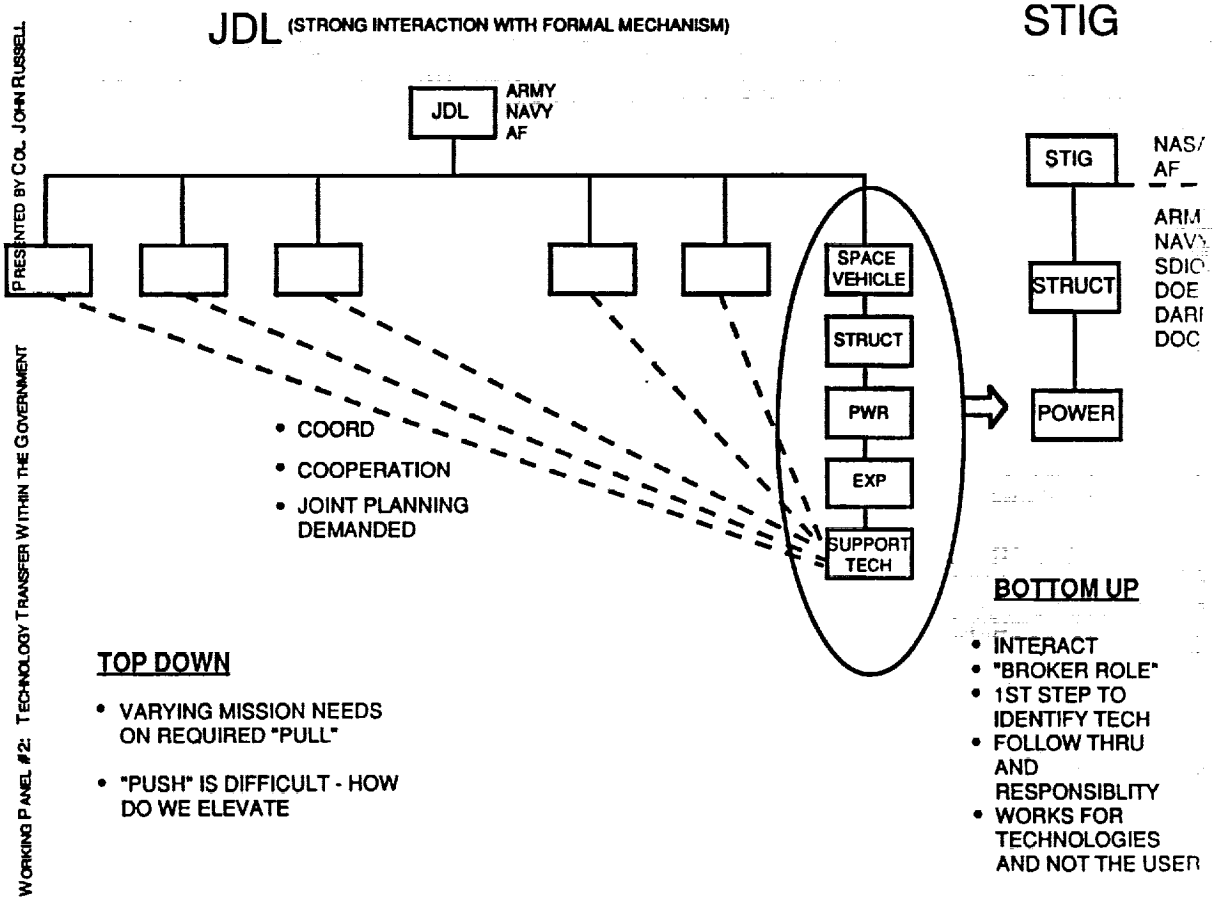
A TRANSFER FROM NON-NASA US GOVERNMENT TECHNOLOGY DEVELOPERS TO NASA SPACE MISSIONS/PROGRAMS

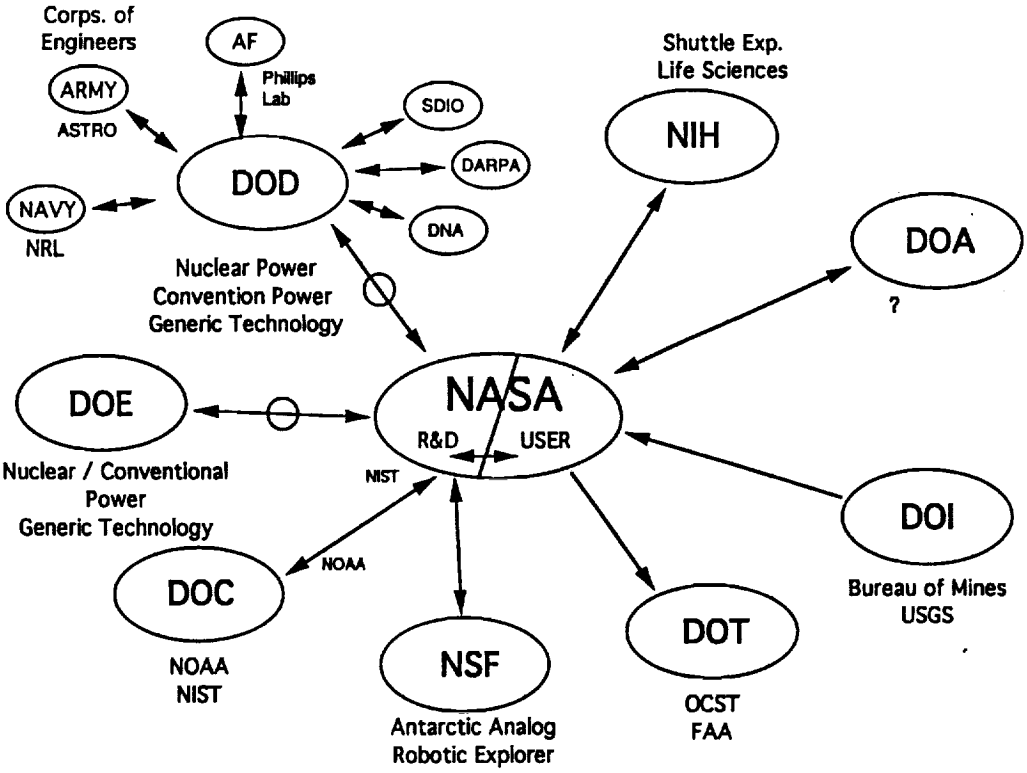
B TRANSFER FROM NASA TO OTHER US GOVERNMENT CIVIL SPACE MISSION PROGRAMS

MAJOR SUBTOPIC ISSUES ARE ESSENTIALLY THE SAME.

Technology Maturation Milestones

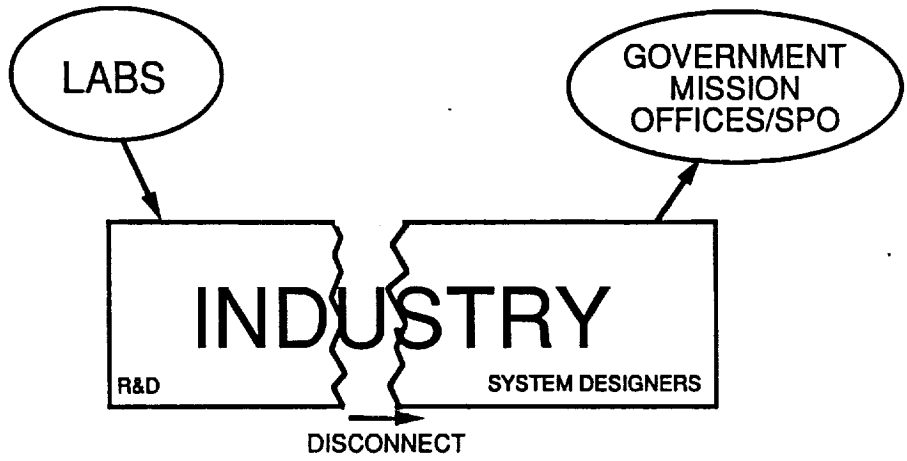




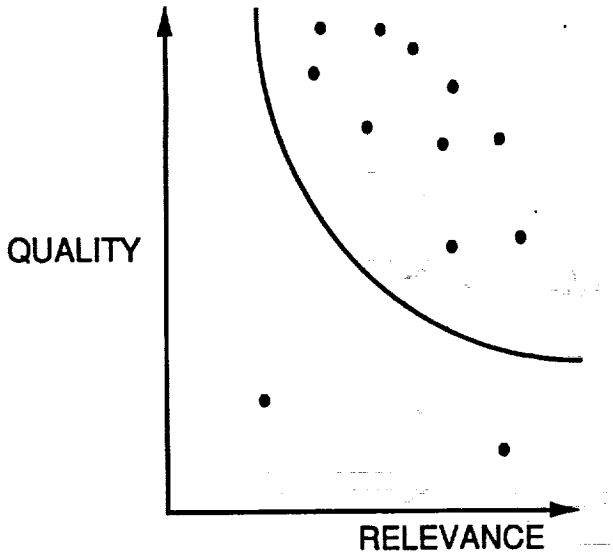


- Use planning process to look for areas of commonality (combine resources)
- Joint roadmaps
- Communications is key -- STIG
- Include Indusrtial partner

WORKING PANEL #2: TECHNOLOGY TRANSFER WITHIN THE GOVERNMENT PRESENTED BY COL JOHN RUSSELL



MEASURES OF MERIT



VARY WITH LEVEL/TYPE AT TECHNOLOGY

CONCLUSIONS

- USEFUL MECHANISMS ARE IN PLACE
- NEWER MECHANISMS NEED TO MATURE, THEN BE REVISITED
- CULTURE SHIFT MAY BE NECESSARY

Omit

T. Working Panel #3: Transfer between NASA and the Aerospace Community

Russell C. Cykoski
General Research Corporation

Robert G. Steen
Princeton Synergetics, Inc.

The following participants of the workshop were members of this panel:

Individual	Organization
Adelson, Dr. Harold	TRW
Bowles, Mr. Norman	Department of Transportation
Dunbar, Mr. Dennis	General Dynamics
Fuller, Mr. Joseph	Futron Corporation
Gernand, Mr. Joseph	Rockwell International
Holcomb, Mr. Lee	NASA Headquarters
Jennings, Mr. John	NASA Headquarters
Marinzel, Mr. Ronald	BDM International Inc.
Marzwell, Dr. Neville	Jet Propulsion Laboratory
McGovern, Dr. Dennis	McDonnell Douglas
Morris, Mr. Charles	NASA Headquarters
Olstad, Dr. Walter	Lockheed
Palmer, Dr. Larry	Hughes Network Systems
Sackheim, Mr. Robert	TRW
Thurman, Mr. Don	Marshall Space Flight Center
Weaver, Mr. Willard	Langley Research Center
Wells, Mr. Damon	Department of Transportation

The panel agreed to discuss the two suggested subtopics pertaining to technology transfer between the NASA and the aerospace community:

A. Technology transfer associated with a projected Government application.

B. Technology transfer associated with a commercial space sector application.

Mr. Sackheim served as chair of the panel on Wednesday, and was succeeded by Mr. Dunbar on Thursday. Dr. Olstad was Rapporteur for subtopic A. Dr. Marzwell was Rapporteur for subtopic B. Mr. Cykoski acted as Facilitator for the panel. No Issue To Be Considered (ITBC) forms were submitted.

There were four pilot presentations given during the session. The first, presented by Mr. Bowles, focused on commercial space activities as they relate to international competitiveness issues and the need for greater self-determination by private industry. Mr. Gernand followed with a discussion of two technology partnership models, one for government as a customer of technology and one for government as a facilitator for a commercial customer. Mr. Morris described the NASP program and its technology transfer activities. Mr. Holcomb discussed the High Performance Computing and Communications Program and its relation to international competitiveness, including the role of technology transfer in greater speed innovation.

The working panel divided into two subtopic discussion groups. The subtopic A working group discussed several issues, including concern about the degree of government control and the extent of industry dependence. The subpanel members agreed that funding priorities were incompatible with goals for national competitiveness and that greater financial support is needed for technology transfer. The nature of the transfer process was questioned regarding the amount of technology designated for commercial use, the necessary level of development needed for transfer, and the type of incentives needed for greater transfer. The subpanel also discussed the Japanese model of tech transfer for comparison, and the effectiveness of

the SBIR program for large aerospace firms.

The subtopic B working group had a briefer discussion, with the subpanel members submitting written comments to the rapporteur. These comments are reflected in the subtopic B presentation given at the plenary session held Thursday morning.

At the plenary session, Mr. Dunbar, Dr. Olstad, and Dr. Marzwell made presentations summarizing the panel's conclusions and recommendations regarding both subtopics. Those findings are listed below:

Subtopic A: Technology transfer associated with a projected Government application

Issues

- Management (in government and industry) lacks understanding of the tech transfer process and its importance.
- There has been an increase in the number of inhibiting laws and regulations.
- NASA and industry have lost their enthusiasm for tech transfer activities.
- The amount of personnel mobility is inadequate.
- R&T reacts in knee-jerk fashion to programmatic instabilities.

Conclusions and Recommendations

- Clarify the roles for parties involved in tech transfer.
- Develop common understanding of the tech transfer process.
- Recreate "passion" for tech transfer among involved parties, especially NASA.
- Institute a National Space Technology Facilities Policy.
- Increase the amount of personnel exchange.
- Improve the management of tech transfer activities, especially through the ITP.

Subtopic B: Technology transfer associated with a commercial space sector application

Issues

- Lack of long-term strategic goals for government agencies involved in tech transfer.
- Industry relies too heavily on government for space market needs and definition due to lack of adequate capital requirements.
- Commercial sectors incur undue risk due to the low readiness levels of the government's R&D base.
- No clear funding for engineering prototyping, qualification, or flight validation.
- Human competence, training, and education levels do not match higher and more complex technology levels.
- Multi-mode technology transfer organizations are highly disorganized.
- SBIR effectiveness has no impact on space systems development due to a shortage in capital borrowing capabilities.

Conclusions and Recommendations

- A new methodology and approach to tech transfer is more important than more money.
- Cost effective, goal-oriented consortiums are a promising new endeavor.
- Joint technology fairs or shows are more effective than publications alone where a "hands-on" approach is encouraged.
- Define a quantifiable procedure with measurable objectives for technology transfer.
- Develop a culture for business between government and industry based on cost effectiveness and technology transfer.