

Infrastructure for International Human Space Exploration

Outline Study 3.4

This effort was conceived (and chartered by IAA Commission III) as a companion to two currently ongoing studies. These endeavors, "The Next Steps in Exploring Deep Space" which is currently in publication and 3.6 "Strategies and Concepts for Future Exploration and Commercial Development of the Solar System" which is in report preparation were to provide the basis for this study. A brief topical outline of this report has been prepared to provide a basis of discussion to set the scene before proceeding with the implementation of the effort.

1. Executive Summary
2. Foreward
- 3 .Introduction
 Summary of Destinations, Architectures and Prerequisites from the two predecessor studies.
4. International Management approach-includes development of International Standards and Government Interaction
5. Formulation of an International Concept and Design Organization
6. Space Assembly approaches and guidelines
7. Use of ISRU
8. Use of Libration Points
9. Disruptive Technology
10. Role and Identification of Commercial endeavors
11. Legal and Environmental implications
12. Financial necessities

This rather ambitious outline is not what Webster defines as "Infrastructure" but is meant to compliment the good

work of the two reference studies in the light of the changes and initiatives of the United States, China, Japan , Russia and Europe ongoing at the present time. It is the opinion of this author that present planning lacks the long range focus of the reference studies and that a truly Internationally inspired thrust back into space must be promulgated if our dreams of a vigorous future space program are to be realized.

The outline given here is not perceived to be the ultimate product but is shown here to be a point of departure and a vehicle for future discussion.

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This rather comprehensive outline, while ambitious, was an attempt to categorize the content of a potential study that has been overtaken by events. The changes and initiatives within the United States NASA, Japan, China and Europe have overwhelmed the need for such a comprehensive effort. Instead it is apparent that much of the proposed content is now being produced, at least for the near term, by appointed study groups within the various agencies. There is a sense, however, that the current focus, while intense, is rather near term and lacks a long term perspective such as that of the "Next steps in Exploring Deep Space" Cosmic study. While the content of the companion study (Strategy and Concepts for Future Exploration and Commercialization Development of the Solar System—IAA Study 3.6) is at present not clear it will almost certainly be more expansive than near- term plans.

We have a choice between persevering with the large outline or settling for an abbreviated approach that could deal with the pivotal problems of an International approach (such things as the use and value of in-situ propellants, space assembly, use of libration points, management approaches, disruptive technology, and the formation of an International Concept and Design

Organization. Another choice, of course, is to decide that the effort has been truly overtaken by events and abolish the task.

I would appreciate your comments in response to this diatribe including your ability to participate and areas of interest by the end of August. The IAA will be polling for comments about then in preparation for the series of meetings to take place in Fukuoka in October.

Thank you in advance for your thoughts

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15 Sept 2005

Current consensus is that the study is needed but should be redirected to deal with areas complimentary to the funded efforts currently underway in the world space agencies and the two predecessor IAA Cosmic Studies while the results of the ongoing national studies become more defined. It has become apparent that the space agencies are adopting a more near term approach that does not have the long-range vision of the IAA studies this task was meant to amplify. Included in the newly recommended areas of emphasis for this effort are the following (in no specific order of importance):

1. International management approach
2. Formulation of an International Concept and Design Organization
3. Development of International Standards
4. Space assembly approaches and guidelines
5. Use of Libration points (necessary infrastructure)
6. Disruptive technology
7. Role and identification of commercial endeavors
8. Legal and Environmental implications
9. Financial necessities

The current chairman has not been successful in obtaining adequate support at this time. This is partly because of the intensive efforts in the various government agencies and corresponding industry and partly because he has retired from

Boeing and thus lacks the financial and industrial support necessary to properly conduct the work. It will be recommended at the Commission 3 meeting in Fukuoka that a new chair be appointed and the study reformulated along the lines mentioned above.

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