

ABSTRACT

INTERNATIONAL DEEP SPACE COMMUNICATIONS AND SCIENCE NETWORK

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This paper proposes an extension of the NASA Deep Space Network into a 6-station International Network. It discusses the rationale for a 6-station design which has the following characteristics:

1. It avoids at each longitude the loss of communications due to natural hazards such as floods and earthquakes and loss due to political considerations.
2. It provides latitude diversity so that significant mission events can be covered wherever they occur in the solar system.
3. It provides additional southern latitude stations to cover events on missions such as Ulysses in the high southern latitudes.

The proposal is based on extending to ground facilities those international agreements which are now existing for space vehicles. It brings into consideration the use of the Russian deep space complexes as internationally available facilities. It is consistent with the current proposal for an international Mars exploration program in which the space agencies cooperate in both the space and launch vehicles as well as in the ground elements. This international network can support mission operations centers throughout the world.

*For oral presentation at Session F (1st choice)  
or Session N (2nd choice)*