

Mars Relay Description for 2007 Proposals – Revision A

This Appendix and the Mars Network User Guide (see below) provide information on relay services likely to be provided by Mars orbiters to 2007 Mars Scout missions. Wherever this Appendix or the Mars Network User Guide conflicts with the AO, the AO takes precedence.

Please note that the information contained in this Appendix and in the Mars Network User Guide is the best available at this time. While NASA and the Mars Program make no guarantees that these services will be available to a 2007 Scout mission, a Mars Program goal is emplacement of infrastructure at Mars that aids future missions such as Scouts. Therefore, proposers should feel free to consider mission concepts that leverage this infrastructure. However, proposers should describe their backup plans should the primary asset(s) they choose to rely on not be available. The backup asset could be another Mars infrastructure element or an element of the proposed Scout mission itself.

Proposal Guidelines

Relay Link Design

Relay link designers should carefully and clearly enumerate all link parameters associated with their side of the communications link and include sufficient margin to ensure reliable link performance. Proposals should include link budgets and explain the margin strategy used.

Critical Event Coverage (see Scout AO 3.6 Critical Event Coverage)

Critical event coverage can be provided by Mars infrastructure relay orbiter(s) provided the coverage meets the guidelines referenced in this Appendix. Scout proposers can also use DSN assets (including the 70m network) for providing critical event coverage. Proposers are also free to propose a combination of relay orbiter(s) and DSN coverage.

Orbiter Availability

Relay users should be able to support their primary mission using either the Mars Reconnaissance Orbiter relay or the Mars Odyssey relay. Mars Express and Mars Global Surveyor are likely to also be available, but should be used for mission enhancement rather than to meet primary mission objectives.

The previously planned PREMIER and G. Marconi orbiters are no longer likely to be available for 2007 Mars Scout missions.

Relay Cost

There is no direct cost to Scout missions for using Mars infrastructure relay orbiter(s). However, Scout missions must pay for relay orbiter DSN tracking as needed to relay Scout communications. Tracking costs are given in “NASA Mission Operations and Communications Services” in the Mars Scout library.

Relay Tests

Each relay orbiter will have a ground-based system for conducting compatibility tests with user relay radios. Each Scout mission using relay services must include relay compatibility testing in its schedule and pay for its part of the tests.

Mars Relay Description for 2007 Proposals – Revision A

Mars Network User Guide

The Mars Network User Guide at <http://mn.jpl.nasa.gov> provides information on Mars Network standards, communication and navigation services, the relay capabilities of each orbiter in the Mars Network, and compatibility testing.

The Mars Network User Guide is password-protected. For access, contact the Mars Network User Guide Custodian:

Gary Noreen
Jet Propulsion Laboratory
4800 Oak Grove Drive, M/S 301-170S
Pasadena, California 91109-8099
Phone: (818) 354-6048
Facsimile: (818) 393-9815
E-mail: gary.k.noreen@jpl.nasa.gov