Deep Impact Network Experiment (DINET)

Scott Burleigh
Jet Propulsion Laboratory,
California Institute of Technology
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DINET Summary

- DINET is a technology development experiment intended to increase the technical readiness of JPL’s implementation of DTN protocols – “ION”.
- The objective is to advance ION in flight and ground SW to TRL 8, with code of sufficient quality that future flight projects can easily use it at low risk.
- DINET is to be implemented on the Deep Impact flyby spacecraft. DINET operations will be performed in late 2008 during the Deep Impact spacecraft team “stand down” after EPOCH operations and before the start of development for DIXI operations.
Deep Impact Flyby Spacecraft
Deep Impact Trajectory

- **Launch Jan. 2005**
- **Impact July 2005**
- **Earth at Encounter**
- **Tempel 1 Orbit (5.5 year Period)**
- **Spacecraft Transfer Orbit (from Earth to Tempel 1)**
- **Earth Orbit**
DINET Operations Overview

Deep Impact

DSOT

DINET EOC (in PTL)

- Experiment database
- Load/Go

EVRs

1. Load/Go
2. Load/Go
3. Load/Go
4. Load/Go
5. Load/Go
6. Load/Go
7. Load/Go
8. Load/Go

“Earth”

“Mars”

“Phobos”

- Bundles
- Space links
- TCP
- LTP/UDP
- Log msgs

Image files
DINET Network Topology

Nodes:
- 20: "Phobos"
- 10: "Mars"
- 5
- 3
- 6
- 12
- 2: Deep Impact
- 4: "Earth"
- 8
- 16

Connections:
- 20 to 10
- 10 to 5
- 5 to 3
- 3 to 6
- 6 to 12
- 2 to 4
- 4 to 8
- 8 to 16
- 20 to 2
- 2 to "Earth"