

# Beacon Monitor Operations Experiment

Technology for Low Cost Operations

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### What is It?

The beacon monitor operations technology provides the spacecraft the functionality required to initiate telemetry tracking only when ground intervention is necessary.

### Why Is It Exciting Technology?

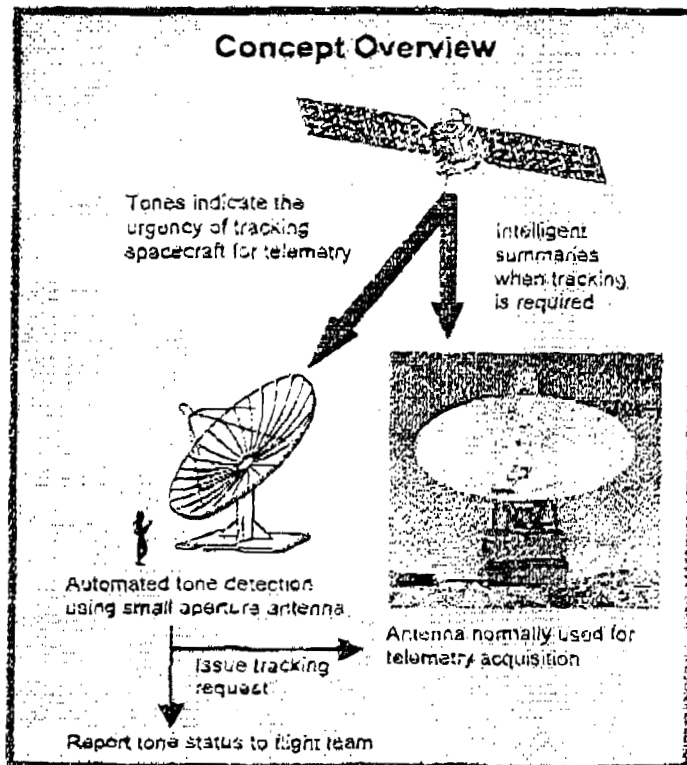
- Mission operations cost is reduced substantially because there is less contact with the spacecraft
- Reduced loading on ground antennas enables more spacecraft to be operated with existing ground resources
- Beacon uses state-of-the-art techniques for summarizing onboard spacecraft performance data

### How Does it Work?

- Instead of routinely sending spacecraft health data, the spacecraft evaluates its own state and transmits one of four beacon tones that reveal how urgent it is to send high rate health data
- When telemetry tracking is required, the spacecraft creates and transmits "intelligent" summaries of onboard conditions instead of sending bulk telemetry data to the ground

### When Will it be Demonstrated?

- Flight demonstration on the Deep Space One mission was completed in August of 1999
- The technology is being adopted by the DS1 Extended Mission to lower operations cost
- The technology has also been baselined for planned NASA missions to Europa, Pluto and the Sun



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