

A DTN-Based Multiple Access Fast Forward Service for the NASA Space Network

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Abstract— The NASA Space Network provides a demand access return link service capable of providing users a space link “on demand”. An equivalent service in the forward link direction is not possible due to Tracking and Data Relay Spacecraft (TDRS) constraints. A Disruption Tolerant Networking (DTN)-based Multiple Access Fast Forward (MAFF) service has been proposed to provide a forward link to a user as soon as possible. Previous concept studies have identified a basic architecture and implementation approach. This paper reviews the user scenarios and benefits of a MAFF service and proposes an implementation approach based on the use of DTN protocols.

Keywords-DTN; Fast Forward; scheduling; Space Network; TDRS