

# The Bilateral Ranging Transponder System Augmentation (BRTSA) Project

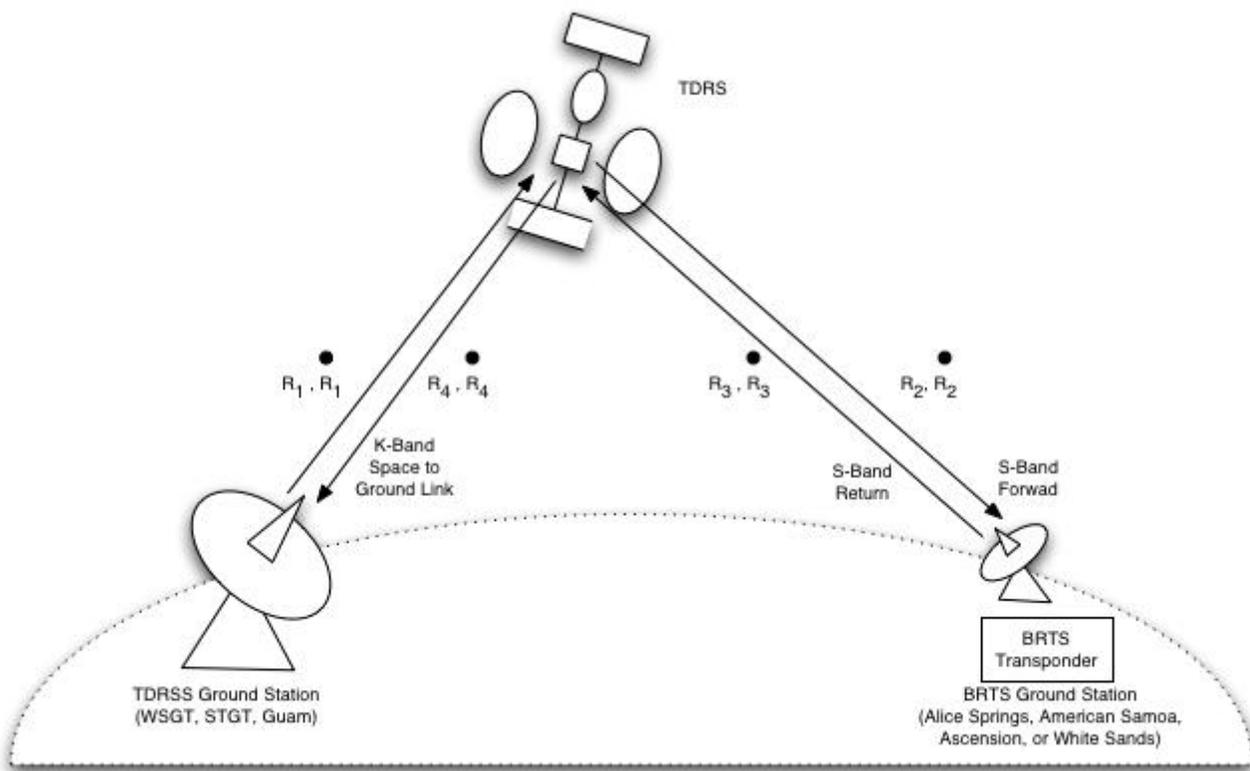
NASA's Space Network (SN) consists of a constellation of nine Tracking and Data Relay Satellites (TDRSs) stationed on orbit around the globe. In order to provide metric tracking data for accurate determination of the ephemerides for the complete TDRS constellation, the Bilateral Ranging Transponder System (BRTS) is used. The BRTS is composed of a transponder, a telemetry subsystem and an antenna. All NASA enterprises (Earth Science, Space Science, and Human Space Flight) and other potential SN customers rely

on the accuracy of the TDRS system to determine the orbits of user spacecraft and therefore must also rely on the BRTS being functional at all times.

The current BRTSs are aging and an augmentation effort is being undertaken. The transponders will be replaced with modern units that meet requirements. This effort will ensure that all BRTSs are ready and able to support all of our customers.

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*Bilateral Tracking of TDRS*