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? TITLE: STRS Radio Service Software for NASAs SCaN Testbed

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? ABSTRACT: NASAs Space Communication and Navigation(SCaN) Testbed was launched to the International Space Station in 2012. The objective is to promote new software defined radio technologies and associated software application reuse, enabled by this first flight of NASAs Space Telecommunications Radio System(STRS) architecture standard. Pre-launch testing with the testbeds software defined radios was performed as part of system integration. Radio services for the JPL SDR were developed during system integration to allow the waveform application to operate properly in the space environment, especially considering thermal effects. These services include receiver gain control, frequency offset, IQ modulator balance, and transmit level control. Development, integration, and environmental testing of the radio services will be described. The added software allows the waveform application to operate properly in the space environment, and can be reused by future experimenters testing different waveform applications. Integrating such services with the platform provided STRS operating environment will attract more users, and these services are candidates for interface standardization via STRS.

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