FDIR Validation Test-bed

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Abstract:

A large portion of the software and hardware developed in ESA R&D activities reach with difficulty the needed maturity level for use in space projects. This is often due to lack of representative environments where validation and technology demonstration can be properly performed. The RASTA (Reference Avionics System Testbed Activity) was initiated by ESA to provide a single development platform to reduce the number of different test and validation environments established in technology developments. The objectives of this activity was to:

- Extend the capability of the existing RASTA facility from a single string to a dual redundant string, supporting different redundancy schemes.
- Develop a test-bed controller software tool that enables users to perform system-level emulation of full FDIR functionality using the RASTA facility.

To accomplish these objectives, a new RASTA hardware module supporting a reconfiguration module has been developed and the existing RASTA I/O and TM/TC modules have been updated. A testbed controller tool has been developed and the new developments have been integrated and tested in the RASTA system present in the ESTEC avionics lab.