

RTEMS Qualification Extensions

The RTEMS Qualification Extensions objectives were to identify the users' needs for communication protocols interfaces and services, to analyse the recent RTEMS versions for management of communications interfaces and monitoring of kernel events. It was implemented in RTEMS by EDISOFT the support drivers for Spacewire and MIL-STD-1553 interfaces for a typical LEON3 processor (GR712RC) and implemented the support for kernel and application monitoring services. Both implementations were provided with the correspondent qualification package for the RTEMS version, including the testsuite covering 100% statement and decision coverage, as requested by the Galileo Software Standards for the Development Assurance Level B. The implementation is provided pre-qualified for the GR712RC board using a single processor implementation of RTEMS.

The RTEMS by EDISOFT was updated to include the test campaign for the new and modified requirements, all tests were executed successfully, 100% of source code statement and decision coverage was achieved and RTEMS Tailored new performance information (RTEMS directives, critical sections, interrupt timing, CPU occupancy and memory usage) was collected and reported in the RTEMS Improvement Software Budget Report.