

An example of use of UNION generic spec for SpaceFibre

by Mr. Alessandro Leoni & Mr. Dirk Thurnes (ESA/ESTEC)

The OSRA Network Communication Specification aims to provide a set of high-level, generic requirements for modern and forthcoming avionic systems in a technology-agnostic way. Most of the currently available network technologies (e.g., SpaceWire, Ethernet, etc...) require complex upper layer protocols to fulfil the OSRA-NET requirements. The goal of this work is to assess the compatibility of SpaceFibre with OSRA-NET, with a special focus on the Quality of Service and the Fault Detection and Isolation and Recovery (FDIR) requirements. Different possible solutions are proposed showing how it is possible to exploit the features of SpaceFibre to build an OSRA compliant network with zero or very little additions to the current version of the standard, even in case of one or multiple failing nodes in the network.