

Scalable generic multiplexing platform



One of the greater challenges for mega-constellation launches is to be able to monitor and charge the spacecraft batteries during the launch preparation activities and up to the last seconds prior to launch.

Atos has developed a scalable generic multiplexing (MUX) platform also called Space Craft Power Multiplexer.

MUX extension SCOE (Special Check-Out Equipment), which together with our flagship Power SCOE in default configuration provides the battery charging and monitoring functionality for up to 36 satellites at a time. The system is based on modules - MUX cards. One MUX card distributes one input power channel from the nominal or redundant Launch Power SCOE to 9 galvanically isolated loads based on relays in demultiplexing configuration.

The MUX extension SCOE provides 4 nominal and 4 redundant input power channels and through multiplexing each input power channel to 9 isolated loads, provides up to 36 satellite batteries to be charged and monitored using a single MUX extension SCOE.

The Nominal or redundant Launch Power SCOE acts as a master controller for the MUX functionality. In case of a failure on the nominal side, the redundant SCOE takes over the control of MUX via remote commands eliminating the need of manual reconfiguration and the SW locking function prevents the failover transparently. Self-test functionality allows quick and automated self-check of HW components and provides the potential to use the MUX ext. SCOE for automating other procedures.

The MUX SCOE is designed to be very robust, generic, light-weight and easily portable to minimise the impact of logistics when transporting from one location to another

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