V00-MARS Validation Testing (overview)

The following “V” documents pertain to MARS Validation testing. The validation tests are to assert the ability of the MARS communications systems to meet all of the subsystem requirements and to insure that the devices are operating within the engineering specifications demanded to insure continued operation of the node during it’s lifetime.

The validation tests are intended to be performed as follows:

A) Upon system integration with the Low Voltage Power Supply team
B) Upon system integration with the Mid Voltage Power Supply team
C) After assembly and delivery of the completed DCS node and enclosure

Each of the validation tests has elements which should suffice to demonstrate the compliance with the MARS system requirements. The correlation between these tests and the compliance is given in the table on the following page. The MARS validation tests are approximately divided into

>Data Communications Subsystem (DCS)
>Timing Subsystem (TS)
>Out of Band Control Subsystem (OBC)

The test designators are as follows:

V00_Verification	(This document) Summary of MARS Requirements met by these tests and the final results
V01_DCSoptical	Insure that the DCS optics are running within Optical spec and record their operational parameters
V02_DCSopen_node	BER tests on DCS optoelectronics prior to sealing the node
V03_DCSclosed_node	Data tests on DCS system after sealing the node
V04_OBCoptical	Optical power and sensitivity test of OBC transceivers
V05_OBCopen_node	BER tests on OBC optoelectronics prior to sealing the node
V06_OBCopen_time	Test of OBC control functionality before the node is closed
V07_OBCclosed_time	Test of OBC control functionality after sealing the node
V08_RemoteDCS	DCS tests which can only be performed from the node shore station
V09_RemoteOBC	OBC tests which can only be performed from the node shore station