Verification Procedure & Results

Document No.: 3167-20104 rev A

Test Case ID:	Test Case Name:	Test Plan Document No.:	Test Plan Rev.:	Test Date:
004, Ver-CG-71	VE-CG-3100 Acoustic Modem Test	3167-20000	2-00	

Test Director (Print Name) Ed Dever	Signature in lieu of electronic signature	**Design Engineer**	Approval Signature John S. Dingess in lieu of electronic signature	Date 10-11-2012
Test Conductor (Print Name) David Neiman	Signature	**System Engineer**	Approval Signature Ed Dever (in lieu of electronic signature)	Date 10/15/2012
Witnessed by (Print name)	Signature	**QA/QC Engineer**	Approval Signature	Date

Test Class ☑ **Performance** ☑ **Behavioral** ☐ **Reliability** ☐ **Endurance / Longevity** ☐ **Survivability** ☐ **Safety**

Test Description

The glider will communicate bidirectionally with the SM75 mooring. The mooring will be placed at ~1500m depth at ~30m above the sea floor. This test case may be a review of vendor testing.

Requirements Addressed

L4-CG-GD-RQ-148 (L3-CG-RQ-229), L4-CG-GD-RQ-149, L4-CG-GD-RQ-150, L4-CG-GD-RQ-151, L4-CG-GD-RQ-152, L4-CG-GD-RQ-154

Test Setup	Test Artifacts
Glider flight and acoustic modem test documentation	This document Acoustic modem communication records. Modem deployment location (lat/lon/depth/distance to bottom) and time Glider deployment location (lat/lon/time)

Test Procedure				Test Results		
Step No.	**Instructions**	**Expected Results** (Accept Criteria)	**Requirement ID**	**Test Data**	**Pass/Fail**	**Notes/Waiver No.**
NA	Record lat/lon/water depth/height above bottom (mooring chain link)/ deployment time for SM 75					Lat Lon Water depth Mooring chain length' Deployment time
NA	Record lat/lon/water depth/ deployment time for glider					Lat Lon Water depth Deployment time
4.1	Examine data files transferred acoustically from the SM75 mooring to the glider	Data files received to shore will be identical to those transferred from the mooring.	L4-CG-GD-RQ-148 (L3-CG-RQ-229)			

Test Procedure				Test Results		
Step No.	**Instructions**	**Expected Results** (Accept Criteria)	**Requirement ID**	**Test Data**	**Pass/Fail**	**Notes/Waiver No.**
4.2	Compare specific data blocks to requests from shore station	The glider can specify which data blocks the mooring modem transmits.	L4-CG-GD-RQ-149			
4.3	Compare relative horizontal and vertical position of glider and SM75, verify the glider can send to and receive from the mooring.	The open ocean glider acoustic modem communicates bi-directionally when the glider is between the surface and 1000 meters depth and the compatible unit is at a distance of 3000 meters or less in the horizontal plane and at a depth between surface and 5000 meters.	L4-CG-GD-RQ-150			A possible method is to send the SM75 data from the glider and then request it be sent back from the modem.
4.4	Examine method of establishing and tearing down the acoustic link.	The open ocean glider establishes and tears down the acoustic link to the remote node.	L4-CG-GD-RQ-151			
4.5	Examine transfer time for several different transfers.	The open ocean glider acoustic link is capable of transferring 50 kilobytes from a remote unit in less than one hour including the time spent establishing and tearing down the link.	L4-CG-GD-RQ-152			For this step, generation of a plot of transfer speed versus file size would inform production modem use by giving insight into time overhead for link.
4.6	Demonstrate polling of the SM-75 to request retransmit of data.	Protocols for the open ocean glider acoustic link with other acoustically-linked devices enable polling of remote devices to allow for request to re-transmit data.	L4-CG-GD-RQ-154			