



# Verification Procedure & Results

Test Procedure Document No.:	Test Procedure Rev.:
3166-90105	A

Test Case Name: CSPP End-to-end verification VER-CG-278		Test Plan Document # 3161-90000	Test Plan Rev.:	Test End Date:
Test Conductor (Print Name)	Signature	Design Engineer (Print Name) John Koegler	Approval Signature John Koegler	Date 01/06/2014
Test Director (Print Name)	Signature	System Engineer (Print Name) Jonathan Fram	Approval Signature Jonathan Fram	Date
Witnessed by (Print name)	Signature	QA/QC Engineer (Print Name)	Approval Signature	Date
DOORS Verification Procedure ID Ver-CG-278	DOORS Verification Event ID CG-VE-3091	Test Results Reviewed	QA: Test Dir.	Date

**Test Description**  
 The Coastal Surface Piercing Profiler (CSPP) is an instrument platform to be deployed at selected Endurance Array and Pioneer locations. The CSPP, less the anchoring system, is purchased as a fully-integrated platform. Instruments are attached to instrument frames within the the CSPP with vendor-fabricated brackets. The uncabled implementation is internally powered and communicates either by LOS radio or satellite phone. Nominal deployment method is to use a ship's winch to deploy the anchor and mooring. The cabled embodiment derives power and communications from the Regional Scale Nodes (RSN) 48V/100 BaseT cabled infrastructure through the RSN Medium Power Junction Box (MPJBox) at CESH02. Nominal deployment method is to use an ROV to 'fly' it to the desired location and then use a wet-mateable connector for cable connection. This test case verifies that the end-to-end operational characteristics of the CSPP satisfy the relevant L3 and L4 requirements as captured in the OOI DOORS system.

**Requirements Addressed**  
 L4-CG-PR-RQ-74,L4-CG-PR-RQ-183,L4-CG-PR-RQ-207,L4-CG-PR-RQ-79,L4-CG-PR-RQ-94,L4-CG-PR-RQ-374,L4-CG-PR-RQ-379,L4-CG-PR-RQ- 890,L4-CG-PR-RQ- 275,L4-CG-PR-RQ- 761  
 L3-CG-RQ-163,L3-CG-RQ-1002,L3-CG-RQ-164

**Test Setup**  
 The CSPP will be fully assembled, including all electronics, pressure housings, and cables. An immersion tank and crane capable of accomodating the CSPP are available, if measurement of wet weight is desired. The crane is fitted with a strain gauge to measure load.  
 Verification of relevant L4 requirements will be completed for the L3 roll-up section at the end of this procedure. L3s listed in this section are ones with "L4 roll up" as verification method.

**Test Artifacts**  
 This document (all required measurements will be incorporated in the Observed Results section)  
 3315-00014.doc (TDP analysis performed in response to CDR)

Test Procedure 3166-90105 Rev A				Test Results		
Step#	Instructions	Expected Results	Requirement ID	Observed Results	Pass/Fail	Notes
1	Review build, test, and verification deployment activity logs for evidence of compliance with the requirement.	The uncabled coastal surface piercing Profiler shall be able to complete 4 roundtrip profile cycles in any given day over the entire profiling range.	L4-CG-PR-RQ-74			
2	Review recovery and redeployment data.	Profilers shall be recoverable and reusable following refurbishment and refueling.	L4-CG-PR-RQ-183			
3	Determine data usage for test deployments and project data storage needs for a 7-month deployment.	The data storage subsystem shall have data storage capacity to store all of the profiler engineering and sensor data collected during the deployment interval.	L4-CG-PR-RQ-207			
4	Analyze power usage over test deployments to project power requirements for a 3-month deployment interval between refuelings. Compare power requirement to available battery capacity.	Unless connected to an undersea power cable, the coastal surface piercing Profiler shall operate from internal batteries throughout the deployment interval.	L4-CG-PR-RQ-79			

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Step#	Instructions	Expected Results	Requirement ID	Observed Results	Pass/Fail	Notes
5	Review test deployment sensor record .	The coastal surface piercing Profiler shall sample all sensors at least once in every 25 cm of vertical travel.	L4-CG-PR-RQ-94			DEMO
6	Review receipt of profiler data to OMC	The Coastal Surface Piercing Profiler sub-system shall make data available to the OMS data server.	L4-CG-PR-RQ-374			
7	During the PVT test deployment, the WHOI platform controller was not available. Bi-directional communication between the profiler and the WHOI platcon will be demonstrated	Uncabled Coastal Surface Piercing Profilers shall communicate bi-directionally with WHOI Platform Controllers.	L4-CG-PR-RQ-379			DEMO
8	Data decimation for the profiler is still in development as of the PVT deployment.	CGSN platforms without a CI presence and without sufficient bandwidth for real-time transfer of raw data, shall compress or decimate data.	L4-CG-PR-RQ- 890			
9	Review transferred data. Does it act as a subset?	Uncabled Coastal Surface-Piercing Profilers shall be capable of transmitting a subset of the data collected to shore while it is at the surface.	L4-CG-PR-RQ- 275			
10	Review alterations of CSPP sampling and operational protocols. Review changes made from the OMC	CGSN platforms shall be capable of having their sampling or operational protocols changed remotely via CGSN assets.	L4-CG-PR-RQ- 761			
	L3 CSPP End-to-end requirements					
			L3	L4 descendant requirements		
1	Check verification status of descendent requirements		L3-CG-RQ-163	96, 134, 208, 209, 237		
2			L3-CG-RQ-1002	None(?)		
3	Check verification status of descendent requirements		L3-CG-RQ-164	210, 211		