

Engineering Change Request Form

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|---|---|---|
| Change Request No.: 1303-01092 | Date: 6/24/2013 | WBS: 1.3.2.4.1 |
| Control Account Name: 1.3.2.4 - Project Year 4 (PY4) System Engineering | Configuration Manager: Wickman, Diana | Control Account Manager: White, Sheri |
| SECTION TO BE COMPLETED BY PERSON REQUESTING CHANGE: | | |
| Requestor: Sheri White | Telephone Number: (508) 289-3740 | |
| Request Name (Include document number and revision level): L4 CG Profiler requirements updates and MMP waiver | | |
| Description of Change (Include all related systems): The attached spreadsheet shows the details of the updates to L4 CG Profiler module. Updates include: 1) Changing many Verification Methods to Analysis (for consistency with other procured items, e.g., instruments); changing one VM to Inspection. 2) Deprecating WFP requirements related to 10, 30 and 100 year return period storms. 3) Waiving the following L4 CG PR RQs for the McLane Moored Profiler L4-CG-PR-RQ-204 The profiler shall have the capability to turn off sensors or instruments when directed by commands from the shore station. L4-CG-PR-RQ-216 The mission planning program shall monitor the power usage of a deployed profiler and provide estimates of the capacity remaining. L4-CG-PR-RQ-217 The mission planning program shall monitor the data storage usage of a deployed profiler and provide estimates of the capacity remaining. L4-CG-PR-RQ-238 The coastal wire following Profiler shall contain a real time clock which can be synchronized to UTC with an accuracy of +/- 1 seconds via the inductive link to a GPS receiver located on the same mooring. L4-CG-PR-RQ-296 The Global wire following Profiler shall contain a real time clock which can be synchronized to UTC with an accuracy of +/- 1 second via the inductive link to a GPS receiver located on the same mooring. (added to address comments) L4-CG-PR-RQ-215 The mission planning tool shall provide estimates of the telemetry bandwidth requirements as a function of sensor payload, sampling interval, and data decimation options. L4-CG-PR-RQ-213 The mission planning tool shall provide estimates of energy usage as a function of profiling speed, vertical profiling speed, current speed, and in situ water density. (Partial waiver for environmental conditions) NOTE: The L3 parents and L2 grandparents of these requirements do not need to be waived. | | |
| Reason for Change: 1) As with other procured items, most of the formal verification will be via analysis of vendor documents and vendor testing results. 2) The requirements regarding 10, 30 and 100 period storms were flowed down directly (verbatim) from L3 requirements. These requirements are platform-level requirements. Surface moorings are analyzed with modeling programs to determine forces throughout the mooring based on surface wind and wave conditions. The WFPs crawl up and down mooring lines at depths below 30m for Coastal and 200m for Global (below most wind and wave action). These L3 RQs properly flow down to the L4 CG Mooring module to ensure the mooring riser components can withstand the loads. There is not an appropriate flow down or derived L4 RQ for the profilers. 3) The MMP does not meet these RQs, but was selected as the OOI Coastal and Global WFPs via the source selection process. The MMP is the exemplar WFP. L4-CG-PR-RQ-204 -- The MMP cannot turn off specific sensors during the the deployment. L4-CG-PR-RQ-216 and L4-CG-PR-RQ-217 -- The mission planning tool is not tied into to the incoming data from the profiler, and thus cannot monitor power usage or data storage. It can be used to estimate capacity based on initial conditions and a mission plan. L4-CG-PR-RQ-238 and L4-CG-PR-RQ-296 -- The profiler has a real time clock, but it cannot be synched over the inductive link. L4-CG-PR-RQ-215 -- The mission planning tools do not provide estimates of telemetry bandwidth. L4-CG-PR-RQ-213 -- The energy usage estimates do not include environmental parameters such as current speed and water density. | | |
| Benefit to OOI: Clear, consistent, verifiable requirement with verification methods consistent with schedule and budget plans. | | |

Requestor Assessment of Impact to Control Account:

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Scope:

No impact. The deprecated requirements should not have flowed down to WFPs; their removal does not affect the capabilities of the WFP. The waived requirements do not have a significance impact on the ability of the profiler to collect the required science data.

Schedule:

No impact. The use of analysis of vendor documentation is consistent with verification of other procured, COTS items, and allows us to proceed on schedule.

Cost:

No impact. The use of analysis of vendor documentation is consistent with verification of other procured, COTS items, and saves cost by avoiding repeating profiler demonstrations that have already been done by the vendor.

SECTION TO BE COMPLETED BY IO/SL CCB CHAIRPERSON:

Assessment of Impact to IO Project:

Master Schedule:

Concur with requestor's assessment.

Project Cost:

Concur with requestor's assessment.

Deliverables:

Concur with requestor's assessment.

Potential Impact to Science and Design / As-built Capability: Concur with requestor's assessment.

Percent Impact on WBS elements(s) selected: 0%

Percent Impact on OOI: 0%

Contingency \$0

Contingency Schedule (weeks): 0

Signature of CG CCB Chairperson:

Sheri White (swhite@whoi.edu)

Date:

6/28/2013 2:00:00 PM

Board Determination:

Approved

CERTIFICATION OF TECHNICAL DATA PACKAGE AND CONTROL SYSTEM UPDATE

Signature of Configuration Manager:

Diana Wickman (dwickman@whoi.edu)

Date:

7/8/2013 8:25:08 AM

Systems and

Documentation Updated:

Confirmed Complete

Attach supporting technical documentation and or additional comments as needed.

Change Request No.: 1303-01092**Request Name:** L4 CG Profiler requirements updates and MMP waiver**ECR Comments**

| # | Reviewer | Date Added | General Comment | Requestor Response | CCB Decision | Lien |
|---|-----------------|------------|--|--------------------|--------------|------|
| 1 | Al Plueddemann | 6/26/2013 | Recommend approval. | | | |
| 2 | John Lund | 6/27/2013 | no comment | | | |
| 3 | Steve Holford | 6/27/2013 | No comments. | | | |
| 4 | Sheri White | 6/28/2013 | L4-CG-PR-RQ-215 should also be waived. The MissionPlanner/DeploymentPlanner tools do not provide estimates of telemetry bandwidth. | Accept | | |
| 5 | Sheri White | 6/28/2013 | L4-CG-PR-RQ-213 should be partially waived. The MissionPlanner/DeploymentPlanner tools provide estimates of energy usage, but they do not take into account external environmental conditions. | Accept | | |
| 6 | KENNETH T ANGEL | 6/28/2013 | L4-CG-PR-RQ-213: Not sure you can "partially" waive a requirement. Recommend revising the requirement to delete "...as a function of profiling speed, vertical profiling speed, current speed, and in situ water density." which is more of the implementation method. | Reject | | |
| 7 | Ed Dever | 6/28/2013 | concur with comment 6, no additional comments | | | |

Change Request No.: 1303-01092**Request Name:** L4 CG Profiler requirements updates and MMP waiver**ECR Vote (Highest Level Board: CG)**

| Title | Member Name | Delegate Name | Vote | Comment |
|------------------------------------|--------------------|----------------------|----------------|----------------|
| SIO Engineer | KENNETH T ANGEL | | Approve | |
| Field Operations Coordinator | Liz Caporelli | | (Did Not Vote) | |
| CGSN Manufacturing | James Danielson | | Approve | |
| Systems Engineer (PNW) | Ed Dever | | Approve | |
| Lead Electrical/SW Engineer | Steve Holford | | Approve | |
| Program Manager and Chief Engineer | Paul Matthias | | Approve | |
| Integrated Product Team Lead | Steve Parks | | Approve | |
| Integrated Product Team Lead | Rick Sisson | | (Did Not Vote) | |
| Program Director/PI | Bob Weller | | (Did Not Vote) | |
| Lead System Engineer | Sheri White | | Approve | |
| CGSN Configuration Manager | Diana Wickman | | Approve | |

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ECR Liens/Action Items

| Lien | Due Date | Complete | Completion Date |
|------|----------|----------|-----------------|
|------|----------|----------|-----------------|

| Action Item | Due Date | Complete | Cancel | Completion Date |
|--|-----------|----------|--------|-----------------|
| Make changes in DOORS (S. White) | 7/8/2013 | Yes | No | 6/28/2013 |
| Baseline and post new module to Alfresco (K. Carr) | 7/16/2013 | Yes | No | 7/8/2013 |
| Mark the Verification Status for the L3/L4 requirements as "Waived" in DOORS and add a description in the verification details column. (S. White, K. Carr, E. Dever) | 7/16/2013 | Yes | No | 6/28/2013 |
| Update "Approved Waiver-CM" attribute for affected L3/L4 requirement(s) in DOORS with the ECR number of the approved Waiver. (S. White, K. Carr, E. Dever) | 7/16/2013 | Yes | No | 6/28/2013 |

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ECR Meeting Results and Notes

| Board Level | Meeting Date | Meeting Name | Meeting Result | Meeting Notes |
|-------------|--------------|------------------------------|----------------|---------------|
| CG | 6/26/2013 | CG CCB 20130626 | Deferred | |
| CG | 6/28/2013 | CG CCB 20130628 (Special) | Approved | |