

Part I - The Schedule (Continued)
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C.1 GENERAL

- a. The Section J attachment entitled “OPC System Specification” contains both Objective and Threshold requirements. Threshold requirements are mandatory requirements. Objective requirements are not mandatory and do not reflect the minimum needs of the Coast Guard. The contractor is encouraged but not required to comply with Objective requirements.
- b. Through-out the contract, various terms such as “Government”, “Coast Guard”, “USCG”, “NTA”, etc. are used. The Contractor shall interpret the use of this term to mean the Coast Guard Contracting Officer.
- c. Tiered references may reference other technical standards without providing an effective date. The contractor shall use the revision identified in the Section J attachment entitled “External Reference List.” If no version is specified in the External Reference List, then the contractor shall use the revision in effect upon the date of submission of their Phase I price proposal.
- d. Brand name or equal (BNOE) requirements may be called out in the specification. If there are salient characteristics provided, then the Equipment Equivalence certification requirements of OPC System Specification 042 apply to the extent that salient characteristics are provided. If no salient characteristics are provided, then equivalency is determined by the contractor.
- e. Brand name mandatory: there are two requirements for brand name applications – the MAFO watertight doors and classing the ship by ABS. Any other use of a brand name may be treated as a suggestion.
- f. The Integrated Data Environment (IDE) is: (to be completed by the Coast Guard prior to Contract Award).

C.2 TWO PHASE PROCUREMENT

- a. This is a two phase procurement. This contract covers both Phases. Phase I provides for the development of the Preliminary and Contract Design. Following the Contract Design Review, the Contractor will submit proposals in accordance with the Phase II Sections L and M; the Coast Guard will evaluate and select one Phase II contractor. Upon option exercise, the Phase II contractor will continue with Detail Design and ship construction. All contract sections apply to both Phases with the notable exception of Sections L and M. Sections L& M for Phase I are not incorporated into the resulting contract. Phase II Sections L and M are incorporated into the contract but are deleted with the exercise of the Detail Design option.
- b. Although all contract requirements are not part of the base contract work defined in Section B.1, the Coast Guard intends to exercise all CLINs (as allowed by the Option Structure) to complete all requirements.

C.3 AFFORDABILITY

- a. The affordability requirement for this procurement is as follows: the average unit price of Hulls #4 through #9 shall be \$276,000,000.00, or less, in Fiscal Year 16 dollars. This requirement is computed by the following formula: for hulls #4 through #9, the target price for ship construction plus the corresponding long lead time material price, divided by six.

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$$\text{Affordability Formula} = \frac{\{[\text{Target price of CLINs 2001} + 2101 + 2201] + [\text{Price of CLINs 1907} + 2009 + 2108]\}}{6}$$

C.4 AMERICAN BUREAU OF SHIPPING COMMUNICATIONS

- a. The Contractor shall authorize direct communication between the Coast Guard and ABS for compliance progress, technical issues, and reporting issues.
- b. The Contractor (including subcontracted effort) shall maintain copies of all OPC related correspondence with ABS on the IDE.
- c. The Contractor shall authorize and require ABS to provide the USCG access to the ABS O2E (database of Stamped Drawings and Approval Letters with comments) and O2K (Survey) databases throughout the period of performance. The USCG shall be authorized to download data from the databases.

C.5 PRELIMINARY AND CONTRACT DESIGN (CLIN 0001)

- a. The Contractor shall develop the Preliminary and Contract Design in accordance with the General Statement of Work and the Section J attachment entitled “Statement of Work for Preliminary and Contract Design”. The Preliminary Design shall be based upon the concept design submitted with the Phase I technical proposal and meet the requirements of the OPC System Specification.
- b. The Contractor shall prepare and deliver Preliminary and Contract Design Data in accordance with Section J attachments entitled “Preliminary and Contract Design Data Requirements List (CDRL)”.
- c. All data shall be delivered via the IDE.
- d. In order to promote effective management of the three Phase I contracts, each contract will have an “Effective Date of Contract Award”. The Effective Date of Contract Award will stagger (by 14 or 28 calendar days) the contract award date for two of the three contractors. Consequently, one contractor will have an Effective Date of Contract award equal to the contract award date, one contractor will have an EDCA equal to contract award date plus 14 calendar days and the third contractor will have an EDCA equal to contract award date plus 28 calendar days. All dates and delivery periods during Preliminary and Contract Design (Phase I) will be derived from the EDCA. The EDCA will be randomly assigned at contract award.
- e. The EDCA is: (to be filled in by the Contracting Officer prior to contract award).

C.6 DETAIL DESIGN (CLIN 1601)

- a. If exercised, the Contractor shall develop the Detail Design in accordance with the General Statement of Work and the Detail Design SOW contained in the Section J attachment entitled “Statement of Work for Detail Design.” The Detail Design shall be based upon the Contract Design developed during Phase I and as proposed in the Phase II technical proposal.
- b. The Contractor shall prepare and deliver Detail Design Data in accordance with Section J attachment entitled “Detail Design Contract Data Requirements List (CDRL).”
- c. All data shall be delivered via the IDE.

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C.7 LONG LEAD TIME MATERIAL (LLTM)

a. If exercised, the Contractor shall procure Long Lead Time Material (LLTM) identified in the Section J attachment entitled “OPC Long Lead Time Material.” It is understood that LLTM is Contractor Furnished Equipment. Acceptance occurs at ship delivery and warranty for all LLTM begins at ship delivery. All responsibility for performance, timeliness and quality remains with the contractor.

C.8 INSURANCE SPARES

a. Insurance spares are composed of Long Lead Time Material items included in the listing. If exercised, the Coast Guard may order insurance spares at the unit prices established in the Section J attachment entitled “OPC Long Lead Time Material.” Insurance spares may only be exercised concurrent with the exercise of the LLTM CLINs. Insurance spares shall be delivered as required by Section F.

C.9 LEAD SHIP CONSTRUCTION

- a. Exercise of this option is predicated upon successful completion of the Production Readiness Review.
- b. If exercised, the Contractor shall construct the lead ship in accordance with the Section J attachment entitled “Statement of Work for Construction” and the detail design developed by the Contractor.
- c. The lead ship shall be built, tested and delivered to meet the requirements of the Section J attachment entitled “OPC System Specification.” Each requirement of the OPC System Specification in this contract that is not included in the detail design shall nonetheless be satisfied by the Contractor unless specifically stated in the contract to be the responsibility of the Government.
- d. The Contractor shall deliver the ship(s) in class by the American Bureau of Shipping (ABS).
- e. The Contractor shall be responsible for procurement, installation, and integration of all Contractor Furnished Equipment (CFE) including software, installation and integration of all GFE on the ship, the procurement and outfit of onboard spares, repair parts, equipment, tools and support equipment/documentation for all CFE.
- f. The lists of Government Furnished Equipment, Services and Information, including software, which the USCG will furnish, are included in contract schedules as Section J attachments.
- g. The Contractor shall be responsible for ensuring that the ship delivered to the Government complies with all applicable laws of the United States and with the regulations/standards of applicable governing regulatory bodies.
- h. The Contractor shall prepare and integrate all plans and schedules required for construction of the ship. The Government’s GFE/GFI delivery obligations shall be as indicated in Section J attachments entitled ” List of Government Furnished Equipment (GFE)” and “List of Government Furnished Information (GFI).”
- i. The Contractor shall be responsible for overall project management, subcontractor

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management, technical direction, coordination and administrative work to ensure that all contractual requirements are properly accomplished.

- j. The Contractor shall conduct required verification, testing and trials (including but not limited to Builders Trials and Acceptance Trials).
- k. The Contractor shall prepare and deliver Government Property Reports in accordance with Section I clause HSAR 3052.245-70.
- l. The Contractor shall deliver the ship(s) complete in all respects, including documentation and certifications, with deficiencies corrected.
- m. The Contractor shall design, develop, construct, outfit, test and deliver the OPC.
- n. The Contractor shall prepare all facilities, equipment, material, services, and management required to design, develop, construct, outfit, test, and deliver the OPC.
- o. The Contractor shall prepare and deliver data in accordance with Section J attachment entitled "Construction Data Requirements List (CDRL)."
- p. All data shall be delivered via the IDE.
- q. **Technical Data Package.** Whenever the Coast Guard shall so require, the Contractor shall, at the cost of reproduction and/or transmission, furnish to whomsoever may be designated by the Coast Guard (including other shipbuilding Contractors), data necessary for another shipbuilder to build or maintain OPC Class ships. To facilitate any such data transfer, the Contractor shall develop and operate an Integrated Product Data Environment in accordance with National Shipbuilding Research Program Integrated Product Data Environment Specification Version 1.0 dated 30 June 2008.
 - 1) The data subject to transfer shall include, but not be limited to:
 - a) Phase II Contract Deliverables including supporting information
 - b) Product information database(s) which describe(s) the product completely and unambiguously
 - c) Fully populated 3D Product Model including any company customized software to commercial 3D design software suites
 - d) Software / middleware including source /executable code and supporting software documentation
 - e) Vendor procurement technical specifications w/all vendor pricing and VFI deliverables received
 - f) Engineering plans and Bill of Materials required for any jigs or fixtures used in production
 - g) Production engineering products including supporting calculations / information
 - h) Master Bill of Materials and Bill of Materials associated with each production engineering package

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- 2) The furnishing of such data shall not constitute any guaranty or warranty, either express or implied, by the Contractor other than they are correct copies of such data.
 - 3) The Contractor shall also provide licenses to re-procure, modify, disclose to others and reproduce all products produced within the scope of the contract for up to 25 OPCs and access to Contractor facilities by whomsoever shall be designated by the Coast Guard to verify facility elements.
- r. **Display Models.** The Contractor shall construct a scale model of the ship suitable for display.
- 1) The model shall be built to a scale of 1:25. The hull, pilothouse and components of the model shall conform accurately to the scaled dimensions of the ship. The model shall be constructed and finished using durable materials that are resistant to humid conditions. The model shall be of sufficient detail to accurately reflect the ship including, but not limited to, the following:
 - a) Realistic colors and finishes.
 - b) A hull which is outfitted to accurately reflect the ship including any prominent components that may be provided on the ship such as deck gratings.
 - c) Exterior equipment and furnishings including: masts; hatches; windows and portlights; vents; mooring fittings; tow bitt(s); towline reel; handrails; non-skid; antennas; accommodation ladders; lights; outfit including P-6 pump container, P-100 pump container, life rings, distress marker lights, and boat hooks; window wipers; weapons; and anchor.
 - d) Transparent pilothouse windows, allowing visibility to a fully outfitted pilothouse. The interior of the pilothouse shall reflect the configuration of the ship to include: seats; consoles; ladders; hatches; navigation displays and radios; and primary propulsion controls.
 - e) The Cutter Boats shall be shown stowed, covers shall not be fitted.
 - f) The model shall include USCG markings, including the stripe, "U.S. Coast Guard", hull number, and name. The Contracting Officer will specify the hull number and name when the model is ordered.
 - g) The model shall set on a scale cradle and be mounted to an oak base with a "honey" finish. The base shall be provided with port and starboard brass plaques that identify the model and the "US Coast Guard Offshore Patrol Cutter (OPC)" and give the basic dimensions of the ship and the manufacturer's name.
 - 2) The model shall be enclosed in a safety plate glass case on a display table in accordance with CG Drawing FL 3209-8.

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- 3) The model shall be provided with a display table that is 30 inches (0.76m) high with a width and depth appropriate to contain the model. The table legs shall be untapered and square in cross section. The table shall be of oak with a natural finish.
- 4) The model, case, and table shall be provided with a crate suitable for shipping. Delivery location is specified in Section F.

s. **Land Based Test Facility (LBTF):** The Contractor shall develop a land based test facility in accordance with the Section J attachment entitled “OPC System Specification.” The LBTF shall be used by the contractor for the development of the MPCMS system on the lead ship. After the lead ship has been accepted by the Coast Guard the components of the LBTF will be packaged, shipped and delivered to the Coast Guard in accordance with Section F. The specific transfer date will be coordinated between the Contractor and the Contracting Officer.

C.10 FOLLOW SHIP CONSTRUCTION

- a. If exercised, follow ships order before approval of the product baseline shall be constructed in accordance with the detail design and the Construction SOW.
- b. Ships ordered after the Coast Guard has approved the product baseline shall be constructed in accordance with the Construction SOW and the product baseline.
- c. Each ship shall be built, tested and delivered to meet the requirements of the Section J attachment entitled “OPC System Specification.”
- d. The Contractor shall prepare and deliver Data in accordance with Section J attachment entitled “Construction Data Requirements List (CDRL).” All data shall be delivered via the IDE.

C.11 WARRANTY

- a. The Contractor shall provide a Warranty Program in accordance with the period of performance established in Section F and the Section I clauses entitled "Warranty of Supplies of a Complex Nature" and the Section H clause entitled “Warranty of Data”.
- b. The Contractor shall establish and maintain a warranty item correction program to ensure that all Contractor responsible warranty defects are corrected in an expeditious manner. The Government may, pursuant to the warranty, during the warranty period, make the ship available to the Contractor, at the Contractor's plant, or require the Contractor to come to the ship for correction of defects noted at the time of acceptance, or which are discovered during the warranty period. If the Government elects to make the ship available to the Contractor at the Contractor's plant for the accomplishment of the above described work following acceptance, the Contractor agrees to accept the ship and perform the work.
- c. The Contractor agrees that any commercial warranties for supplies, commercial components of supplies, or services granted by the original equipment manufacturer (OEM) shall be transferred to the USCG. The Contractor agrees that the supplies, commercial components of supplies and services furnished under this contract shall be covered by the most favorable warranties the OEM gives to any customer for such supplies and services and that the rights and

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remedies provided herein are in addition to and do not limit any rights and remedies provided to the Government under this contract.

d. The warranty period for the lead and each follow ship, established in the Section F clause entitled “Period of Performance / Delivery Schedule” shall be extended by the time during which such cutter is not available for unrestricted service, as determined by the Operational Commander, by reason of any defects for which the Contracting Officer shall determine the Contractor to be responsible.

e. The Contractor shall establish and maintain a warranty item correction program to ensure that all Contractor responsible warranty defects are corrected in an expedient manner. Warranty Engineer(s) shall be provided as necessary to:

- 1) Act as the principal point of contact between the Contractor and the cutter during the warranty period.
- 2) Authorize and coordinate cutter visits by vendor representatives and accomplishment of industrial work locally to correct warranty defects.
- 3) Conduct cutter visits as required to gain familiarity with scope and nature of the warranty defects and ensure satisfactory completion of such items.
- 4) Conduct liaison with the OPC Warranty Officer to ensure that corrective actions are satisfactory and signed-off by the OPC Warranty Officer.

f. Whenever practicable, the Government will, in addition to giving the Contractor notice of any defect or nonconformance, afford the Contractor an opportunity to examine the defective supplies before they are replaced or corrected.

g. The rights and remedies of the Government provided in this clause are in addition to and do not limit any rights otherwise afforded to the Government under this contract.

C.12 INTERIM CONTRACTOR SUPPLY SUPPORT

a. If exercised, the Contractor shall provide Interim Contractor Supply Support (ICSS) for a period of two (2) years following delivery of the lead ship in accordance with the requirements and provisions listed in this section and the ICSP. ICSS provides for the replenishment for a period of two years for OPC Operating Material and Spares (OM&S) (Supply Support) and special tools.

b. The Contractor shall use best commercial practices to determine interim supply support allowances to allow the OPC to meet the availability requirements in OPC System Specification section 076-3.2. The Contractor shall also collect and provide usage and demand data in spreadsheet format at the conclusion of the interim support period as part of the monthly OM&S report to be submitted that month (required by OPC System Specification section 083). The Contractor shall order, receive, inspect, store, package and repackage if required.

c. The lead ship will requisition maintenance and repair material via the Project Resident Office (PRO). The PRO will inform the Contractor of the requisition, and the Contractor shall provide the material and parts in accordance with COMDTINST M4400.19B. The Contractor shall process ICSS requisitions in a manner that items are delivered to the cutter within a

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maximum of 72 hours after Contracting Officer notification.

C.13 TRAINING AIDS

a. If exercised, the Contractor shall provide identical ship sets, of the following systems and equipment:

- 1) C4ISR System (as defined by section 400)
- 2) Meteorological Equipment (section 494)
- 3) Generator Set
- 4) Switchboard and EPCS
- 5) Propulsion Components for a shaft set (up to the reduction gear) and Local Control Panels
- 6) Propulsion Control System
- 7) MPCMS and consoles

b. The Contractor shall provide the ship's sets software, wiring, and cabling to install the system/equipment at the point(s) of delivery.

c. The Contractor shall provide the special tools required to operate and conduct OEM recommended maintenance on each ship's set with the training aids.

d. The Contractor shall deliver the training aids as required by Section F.

C.14 GENERAL STATEMENT OF WORK

a. General Requirements

040 Project Management

040.1 Project manager. The Contractor shall assign a single project manager who is specifically charged with the responsibility to establish, implement and maintain a management system and organization that shall plan, organize, control, and oversee all contract activities relating to this contract. The Contractor shall designate an Hull, Mechanical and Electrical (HM&E) technical lead and a C4ISR technical lead. During Phase II the project manager shall function as the primary interface with the USCG's Project Resident Office (PRO).

040.2 Industrial Security and Operations Security program. The Contractor shall implement an Industrial Security and Operations Security program, procedures, and controls as required for the management of this contract in accordance with National Industrial Security Program Operating Manual (NISPOM), DoDI 5220.22.

040.3 Management Meetings, Conferences and Reviews. The Contractor shall conduct OPC Project and technical meetings, conferences and reviews.

040.3.1 Phase I Meeting Requirements.

040.3.1.1 Post Award Conference (PAC). The Contractor shall host a Post-Award Conference in the Washington DC Metropolitan Area within 45 days of contract award. The exact dates will be coordinated with the Contracting Officer following contract award.

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- 040.3.1.2 The purpose of the conference is to:
- 040.3.1.2.1 Review the contract, technical documents and required deliverables.
- 040.3.1.2.2 Review the technical requirements and schedule requirements included in the Contractor's proposed Integrated Master Schedule.
- 040.3.1.2.3 Discuss the roles and working relationships between the Contractor and the USCG.
- 040.3.1.2.4 Review the details and execution of other management review requirements.
- 040.3.1.3 Project Management Conferences (PMC). The Contractor shall prepare agendas and presentation materials for four PMCs. PMC #2 will be the Preliminary Design Review (PDR), and PMC #4 will be the Contract Design Review (KDR). PMCs will be scheduled as follows:

PMC	#1	#2 = PDR	#3	#4 = KDR
Weeks after Effective Date of Contract Award	26	38	62	74

- 040.3.1.3.1 Each PMC shall include Technical Splinter sessions to address technical issues on the agenda. The Contractor shall coordinate schedules with the USCG to run sessions using multiple rooms at the same facility in parallel to address every splinter session topic in a timely fashion.
- 040.3.1.3.2 PMC Preparation and Reporting Requirements.
- 040.3.1.3.2.1 The Contractor shall solicit additional agenda topics from the USCG not less than 15 days before the PMCs and shall prepare presentation material to address all agenda topics.
- 040.3.1.3.2.2 The Contractor shall develop and provide a PMC Action Item List to include, for each action item, a comprehensive description, the organization and individual(s) assigned, the meeting title and date assigned, and the assigned completion date. The Contractor shall manage and track progress of actions items until the USCG agrees the action is complete. The Action Item List shall be updated to include the actual completion date and the disposition of the action with any supporting documentation.
- 040.3.1.3.2.3 Following each PMC, the Contractor shall document the PMC meeting minutes and attach the final presentation materials and the Action Item List.
- 040.3.1.4 PAC and PMC Facility Requirements.
- 040.3.1.4.1 The Contractor shall provide facilities to host 40 USCG representatives.
- 040.3.1.4.2 The PMCs are Program Executive Officer (PEO) events.

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- 040.3.1.4.3 The Contractor shall provide remote conferencing capability to access the conference audio, visual and presentation materials.
- 040.3.1.4.4 The Contractor shall provide a web based collaborative environment to support meetings including:
- 040.3.1.4.4.1 Real-time data and drawing sharing.
 - 040.3.1.4.4.2 Real-time document and drawing mark ups.
 - 040.3.1.4.4.3 System shall be compatible for use on Coast Guard WorkStation III network.
- 040.3.1.4.5 The Contractor shall provide room accommodations for splinter sessions to occur in parallel (or overlap) with each other as required by each agenda.
- 040.3.1.5 Technical Meetings. The Contractor shall host technical meetings covering OPC technical progress and issues. Agendas shall be developed to include topics solicited from the USCG for each meeting and the Action Item List shall be updated to address the status of all technical issues. The initial Technical Meeting shall occur 8 weeks after the Post Award Conference. Subsequent Technical Meetings shall be conducted in TBD week intervals except when it coincides with a PMC.
- 040.3.2 Phase II Meeting Requirements.
- 040.3.2.1 Phase II Kick-off Conference. The Contractor shall conduct a Kick-off Conference at the Contractor's facility within 45 days of Detail Design option exercise. The Contracting Officer shall coordinate the exact date of the Kick off conference. The purpose of the conference is to:
- 040.3.2.1.1 Review the contract, technical documents and required deliverables.
 - 040.3.2.1.2 Review the technical requirements and schedule requirements included in the Contractor's proposed Integrated Master Schedule.
 - 040.3.2.1.3 Discuss the roles and working relationships between the Contractor and the USCG.
 - 040.3.2.1.4 Review the details and execution of other management review requirements.
 - 040.3.2.1.5 To introduce the Phase II Management Team including key subcontractors and to review the management details and plans for subcontract execution.
- 040.3.2.2 Quarterly PMCs. The Contractor shall schedule and conduct PMCs during Phase II. The initial PMC shall occur no later than twelve weeks after exercise of the option. The Contractor shall provide Remote Conference capability for off-site participation.
- 040.3.2.2.1 The PMC shall:
- 040.3.2.2.1.1 Be conducted at the Contractor's facility.
 - 040.3.2.2.1.2 Include a programmatic and a technical session.
 - 040.3.2.2.1.3 Address system design, engineering, human systems integration, system safety, risk, vendor and subcontractor management, production, quality

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- assurance, testing, logistics support, discrepancy management and scope of post-delivery support work.
- 040.3.2.2.1.4 Include identification and resolution of technical and management issues affecting schedules, cost, and performance.
- 040.3.2.2.1.5 Address required contract and subcontract efforts including Earned Value Management System (EVMS) using the elements of the Integrated Management Plan (IMP). The EVMS session shall be with a limited audience of USCG and Contractor business review personnel as part of the PMC and shall present a summary status and trends of the EVMS reporting and root cause analyses of variances and of contract performance trends.
- 040.3.2.2.1.6 Address the planned efforts for ship design, ship construction, testing, logistics support, management processes, life cycle support, risk management, Long Lead Time Material (LLTM), subcontractor management, procurement schedules and critical material schedules.
- 040.3.2.2.1.7 Continue to report, after delivery of each ship, the status of incomplete items, warranty issues, Production Schedule and cost data to the Contracting Officer until final settlement of the contract or as mutually agreed upon and confirmed by written correspondence.
- 040.3.2.3 Technical Meetings (TM). The Contractor shall schedule and provide facilities for TMs to discuss technical progress and issues. Once the PRO is established, Technical Meetings shall be conducted not more often than weekly or less often than monthly. The Contractor shall solicit issues from USCG.
- 040.3.2.4 Milestone and Project Reviews.
- 040.3.2.4.1 The Contractor shall conduct the following Milestone and Project Reviews:
- 040.3.2.4.1.1 Preliminary Design Review (PDR) - Phase I event.
- 040.3.2.4.1.2 Contract Design Review (KDR) - Phase I event.
- 040.3.2.4.1.3 Integrated Baseline Review (IBR) - Phase II event.
- 040.3.2.4.1.4 Initial Critical Design Review (ICDR) - Phase II event.
- 040.3.2.4.1.5 Final Critical Design Review (FCDR) - Phase II event.
- 040.3.2.4.1.6 Production Readiness Review (PRR) - Phase II event.
- 040.3.2.4.1.7 Test Readiness Reviews (TRR) - Phase II events.
- 040.3.2.4.2 The Contractor shall demonstrate satisfactory performance at milestone reviews in order to proceed to the next contract phase or next contract milestone. The Contractor shall demonstrate satisfactory performance as measured against specific entrance and exit criteria.
- 040.3.3 Integrated Data Environment (IDE).
- 040.3.3.1 For Phase I and II, the USCG will provide an IDE to support the exchange and archiving of contract deliverables. The Contractor shall submit data deliverables via the IDE.

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- 040.3.4 Contract Work Breakdown Structure (CWBS). The Contractor shall prepare a CWBS and CWBS Dictionary. There shall be a single CWBS.
- 040.3.4.1 The CWBS shall be the structure for communication throughout the acquisition process. It shall be the common link that unifies the planning, scheduling, cost estimating, budgeting, contracting, configuration management, and performance reporting disciplines. The CWBS shall prepare clear traceability of work efforts and end products. The CWBS shall identify all project and product elements using the guidance in MIL-HDBK-881. The Contractor shall use the USCG Surface Forces Logistics Center Extended Ship Work Breakdown Structure/ Hierarchical Structure Code (USCG SFLC ESWBS/HSC) for lower branches of the CWBS for every phase of design, drawings, and provisioning.
- 040.3.5 Management Plan (MP).
- 040.3.5.1 The Contractor shall prepare and maintain an event-driven MP for Phase I and II.
- 040.3.5.2 The MP shall delineate the work effort, establish significant accomplishments to be completed prior to an event and describe the criteria for successful completion of each accomplishment.
- 040.3.5.3 The Contractor shall document the management organization and staffing to perform the required C4ISR subcontractor/vendor coordination, technical performance, engineering, design, procurement, construction, quality assurance, testing, trials, outfitting, delivery, and installation of the OPC(s) C4ISR system as a separate section of the MP.
- 040.3.6 Integrated Master Schedule (IMS). The Contractor shall prepare and maintain an event-driven IMS during Phase II.
- 040.3.6.1 The IMS shall be used as a primary planning and event progressing tool. It shall show and logically connect critical milestone events and accomplishments for both the prime and subcontractors through the end of the contract performance period.

041 Management Elements

- 041.1 Configuration Management.
- 041.1.1 The Contractor shall establish and maintain throughout the performance period a Configuration Management (CM) Program that implements the guidance contained in MIL-HDBK-61A, ANSI/EIA-649, and IEEE Standard 828-2005.
- 041.1.2 The Contractor shall maintain configuration control over the baselines designated as contractor in the following table:

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	Configuration Status Accounting View	Establishing Milestone	Stage	Configuration Control Authority
Functional Baseline	As-Contracted – P&CD	P&CD Awards	Contract	USCG
Allocated Baseline	As-Designed - Contract	Preliminary Design Review (PDR)	Design - Preliminary and Contract	Contractor
	As-Contracted - Detail	Downselect & DD Award	Contract	USCG
	As Designed - Detail	Critical Design Review (CDR)	Design - Detail	Contractor
	As-Contracted - Construction	Construction Contract	Contract	USCG
Product Baseline	As-Designed, Built, Tested and Delivered	Acceptance Trials	Integration & Test	Contractor
	As-Accepted	DD-250	Acceptance	USCG

- 041.1.2.1 The Functional Configuration Baseline (FCB) consists of the requirements contained herein.
- 041.1.2.2 The Allocated Configuration Baseline (ACB) formally breaks out the OPC FCB into more detailed functional requirements, technical requirements, interoperability requirements, and interface characteristics aligned to the SWBS. The ACB shall include requirements from the contract.
- 041.1.2.3 The requirements of the ACB shall be traceable to the FCB requirements.
- 041.1.2.4 The Contractor shall identify the initial ACB at the end of Preliminary Design. The Contractor shall update the ACB at the end of Contract Design and place the ACB under configuration management for Phase II execution.
- 041.1.2.5 The Contractor shall control and maintain the OPC ACB throughout the performance period.
- 041.1.2.6 The USCG may direct engineering / design changes by contract modification. The contractor shall incorporate such changes into the ACB during Phase II.
- 041.1.2.7 The initial Product Configuration Baseline (PCB) establishes the production-representative detail design and serves as the starting point for controlling the design during construction. The Contractor shall identify an initial PCB going into the Production Readiness Review.
- 041.1.2.8 The Contractor shall control and maintain the OPC PCB throughout the performance period.
- 041.1.2.9 The USCG may direct engineering / design changes by contract modification. The Contractor shall incorporate such changes into the PCB.

042 General Administrative Requirements

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042.1 Materials, services, software and Information. The Contractor shall provide all materials, services, and software and other information required herein that are not included in the contract Schedules.

042.1.1 The lists of Government Furnished Equipment, Services and Information, including software, which the USCG will furnish, are included in separate contract schedules.

042.2 Earned Value Management. During Phase II, the contractor shall establish, maintain, and use an Earned Value Management System (EVMS).

042.2.1 The EVMS shall be linked to and supported by the contractor's management processes and systems to include the integrated master schedule, contract work breakdown structure, change management, material management, procurement, cost estimating, and accounting.

042.2.2 The correlation and integration of these systems and processes shall provide for early indication of cost and schedule problems, and their relation to technical achievement.

068 Integration and Engineering

068.1 Systems Engineering.

0681.1 The Contractor shall establish and maintain a Systems Engineering Program that includes the core processes for managing and implementing the engineering effort and requirements management, to ensure through all design, development, integration, test, production, training and support activities, that the ship and crew form an integrated system.

068.2 Risk Management.

0682.1 The Contractor shall maintain a risk management program across both Phases.

070 General Requirements for Design and Construction

070.1 Measurement Units.

070.1.1 Imperial (US) units shall be used in the design and construction of the ship and reporting of Contract Data.

070.1.2 Where only Imperial (US) or metric (SI) units are specified, the requirements shall be met as written. If there is a discrepancy between US and SI values in any part of this RFP or a resulting contract, the US system value takes precedence.

070.1.3 When SI units are used in whole or in part, the Contractor shall comply with Federal Standard 376, and ASTM F1332.

070.1.4 Contractor-developed tables, charts, indicators, and other related information for the ship crew shall be in US units.

070.2 US Navy Enterprise Commonality Virtual Shelf. The Contractor shall review the Virtual Shelf periodically and consider incorporating virtual shelf items in the design. The Virtual Shelf is found at <https://viewnet.nswc.navy.mil> and additional guidance is found at <http://acc.dau.mil/commonality>. The Contractor shall report on use of the

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Virtual Shelf at design reviews.

077 System Safety Program

077.1 Safety Program. The Contractor shall establish and maintain a system safety program in accordance with MIL-STD-882.

085 Drawings

085.1 General drawing requirements.

085.1.1 The Contractor shall prepare and format drawings in accordance with COMDTINST M9085.1, except as modified herein.

085.1.1.1 The Contractor shall only use Standard USCG drawing templates A, B, C, D, H-8 or H-12.

085.1.1.2 Each drawing shall be assigned a standard USCG drawing number.

085.1.1.3 The Contractor shall use a drawing file numbering convention meeting S1000D. The drawings files shall be assigned an S1000D Information Control Number (ICN). The USCG drawing number shall be notated in the title block and the ICN shall be noted below the title block.

088 Human Systems Integration (HSI)

088.1 Human Systems Integration Program. The Contractor shall establish and maintain throughout the period of performance a Human Systems Integration (HSI) program in accordance with ASTM F1337 to ensure that users will be efficient, effective, and safe in the operation, maintenance, training and support of OPC systems, equipment, and facilities.

088.1.1 The Contractor shall conduct HSI in the seven domains and their interaction: Manpower, Human Factors Engineering, Personnel, Habitability, Personnel Survivability, Performance Support & Training (PS&T), and System Safety/Occupational Health (SSOH).

088.2 OPC HSI Lead. The Contractor shall designate a single OPC HSI Lead who is in a position to influence design decisions to oversee HSI efforts across the project, including subcontractors, and to ensure consistency between design elements.

088.3 HSI Issue and Decision Database. The Contractor shall populate, maintain, and analyze an HSI Issue and Decision Database (HSI-IDD) in accordance with the HSI Risk Analysis process in ASTM F1337, using the Government's spreadsheet application. The HSI-IDD will be accessible on the USCG IDE.

088.4 Reporting. The Contractor shall report on HSI efforts by each domain at Milestone Reviews, Project Management Conferences (PMCs), Logistics Reviews, and

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Technical Meetings (TMs).

- 088.5 Human Factors Engineering. The Contractor shall establish and implement an HFE program at all phases of design and testing in accordance with ASTM F1337 and planned in accordance with MIL-STD-46855A. The Contractor shall establish human factors design requirements to develop Human-Machine Interfaces (HMIs) that are within the cognitive, physical, or sensory skills of the crew; that do not require complex manpower or training intensive tasks; nor result in frequent or critical errors. The Contractor shall apply Human Factors Engineering (HFE) in the selection and integration of Non-Developmental Items (NDI) into the design. The Contractor shall develop HMIs to produce a common look and feel with consistent protocols for system interfaces.

090 Quality Assurance

- 090.1 Quality Management. The Contractor shall prepare and implement an independently certified Quality System that complies with ISO 9001 to ensure the quality of design deliverables, technical data and products.
- 090.2 ISO certification. The Contractor shall have and maintain ISO certification throughout the period of performance. The term “organization” as used in the standard shall denote the Contractor. The term “customer” as used in the standard shall denote the USCG.
- 090.3 ISO 9001. The quality system requirements of ISO 9001 shall apply with the following modifications.
- 090.3.1 Records pertaining to the quality management system shall be available to the USCG during normal business hour of operation, for the period of performance.
- 090.3.2 The organizational elements of purchasing, design, production, and quality assurance shall have equal ranking in the organizational structure. The “management representative” for quality control shall report directly to the “organization’s management” without intermediary reporting to any of these other organizational elements.
- 090.3.3 Identification and traceability: The organization shall identify the product by suitable means throughout product realization.
- 090.3.4 The organization shall conduct a management review and internal quality management system audits annually.
- 090.4 Discrepancies. When QA discrepancies are detected, the Contractor shall initiate corrective action for any findings of nonconformity in accordance with the approved Quality Program Plan within 14 days.
- 090.5 Corrective action. The Contractor shall respond to USCG requests for corrective action within 21 calendar days of receipt. Safety related issues shall be resolved within 14 days. The Contractor shall include in its response to USCG reported deficiencies the date by which corrective action shall be implemented.

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- 090.6 Status. QA activities and corrective action status shall be summarized at the Program Management Conferences.
- 090.7 Quality Plan. The Contractor shall prepare, implement, and maintain a Quality Plan. The Contractor shall comply with the approved Quality Plan throughout the duration of the contract.
- 090.8 Technical Manual Quality Assurance. The QA program shall include Technical Manual Quality Assurance (TMQA) Program.

092 Shipboard Testing

- 092.1 Ship test program. The Contractor shall plan and execute a ship test program.

098 Mockups, Modeling, and Simulation

- 098.1 Interferences. The Contractor shall prepare Mockups and Modeling to support assessments of physical interferences within the design that affect equipment location, operation, maintenance and system safety and the human engineering features of the design with respect to access, operation, maintenance, casualty response and safety.
- 098.2 Interfaces. The Contractor may use simulation and stimulation to replicate interfacing equipment and sensors for integration testing.

400 General Requirements for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) System and other Electronics Systems

- 400.1 Capability Maturity Model Integration - Integration. The Contractor's organization responsible for C4ISR integration shall be appraised to Capability Maturity Model Integration (CMMI) Level 3, or higher, in Acquisition and Development as defined the Software Engineering Institute (SEI).
- 400.2 Capability Maturity Model Integration - Development The Contractor's organization responsible for software development shall be appraised to SEI CMMI Level 3, or higher.
- 400.3 Status. The Contractor shall provide the USCG insight and status of C4ISR engineering, design and pre-construction planning efforts, and identify potential problems that could adversely impact C4ISR cost, schedule or performance.