

Code 15 OK-410(V)4 Handling and Stowage Group (H&SG) Build to Print (BTP) Hardware Contract Pre-Solicitation Conference

**NUWC Division Newport
Undersea Collaboration & Technology Outreach Center
(UCTOC)
17 September 2015**



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Agenda



- ❑ **Introduction/Ground Rules**
- ❑ **Disclaimer Statement**
- ❑ **Anticipated Procurement Strategy**
- ❑ **Technical Requirements & Overview**
- ❑ **DIVNPT Competition and Small Business Goals and Metrics**
- ❑ **Conclusion/Wrap-up**

Introduction/Ground Rules



❑ Introduction of Participants

❑ Intent of this Pre-Solicitation Conference

- *Encourage competition by:*
 - » *Providing technical information to provide potential offerors a better understanding of the technical requirements*
 - For Prime and Subcontracting opportunities
 - » *Ensure all potential offerors receive, and have access to, the same information*

❑ Technical “Q&A” is encouraged

- Q&A will be answered, either today or via the Federal Business Opportunities (FBO) Portal
- No questions about incumbent contractor

Introduction/Ground Rules (Cont.)



- ❑ All attendees recommended to sign-in (this is voluntary)
- ❑ Please silence cell phones and pagers. No personal recording
- ❑ Q&A will be recorded, typed, and posted to the FBO Portal
- ❑ The Attendees list will be posted to the FBO Portal
- ❑ This briefing will be posted to the FBO Portal and the NUWCDIVNPT Electronic Reading Room:
 - <http://www.navsea.navy.mil/Home/WarfareCenters/NUWCNewport/Partnerships/BusinessPartnerships/ElectronicReadingRoom.aspx>
- ❑ DO NOT directly contact the NUWC technical code after today - all further dialogue will be accomplished via the Q&A feature on the FBO Portal
- ❑ Technical requirements contained in this briefing are presented as a summary
 - Full/updated technical requirements will be provided in the Request for Proposal (RFP)

Disclaimer Statement



- ❑ Remarks today by Government officials involved in the Code 15 OK-410(V)4 H&SG requirement should not be considered a guarantee of the Government's course of action in proceeding with the acquisition
- ❑ The informational briefing shared today reflects current Government intentions and is subject to change based on a variety of circumstances

The formal solicitation, when issued, is the only document that should be relied upon in determining the Government's requirements.

Anticipated Procurement Strategy



❑ **This is a follow-on of NUWCDIVNPT Contract N66604-09-C-0015**

- (5) Offers received
- Canadian Commercial Corporation (Incumbent)

❑ **Five (5) year Period of Performance**

- Base year plus 4 one year options
- Full and Open Competition (Unrestricted)
- Notional Quantity per FY

<u>FY Buy/FY Install</u>	<u>FY17/FY19</u>	<u>FY18/FY20</u>	<u>FY19/FY21</u>	<u>FY20/FY22</u>	<u>FY21/FY23</u>	<u>5-Year Total</u>
SQQ-89A(V)15 New Quantities	5	6	6	5	6	28

- ❑ **Contract LOE: Engineering Services 12,000 hrs. – CPFF**
- ❑ **Organizational Conflict of Interest (OCOI) Clause Applies**
- ❑ **Clearance Level: UNCLASSIFIED**

- ❑ **Other Direct Costs (ODC's) will be less than 13% of total labor and ODC**
- ❑ **Estimated Schedule:**
 - RFP Release: December 2015
 - Proposals Due: 60 days after RFP release
 - Award Date: September 2016
- ❑ **Work Locations**
 - 100% Contractors and Subcontractors-sites
- ❑ **Facilities**
 - Facility Security Clearance Not Required

❑ Government Furnished Materials/Equipment/Information (GFM/E/I)

- 7950-301-3005 Rev.1 CLIN 0009 Drawing Tree DDG 51 – Technical Drawing Package
- Software Design Description (SDD), ODIM Drawing 7950-306-1002-4
- Software Version Description (SVD), ODIM Drawing 7950-306-1011-0
- Performance Specification for the AN/SQQ-89A(V)15 ASW Combat System Handling and Stowage Group for the Multi-Function Towed Array, H&SG 08-001 Latest Revision-3, 3 June 2014
- Multi-Function Towed Array (MFTA) Electro/Optical Slip Ring Assembly (EOSRA) Test Specification DWG #: 8293682 Rev. C

“The contractor must be certified under the United States/Canada Joint Certification Program (JCP) to be granted access to the Technical Data Package for this solicitation. Within seven days from this event NUWCDIVNPT will post a presolicitation notice allowing for electronic access of the data package through Federal Business Opportunities (FBO).”

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❑ Government Furnished Materials/Equipment/Information (GFM/E/I)

- AN/SQR-19 Tow Cable
- AN/SQR-19 Array
- EOSRA Test Cable
- Ship-based Electronics Subsystem Simulator (SESS)
- SW Installation Real Time Control, Control Console, 79501644-0
- SW Installation Field Programmable Gate Array, Control Console, 79501700-0
- SW Installation Servo Drive, Power Distribution Panel (PDP), 79501646-0

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Technical Requirements & Overview

Code 15 Organization



15 Sensors & SONAR Systems Department Head

15A Deputy Department Head

15S Administrative Assistant

1501 Director, Business Operations

159 Director, Programs & Contracts

15A Customer Advocacy

15B Director, Strategy & Special Projects

15E Director, Engineering

15T Director, Science & Technology

15A Information Technology

151 Science and Technology Division

1511 Automation Algorithm Development
1512 Devices, Sensors and Materials R&D
1513 Signal Processing Algorithm Development

152 Advanced Concepts Division

1521 Developmental Systems Engineering
1522 Prototype Development
1523 Technology Integration
1524 Concepts and Experimentation

153 Sensors and Arrays Division

1531 Underwater Sound Reference
1532 Towed and Deployed Arrays Engineering
1533 Hull Arrays and Distributed Sensors Engineering
1534 Handling Systems Engineering
1535 Fleet Sensors and Cables Engineering

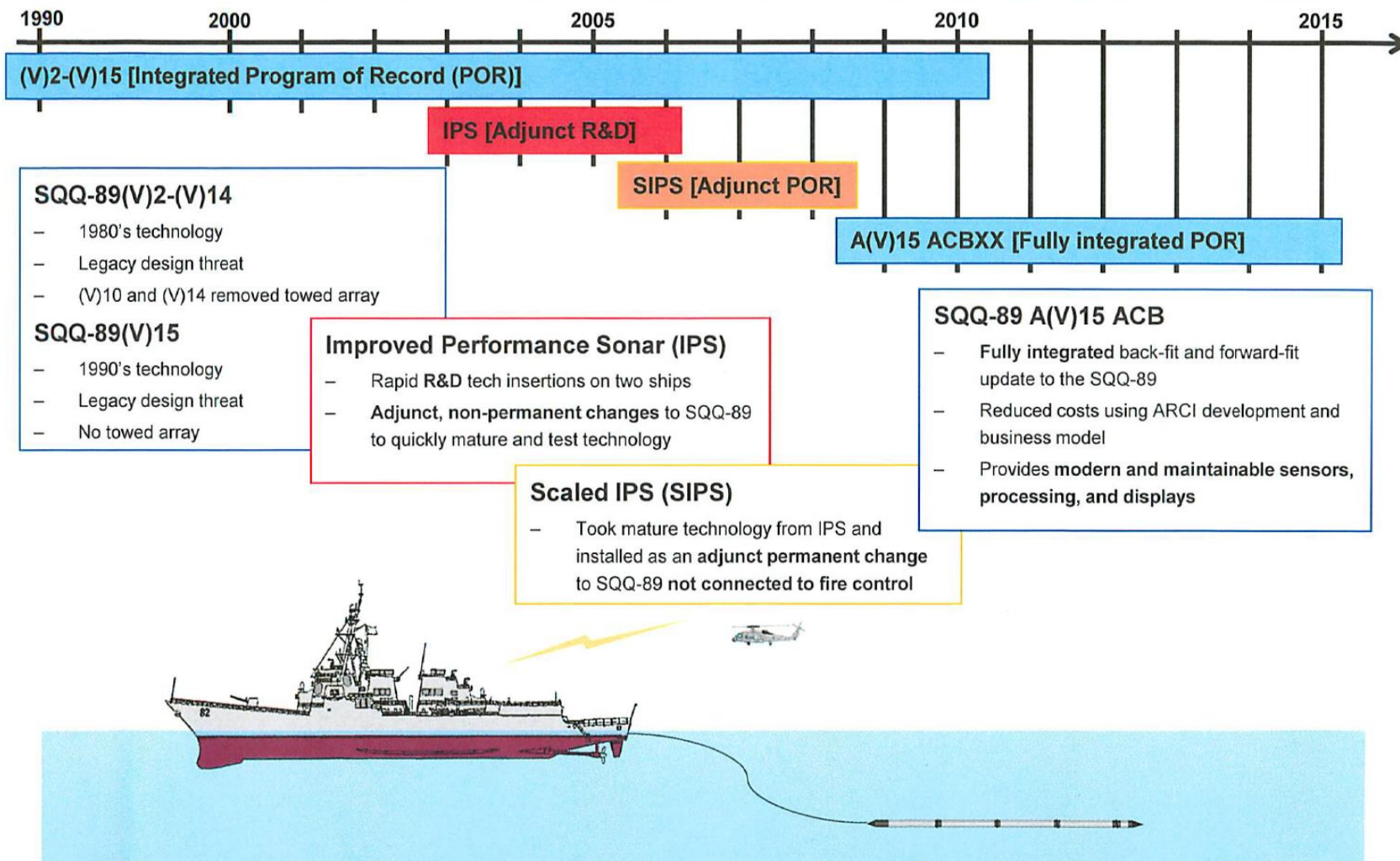
154 Submarine and Surveillance Systems Division

1541 Submarine and Surveillance Systems Engineering
1542 Passive Systems Engineering
1543 Submarine and Surveillance Systems Integration
1544 Submarine and Surveillance Test, Evaluation and Analysis
1545 Submarine and Surveillance Training, Logistics and Fleet Support

155 Surface Ship and Aviation Systems Division

1551 Surface and Aviation Systems Engineering
1552 Active Systems Engineering
1553 Surface and Aviation Systems Integration
1554 Surface and Aviation Test, Evaluation and Analysis
1555 Surface and Aviation Training, Logistics and Fleet Support

AN/SQQ-89 Upgrade History



ACBs have improved sensor performance, processing, displays, connectivity and training

MFTA OK-410(V)4 H&SG



- ❑ The OK-410(V)4 H&SG for the Multi-Function Towed Array (MFTA) is a production variant for the AN/SQQ-89A(V)15 ASW Combat System.

- ❑ PEO IWS 5 has authorized NUWCDIVNPT to procure H&SG equipment for future USW platforms.

- ❑ The OK-410(V)4 H&SG will be installed on the following ship classes:
 - DDG-51 FLT IIA
 - FMS (ATAGO Class DDG)

MFTA OK-410(V)4 H&SG



□ OK-410(V)4 H&SG consists of following Assemblies:

- Winch Unit 1
- Levelwind Unit 2
- Overboarding Fairlead Unit 3
- Control Console with Protection Screen Unit 4 and Unit 7
- Maintenance Kit Unit 8
- Power Distribution Panel Unit 9
- Intraconnect Cables
- Safety Rails

MFTA OK-410(V)4 H&SG Legacy Manufacturers



- ❑ **Gould Inc., Glen Burnie, MD, 1979**
- ❑ **Crane Defense Systems – Unidynamics, St. Louis, MO, 1988**
- ❑ **Lake Shore Mining Co., Iron Mountain, MI, 1996**
- ❑ **Canadian Commercial Corporation, Ottawa, 2009**
 - Prime Subcontractor Rolls Royce Naval Marine Canada, Peterborough, Ontario (formerly ODIM-Spectrum LTD)

MFTA OK-410(V)4 H&SG Acquisition Objectives



- ❑ **Provide Build-to-Print (BTP) OK-410(V)4 H&SG units to meet DOD DDG-51 installation fielding plan.**

- ❑ **Procure Spare Parts and Component Units to resolve life cycle support requirements.**

- ❑ **Provide Engineering Services and Materials to address engineering changes necessitated by Commercial Off The Shelf (COTS) obsolescence.**

MFTA OK-410(V)4 H&SG Acquisition Objectives (cont.)



- ❑ **The acquisition shall be a full and open competition leading to award of a contract for:**
 - Equipment and Spares - Firm Fixed Price Contract
 - Engineering Services - Cost Plus Fixed Fee Contract

- ❑ **The contract will be a five year Indefinite Delivery Indefinite Quantity (IDIQ) with CLINs for:**
 - H&SG Equipment, Spares, Engineering Services and Data Deliverables
 - To support Engineering Changes and Component Obsolescence Issues

MFTA OK-410(V)4 H&SG



- ❑ **The RFP will address the following major Statement Of Work (SOW) elements:**
- Program Management
 - Manufacture & Hardware Production Engineering of BTP OK-410(V)4 H&SG
 - Procurement of Spare Parts and Components
 - Engineering Services to support H&SG Engineering Changes and Obsolescence

NOTE: Although this is primarily a hardware requirement, a SOW is required to communicate the Government's requirements with respect to program management and reporting to ensure the Government has sufficient oversight into this fleet critical requirement.

MFTA OK-410(V)4 H&SG Program Management



❑ Integrated Schedule

- Develop and Manage schedule of awarded CLINs.

❑ Reporting

- Production Progress
- Failure Summary and Analysis
- Material Non-Compliance
- Corrective Actions

❑ Reviews

- Program Status
- Production Readiness
- Test Readiness
- Obsolescence

MFTA OK-410(V)4 H&SG Manufacture & Hardware Production Engineering of BTP OK-410(V)4 H&SG



□ First Article (FA) Phase

- The document, inspect, fabricate, test, package, and delivery of FA OK-410(V)4 system
- FA hosted Physical Configuration Audit
- FA Tests
 - » *Procedures, Test Events, Inspections and Reports*

□ Production Phase

- Manufacture, assemble, inspect, integrate, test, package and delivery of Production OK-410(V)4 systems
- Procedures, Reports and Reviews:
 - » *Production Test, Factory Acceptance, Test Readiness, Inspections, Tests, and Certificates of Compliance*

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MFTA OK-410(V)4 H&SG

Procurement of Spare Parts and Components

❑ Perform all production activities for planned spare /repair parts and Provisioned Item Order (PIO) Spares

- Procure, fabricate, furnish, inspect and test spare parts
- Deliver a Spare Parts Test/Inspection Report and Certificates of Compliance (e.g., for material certifications)

❑ Spares Parts

<u>Description</u>	<u>P/N</u>
Control Station Assy	79500796
EOSRA	79500063
Hagglunds Hydraulic Motor	79500202
40hp Electric Pump Motor	79500863
7.5hp Electric E-Drive Motor	79500139
Hydraulic Pump	79500850
Levelwind Motor	79501254
Levelwind Servo Drive	34801
Levelwind Absolute Encoder	31641
Power Supply, 440VAC IN, 24VDC/960W OUT	31952
Power Supply, 440VAC IN, 24VDC/480W OUT	31953

❑ PIO

- Provides capability to negotiate for Spare Parts not on Approved Spare Parts List

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- ❑ **Engineering Services to support H&SG Engineering Changes and Obsolescence - Tech Investigation to support**
 - System level HW and SW design changes
 - Issues including failures, faults, degraded performance, intermittent operational anomalies, and damaged equipment
 - Issues requiring Deviations
 - Component Obsolescence – Determine root cause, generate alternative solutions and produce recommend courses of actions
- ❑ **Develop, modify, update and maintain documentation**
 - Performance Specification
 - System Engineering Management Plan
 - Test Plans
 - Engineering Change Proposals

H&SG General Requirements



Winch, Levelwind, Fairlead

- ☐ Survival Snag Load 84,000 lbs
- ☐ Max Static Load 21,500 lbs
- ☐ Dynamic Load 6400 – 12,900 lbs
- ☐ Main and Emergency Drive Modes
- ☐ Automatic and Manual Control Modes

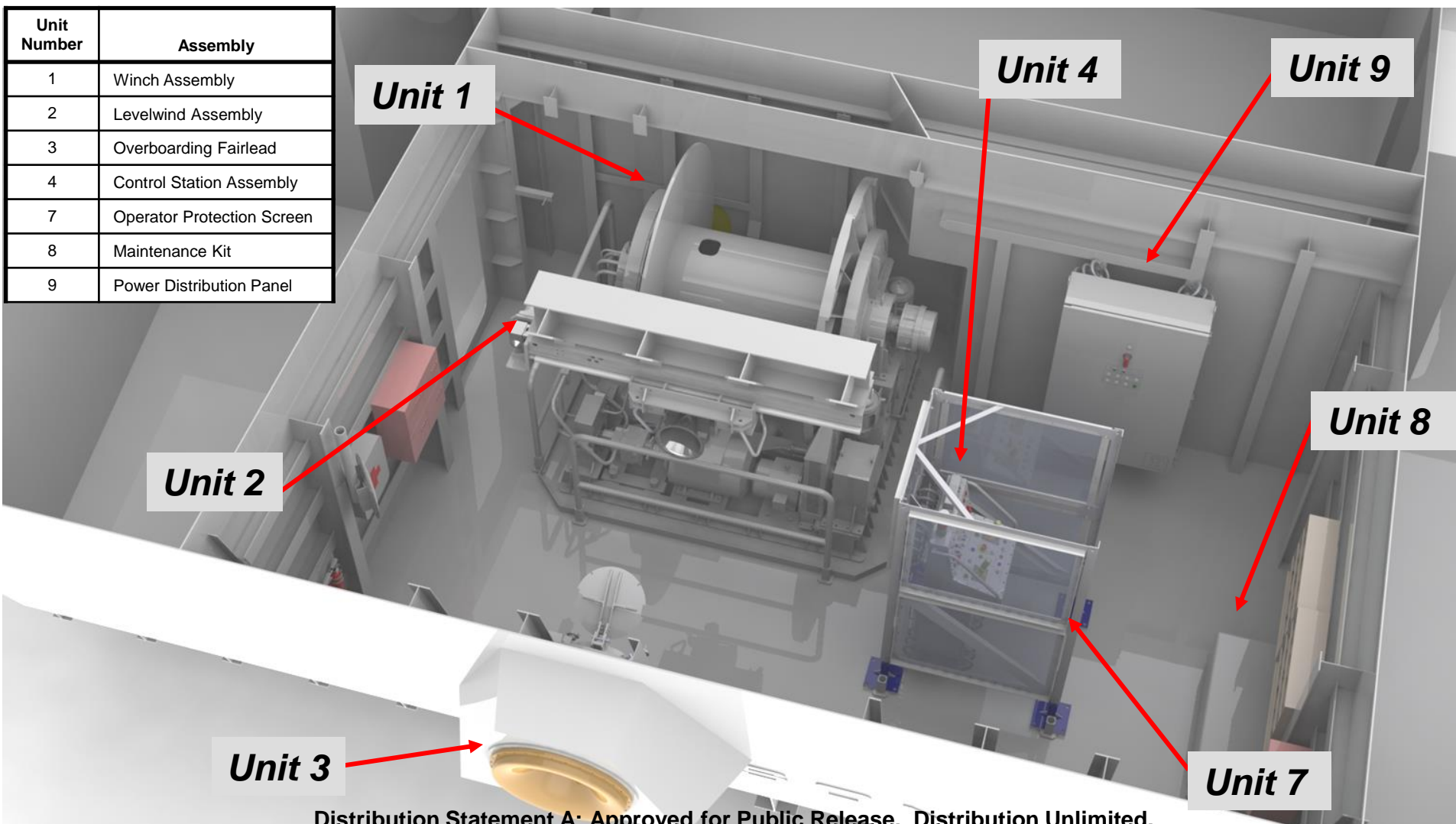
Power Distribution Panel

- ☐ Ship Power 440Vac, 3 Φ , 60 Hz
- ☐ Max Power \leq 40 kWatts
- ☐ Redundant Levelwind Servo Drives

MFTA OK-410(V)4 H&SG

General DDG-51 FLT IIA Layout

Unit Number	Assembly
1	Winch Assembly
2	Levelwind Assembly
3	Overboarding Fairlead
4	Control Station Assembly
7	Operator Protection Screen
8	Maintenance Kit
9	Power Distribution Panel



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OK-410(V)4 Winch



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OK-410(V)4 Winch Assy

Winch Frame Assy

- ☐ Steel Structural Shapes/ Plating
- ☐ Port Pedestal support hydraulic motor
- ☐ Stbd Pedestal support drum bearing block and serves as hydraulic reservoir
- ☐ Drum is rigid weldment with a hydraulically activated Pawl Brake and Band Brake that is spring set and hydraulically released, both attached to the frame.
- ☐ Winch drum has self-aligning, spherical roller bearing.
- ☐ Junction Box for all connections from the Control Console and E-Stop Switch.

Power Train

- ☐ 40 HP Electric Motor
- ☐ Hydraulic Pump, Suction Filter, Proportional Control Valve, Manifold, Motor and Pressure Gages
- ☐ Heat Exchanger
- ☐ Return Filter
- ☐ E-Hand Pump to power band brake and pawl.

Emergency Power Train

- ☐ 7.5 HP Electric Motor
- ☐ Gear Reducer & Drive Sprocket
- ☐ Bull Gear Sprocket and mechanical locking pins

OK-410(V)4 H&SG Levelwind

LW Support Frame

- ☐ Proximity Sensor limits carriage over travel
- ☐ Absolute Encoder tracks cable position



LW Carriage

- ☐ Mounted below Support Frame
- ☐ Traverse on 2 RoundWay rollers
- ☐ DC Servo Drive Motor (Port Side) connected to Speed Reducer and Ball Lead Screw
- ☐ Cable Track routes Signal Connectors to Carriage Junction Box
- ☐ Carriage Bell Mouth oriented toward Fairlead
- ☐ Angle Sensor Assy senses cable departure angle as the Carriage transverse the Support Frame
- ☐ Diameter Sense Roller Assy and Proximity Sensor senses tow cable and towed array diameter changes and provides secondary means for Array Imminent condition

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OK-410(V)4 Overboarding Fairlead



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OK-410(V)4 H&SG Overboarding Fairlead



Fairlead

- ☐ Bell Mouth Monel Casting
- ☐ Watertight Door secures winch space when MFTA is stowed

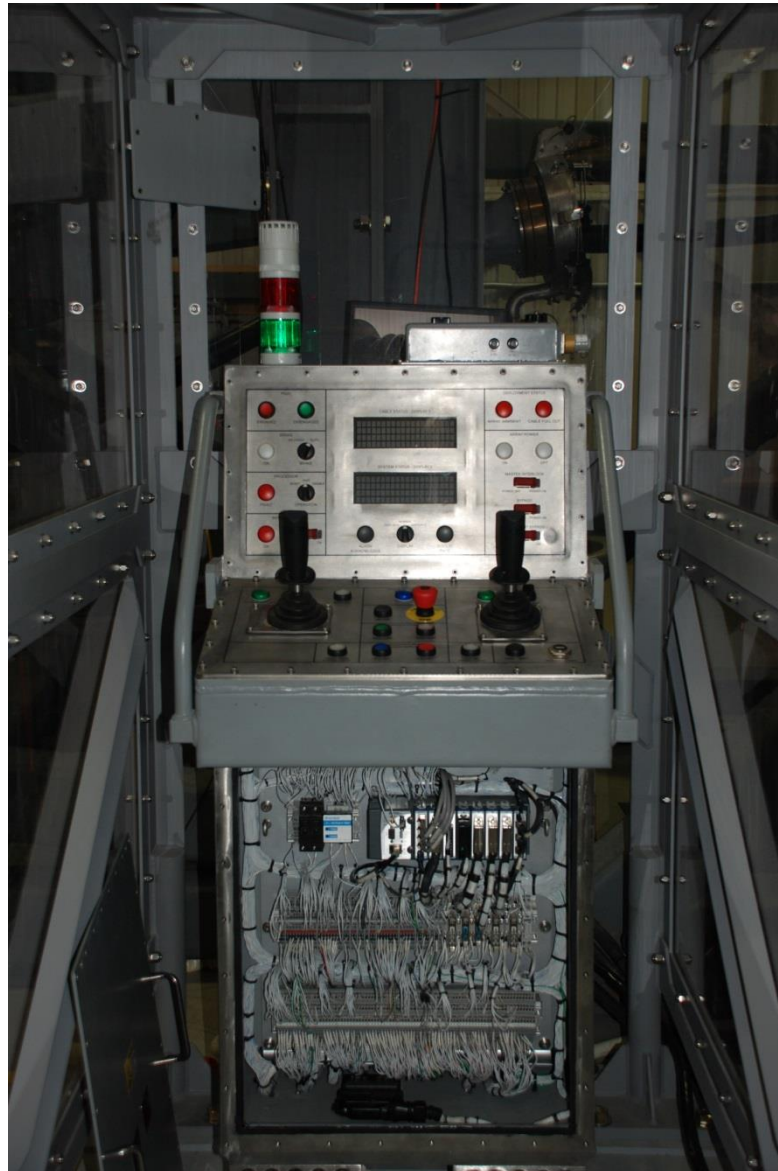
Plug Assy

- ☐ Seals Fairlead against weather/sea when MFTA is deployed

Wiper and Drain Assy

- ☐ Provides fresh water lubrication
- ☐ Minimizes water intake into winch space during MFTA retrieval

OK-410(V)4 Control Console and Operator Protection Screen



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OK-410(V)4 H&SG Control Console w/ Protection Screen



General Features

- ❑ Provides standing operator primary control for system operation
- ❑ Includes:
 - Upper Control/Lower Control Panels (UCP/LCP)
 - Low voltage power supplies
 - Control Logic Circuits (Programmable Automation Controller – PAC)

UCP

- ❑ Pawl and Brake
- ❑ Processor and Battleshort
- ❑ Main Power Controls
- ❑ 2 Alphanumeric Digital Displays for:
 - Cable/System Status
 - Performance Monitoring
 - Fault Detection/Localization

LCP

- ❑ E-Stop and E-Drive Operation
- ❑ Winch & LW Control Joysticks
- ❑ Lamp Test
- ❑ Winch Running Time Counter

OK-410(V)4 H&SG Operator Protection Screen



General Features

- ❑ Lexan (polycarbonate) sheet embedded inside a shock-mounted metal frame
- ❑ Encloses Control Console on three sides
- ❑ Protects operator from flying debris caused by either cable separation or winch malfunction.

OK-410(V)4 H&SG Maintenance Kit



General Features

- ☐ Lockable, watertight container
- ☐ Holds special tools:
 - Hydraulic Cable Wire Cutter
 - Reservoir hand pump handle
 - E-Drive Adapter Assy
 - Angle Sense Adjustment Tool
 - Ship Supplied Tools

OK-410(V)4 Power Distribution Panel



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General Features

- ☐ Controls application of electrical power to the H&SG
- ☐ Routes ship 440 VAC to circuit breakers for overload protection
- ☐ From circuit breakers power is distributed to:
 - Control Console, Levelwind, winch main and emergency drive motors and hydraulic fluid heaters
- ☐ Indicator lights show status of:
 - System power, power supplies, LW Servo Drives and fluid heaters
- ☐ Power Interlock requires disconnection of power prior to opening Panel door.
- ☐ System On Timer Counter

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❑ Procurement quantities tied to fielding plan for AN/SQQ-89A(V)15

- External drivers such as changes to CNO availability schedule for ship installations and Congressional budget adjustments drive actual procurement quantities
- Quantities identified represent maximum expected plan

<u>FY Buy/FY Install</u>	<u>FY17/FY19</u>	<u>FY18/FY20</u>	<u>FY19/FY21</u>	<u>FY20/FY22</u>	<u>FY21/FY23</u>	<u>5-Year Total</u>
SQQ-89A(V)15 New Quantities	5	6	6	5	6	28

- Intent is to exercise yearly procurement during 2nd Qtr of each fiscal year

Competition Goals and Metrics



- ❑ Increase overall competition by ensuring all companies have a fair opportunity to compete
- ❑ Encourage new vendors to bid
- ❑ Reduce/eliminate SeaPort-e RFP responses by (1) vendor
 - FY12 to Date Results:
 - » *Reduced SeaPort-e RFP responses by (1) vendor (i.e. “tripwire”)*
 - Every RFP that had received multiple bids previously received multiple bids again
 - Reduced “(1) bids” by 85%
 - Significantly expedites contract awards
 - » *Several new incumbents*
 - » *Seven (7) new Prime vendors have entered the market*

Small Business Metrics

□ FY 14

- SEA00K - assigned goal: set-aside 25% for small business
 - » *Achieved 35%*

□ FY 15

- SEA00K - assigned goal: set-aside 35% for small business
 - » *Currently achieving 37%*
 - » ***Compared to this time FY 14: awarded additional \$7M to SB, representing an additional 4%***

Conclusion/Wrap-up



- ❑ **Thank you for your interest in the Code 15 OK-410(V)4 H&SG Contract**
- ❑ **The attendees list will be posted to the FBO Portal**
- ❑ **This briefing will be posted to the FBO Portal and the NUWCDIVNPT Electronic Reading Room**
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