Agenda

• Mission Need
  – Maritime Security
  – Maritime Safety and Mobility

• AIS - The Core of NAIS
  – What is AIS (a Technology and a Standard)
  – How AIS Works
  – What Information AIS Provides

• NAIS Project Description and Status
  – Increment 1 – AIS Receive In Critical Ports and Coastal Areas
  – Increment 2 – AIS Receive and Transmit Nationwide
  – Increment 3 – Long-Range AIS Receive
Mission Need
Maritime Security - The Impetus for NAIS

- U.S. Coast Guard (USCG) is the lead federal agency for U.S. Maritime Security
  - Protecting approximately 95,000 miles of America’s maritime boarders

- Maritime Transportation Security Act (MTSA) of 2002
  - Automatic Identification System (AIS) carriage
  - Direction to USCG on carrying out Maritime and Homeland Security

- The MTSA directs the U.S. Coast Guard:
  “to collect, integrate, and analyze information concerning vessels operating on or bound for waters subject to the jurisdiction of the United States, including information related to crew, passengers, cargo, and intermodal shipments.”
Leveraging the full functionality of AIS to enhance USCG preparedness for risks in the maritime environment and mission performance:

– Infrastructure and system for data communications between shore and vessels
– Tracking of and secure communications with government vessels
– Ability to manage AIS operations to preserve primacy of navigational safety

Ready Today...Preparing for Tomorrow
Maritime Domain Awareness

MDA Defined as:

“...the effective understanding of anything associated with the global maritime domain that could impact the security, safety, economy, or environment of the United States.” – National Plan to Achieve Maritime Domain Awareness
Enhancements of Other USCG Missions

• Maritime/Navigation Safety & Mobility
  – Vessel Traffic Management
  – Aids to Navigation
  – Domestic Icebreaking

• Search and Rescue Operations

• Maritime Incident Investigation
  – Collisions, allisions & groundings
  – Environmental incidents

• Vessel Inspection Program
AIS - The “Core” of NAIS

Originally conceived by international community for navigation safety...AIS is both:

• A Standard –
  – For communicating maritime navigation safety and security information
  – Internationally adopted as a requirement of vessels covered by the Safety of Life at Sea Convention (SOLAS)

• A Technology –
  – Shipboard broadcast system that acts like a transponder
  – Operates in the Very High Frequency (VHF) maritime band – “line of sight”
  – Permits the voiceless exchange of information between AIS-equipped vessels and shore-side stations
  – Information is continually and automatically updated in near real-time and received by all AIS-equipped ships and shore stations in its vicinity
AIS - how it works and what it does

Dynamic (2-10 sec)
- MMSI / IMO#
- POSITION
- ACCURACY (+/-10m)
- UTC
- COURSE (COG)
- SPEED (SOG)
- HEADING
- NAV STATUS
- RATE OF TURN

Static (6 min.)
- VESSEL NAME
- CALL SIGN
- LENGTH / BEAM
- TYPE OF SHIP
- ANTENNA LOCATION

Voyage Related
- DRAFT
- HAZ CARGO ONBOARD
- ETA / DESTINATION
- ROUTE PLAN

Safety Related
- SHORT TEXT MESSAGES

4500+ rpts per minute...

Each time slot represents 26.6 milliseconds.
NAIS Services – What you get

- Automatic reception of AIS information (vessel ID, location, speed, & other navigational information) nationwide out to 2,000 nm from shore
- Transmission of AIS messages out to 24 nm
- Blue Force (Government Asset) Tracking & data exchange
- Vessel data for fusion with other maritime info database systems for intelligence and operational decision makers
- Vessel ID and tracking via Common Operational Picture and sharing with other agencies
NAIS Acquisition - 3 Increments

I-1 Ongoing…transitioning to sustainment

I-1 Receive Only in Critical Ports
- Partnership w/ Naval Sea Logistics Center:
- Validated government design
- Purchased and installed AIS receive-only equipment at USCG designated sites
- Designed and implemented integrated support

Summary:
- Multiple contracts, Military Interdepartmental Purchase Requests (MIPRs) & Memorandums of Agreement (MOAs) to balance need for:
  - Interoperability
  - Leveraging existing Government infrastructure and expertise
  - Competition
  - Best technical solutions and minimizing reliance on proprietary systems

I-2 Nationwide Coverage w/ Transmit & Receive
- Best Value, Trade-off, Full & Open Competition
- Design, implement and test
- Receive/transmit, data processing & interoperability
- Full system integration
- System support as determined by Integrated Logistics Support Plan

I-3 Long-range Receive:
- Service Contract to satellite provider
- Contract for AIS on offshore platforms
- MIPR to National Data Buoy Center for AIS on data buoys
- System support to be included in each contract

Backbone For All Increments
Telecommunication and Information Systems Command (TISCOM) Connectivity Services (CGDN+/DHS OneNet)
Operations Systems Center (OSC) for Enterprise Data Warehouse Services
Navigation Center (NAVCEN) for System Operations Center Services
Nationwide AIS Operational View 1

**Increment 1** – Receive Only in 55 Critical Ports + 9 Coastal Areas

**Legend of Connectivity**

- **Current State**
  - **NAIS INC 1**
- **CGDN+/OneNet/Internet**

**Current Coverage** in VTS Ports and at Prototype Sites

- **NAIS Increment 1**
  - **Critical Port Coverage**
  - **Critical Coastal Coverage**

- **Shipboard AIS** used on AIS equipped vessels for navigation safety
- **Encrypted AIS** used for Blue Force Tracking

- **NAIS Storage & Dissemination**
  - NAIS Management & Monitoring
  - AIS Data Viewable on COP
  - Provides net-centric connectivity across domains
  - Maritime Intelligence Fusion Centers & other Users of NAIS data
  - NAIS Increment 1
  - Sector Command Center
  - Network Node

- **Network Node**
  - Provides direct feed of AIS data
  - Current Coverage in VTS Ports and at Prototype Sites
Nationwide AIS Operational View 1

Increment 2 – Transmit + Receive Nationwide

**Legend of Connectivity**

- **Current State**
- **NAIS INC 1**
- **NAIS INC 2**
- CGDN+/OneNet/Internet

**Coverage gaps filled by INC 2**

- **NAIS Increment 1** Critical Port Coverage
- **NAIS Increment 2** Nationwide Coastal Coverage
- **NAIS Increment 2** Nation-wide Coastal Coverage

NAIS provides data link for asset tracking and information exchange.

- Shipboard AIS used on AIS equipped vessels for navigation safety
- Encrypted AIS used for Blue Force Tracking

NAIS Storage & Dissemination

- Maritime Intelligence Fusion Centers & other Users of NAIS data

- Provides net-centric connectivity across domains

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- Operations Systems Center
- NAIS Storage & Dissemination
- Network Node
- Sector Command Center
- Sector Command Center
- Network Node
- NAIS Management & Monitoring
- Navigation Center
- Current Coverage in VTS Ports and at Prototype Sites
- NAIS Increment 1 Critical Port Coverage

- Sector Command Center
- Provided direct feed of AIS data

- NAIS Increment 1
- Current State

- NAIS INC 1

- NAIS INC 2

- CGDN+/OneNet/Internet

- Coverage gaps filled by INC 2

14
Near-Term Events

• Increment 1:
  – Sponsor’s Assessment of OT&E
  – Complete transition to sustainment

• Increment 2:
  – Release I-2 Phase I RFP (Nov ’07)
  – Award Contract (4th Qtr FY08)

• Increment 3:
  – Proof of Concept Satellite Launch (Dec ’07)
  – Satellite and Weather Buoy Concept Testing Report (3rd Qtr FY08)
Key Contacts & Information Links

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Other Resources:
NAIS Project Website: [www.uscg.mil/nais](http://www.uscg.mil/nais)
NAIS I-2 RFP Development Website: [www.naisproject.net](http://www.naisproject.net)
USCG NAVCEN Website: [http://www.navcen.uscg.gov](http://www.navcen.uscg.gov)
Questions ?