



# Acquisition Directorate

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## Nationwide Automatic Identification System Project

# The USCG Nationwide AIS Project

CG-939 | CDR Keith Ingalsbe

Maritime Domain Awareness Day | 29 Oct 2007



# Agenda

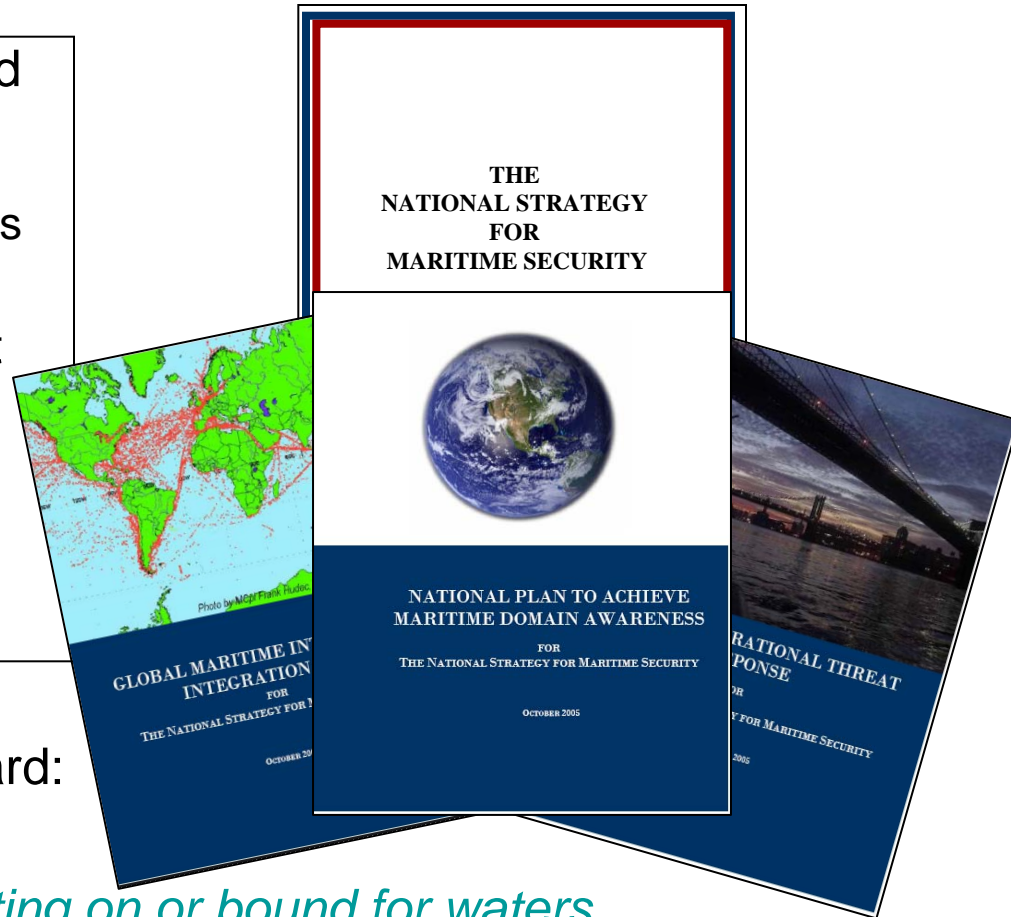
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- **Mission Need**
  - Maritime Security
  - Maritime Safety and Mobility
- **AIS - The Core of NAIS**
  - What is AIS (a Technology and a Standard)
  - How AIS Works
  - What Information AIS Provides
- **NAIS Project Description and Status**
  - Increment 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 borders
- 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.”*

# Maritime Safety and Mobility and Protection of Natural Resources

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

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## 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

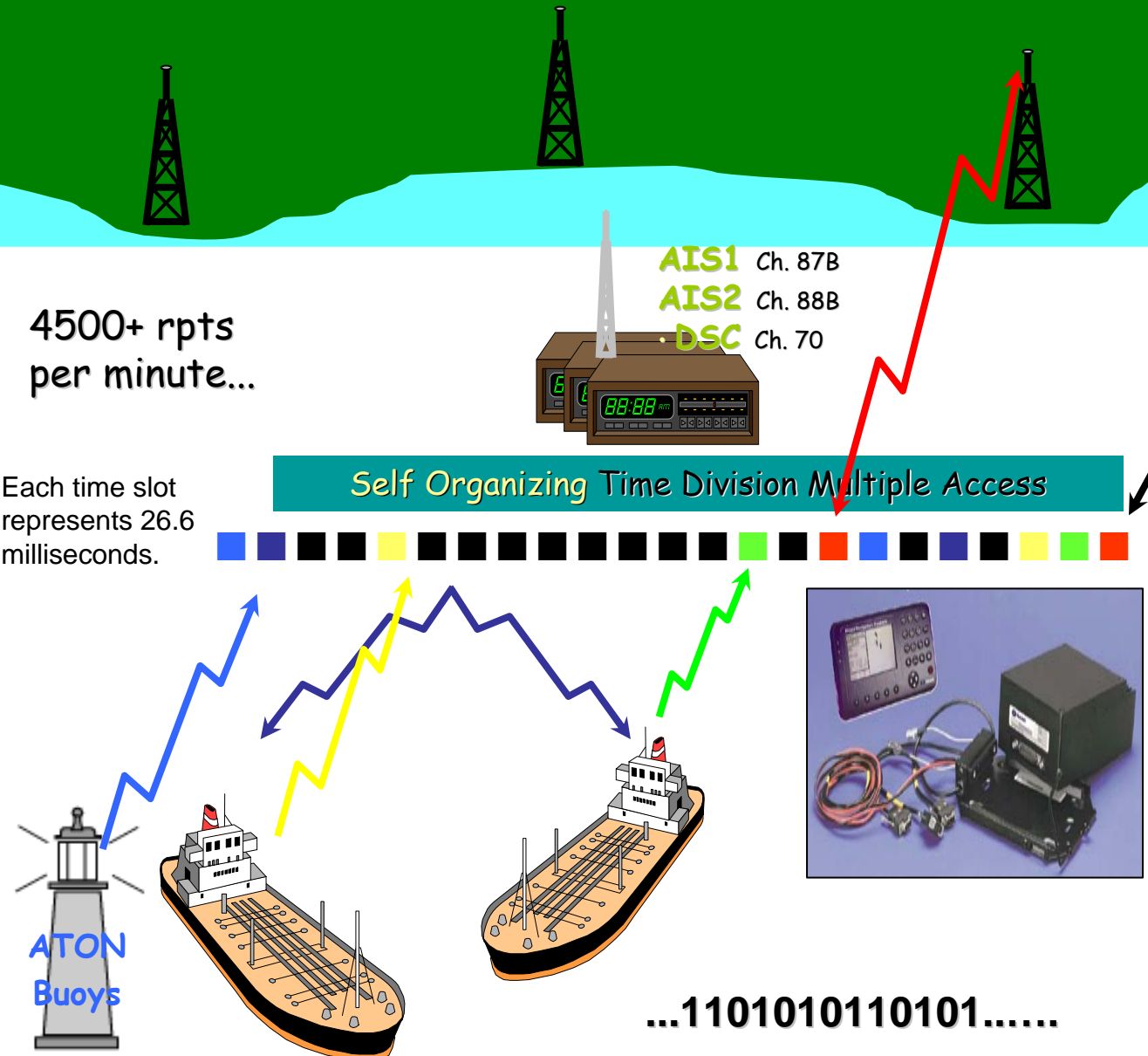


# AIS - The “Core” of NAIS

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

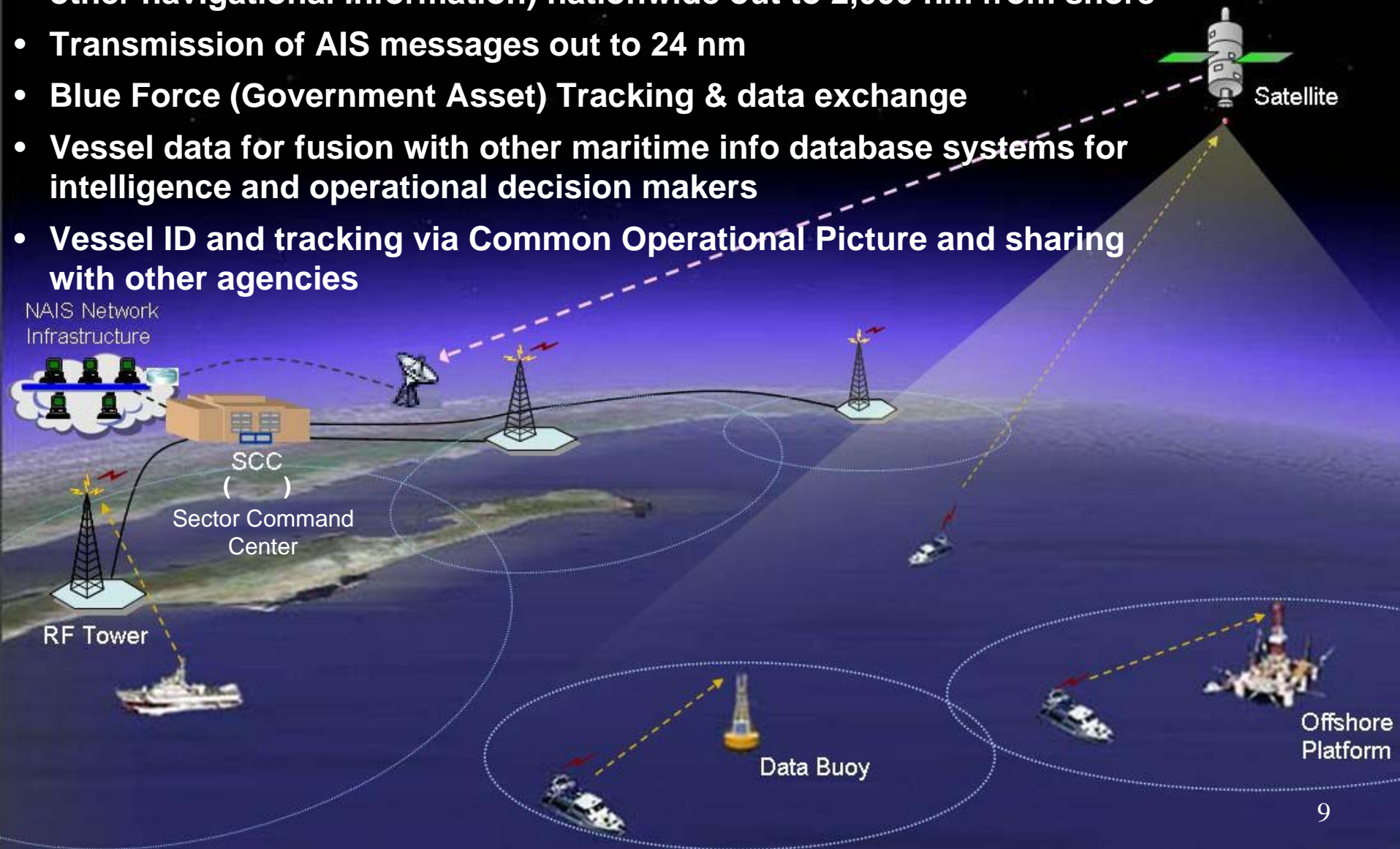
## Safety Related

- SHORT TEXT MESSAGES



# 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 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

## I-1 Ongoing...transitioning to sustainment

Increment 1 design and performance/support data provided as Government Furnished Information for Increment 2.

### 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:

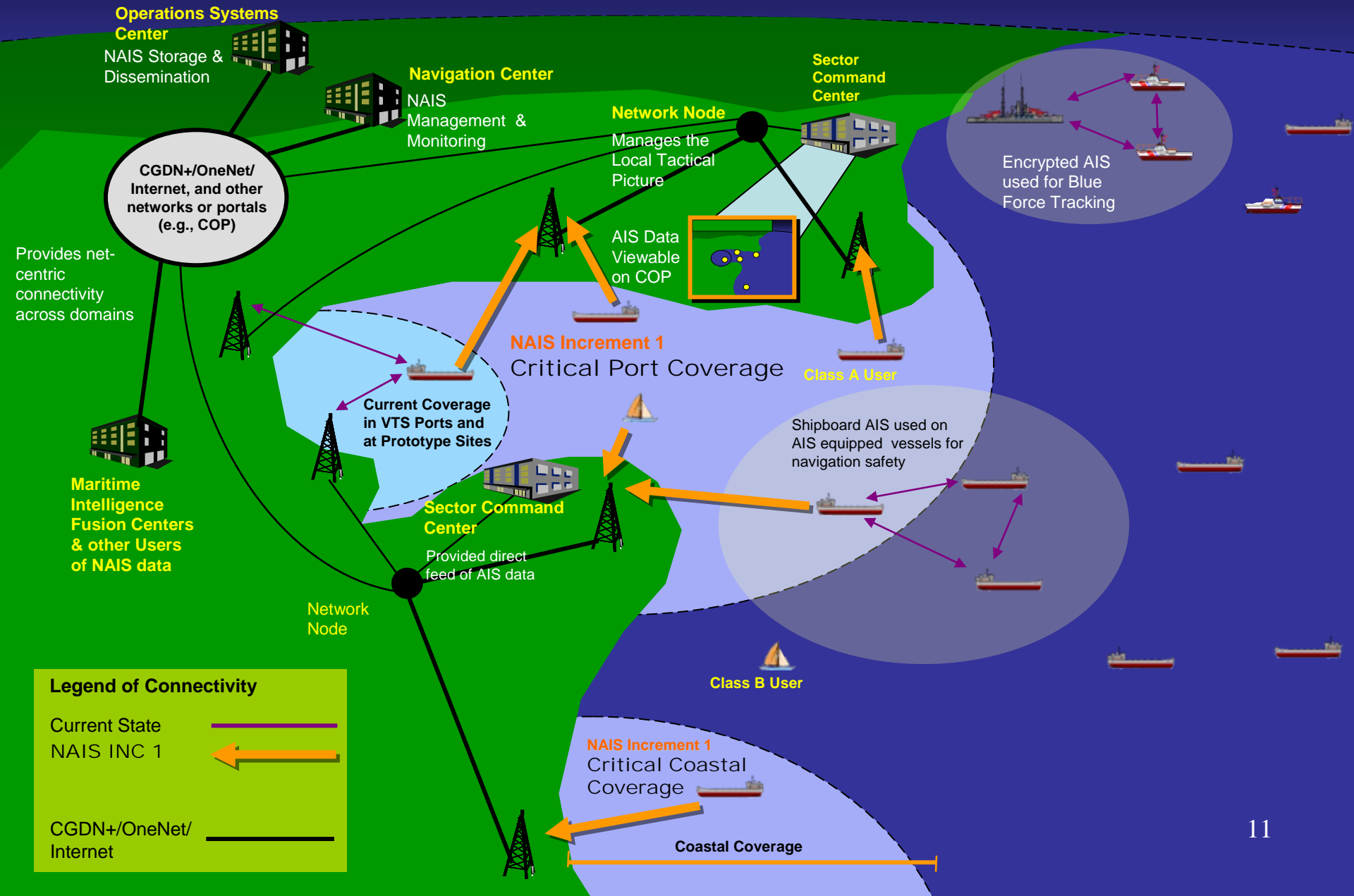
- Service Contract to satellite provider
- Contract for AIS on offshore platforms
- MIPR to National Data Buoy Center for AIS on data buoys
- System support to be included in each contract

## Backbone For All Increments

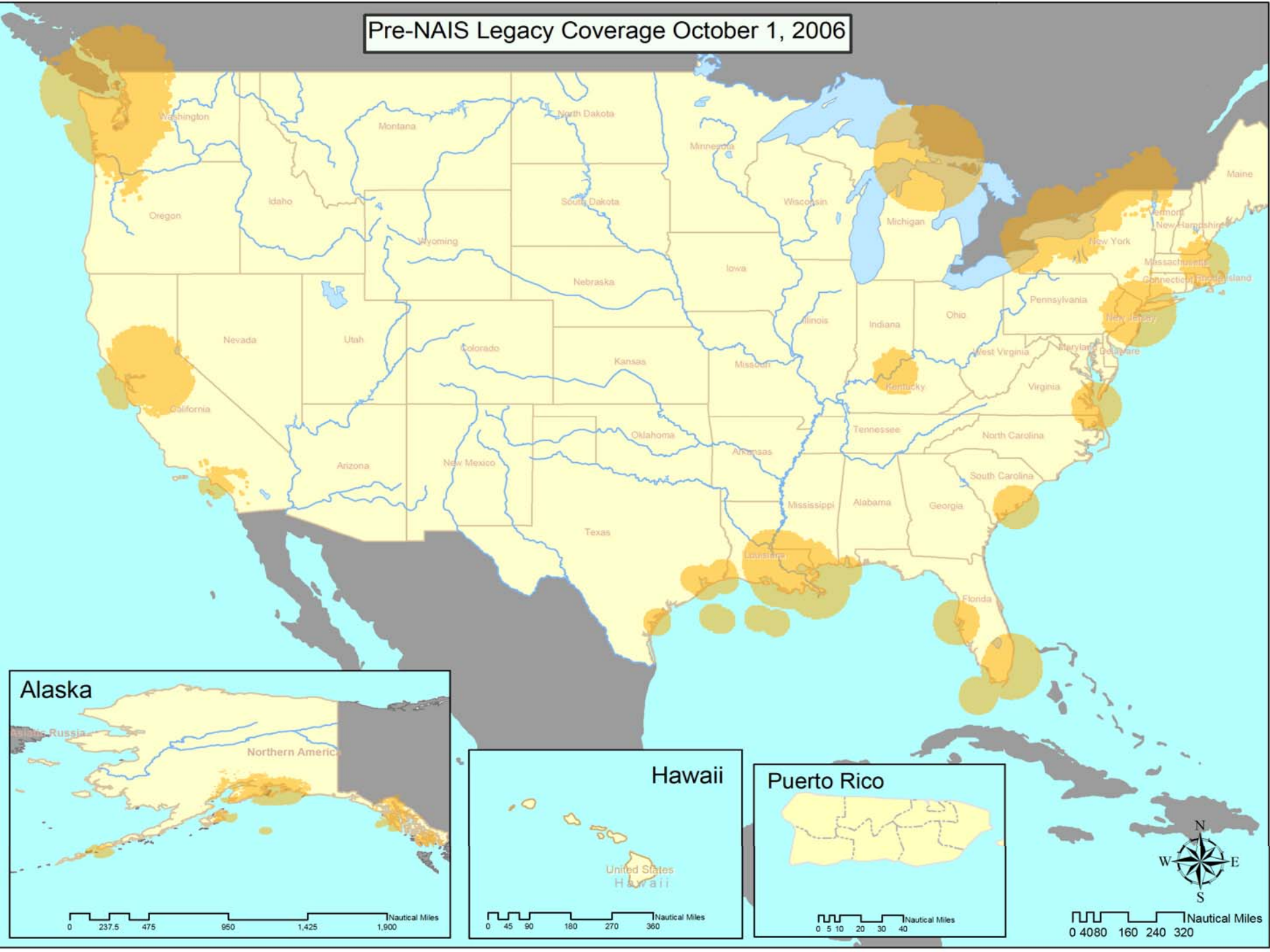
Telecommunication and Information Systems Command (TISCOM) Connectivity Services (CGDN+/DHS OneNet)  
Operations Systems Center (OSC) for Enterprise Data Warehouse Services  
Navigation Center (NAVCEN) for System Operations Center Services

# Nationwide AIS Operational View 1

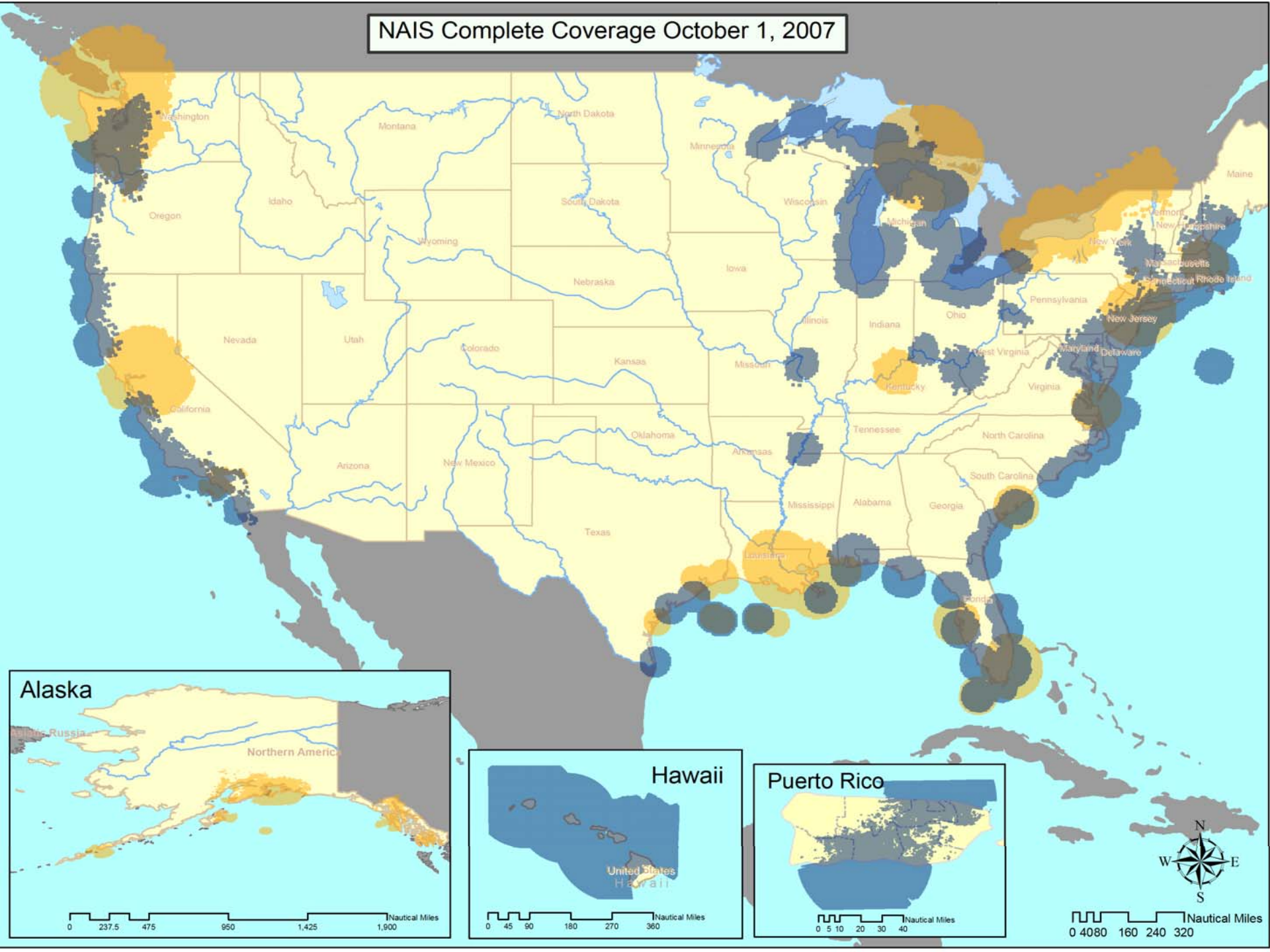
## Increment 1 – Receive Only in 55 Critical Ports + 9 Coastal Areas



# Pre-NAIS Legacy Coverage October 1, 2006



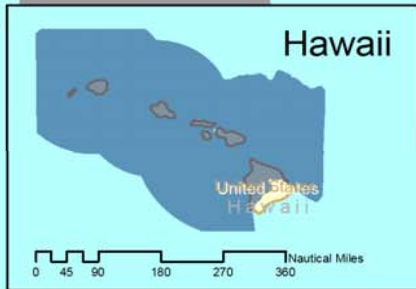
# NAIS Complete Coverage October 1, 2007



## Alaska



## Hawaii



## Puerto Rico

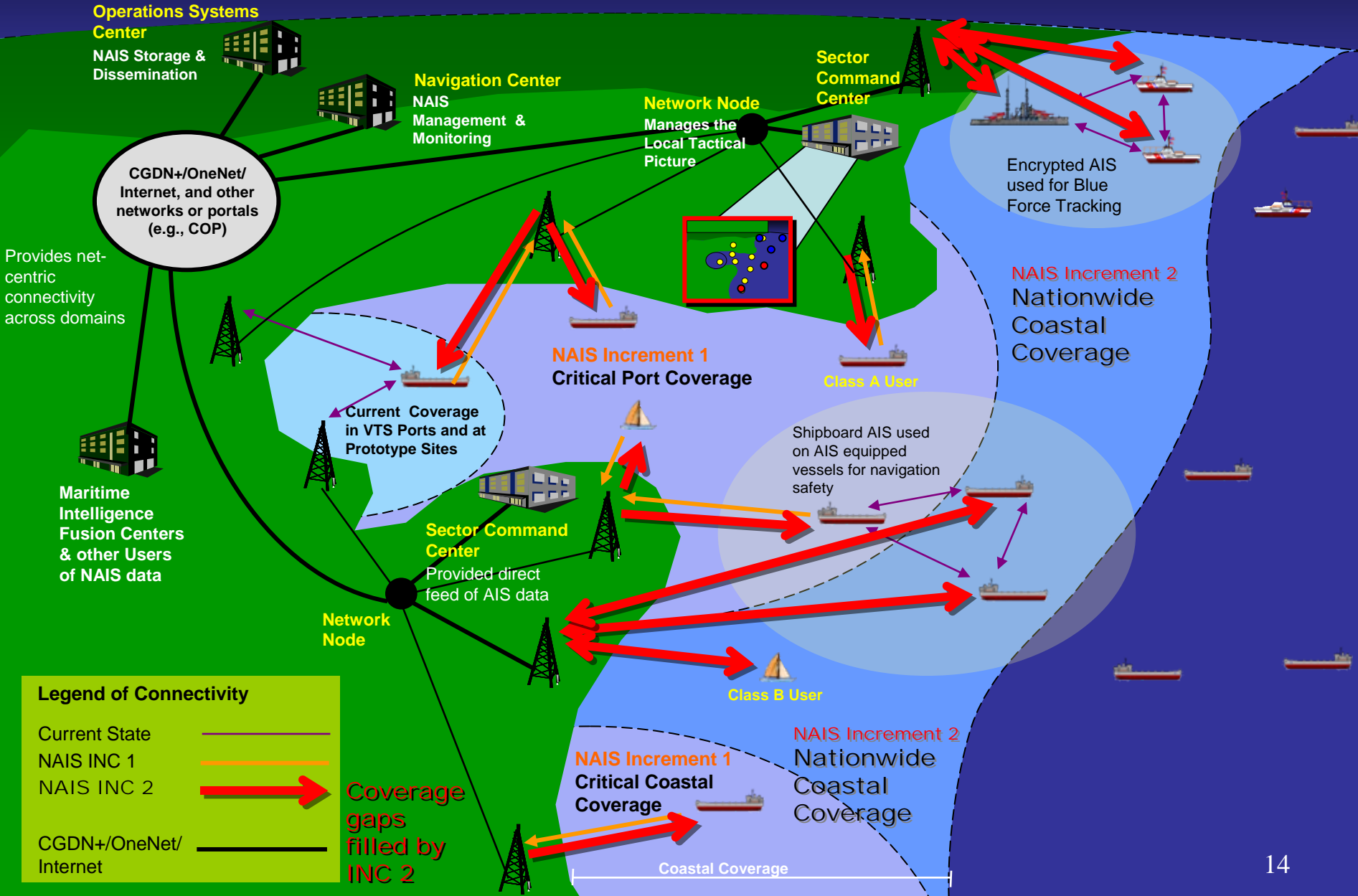


0 4080 160 240 320 Nautical Miles

# Nationwide AIS Operational View 1

## Increment 2 – Transmit + Receive Nationwide

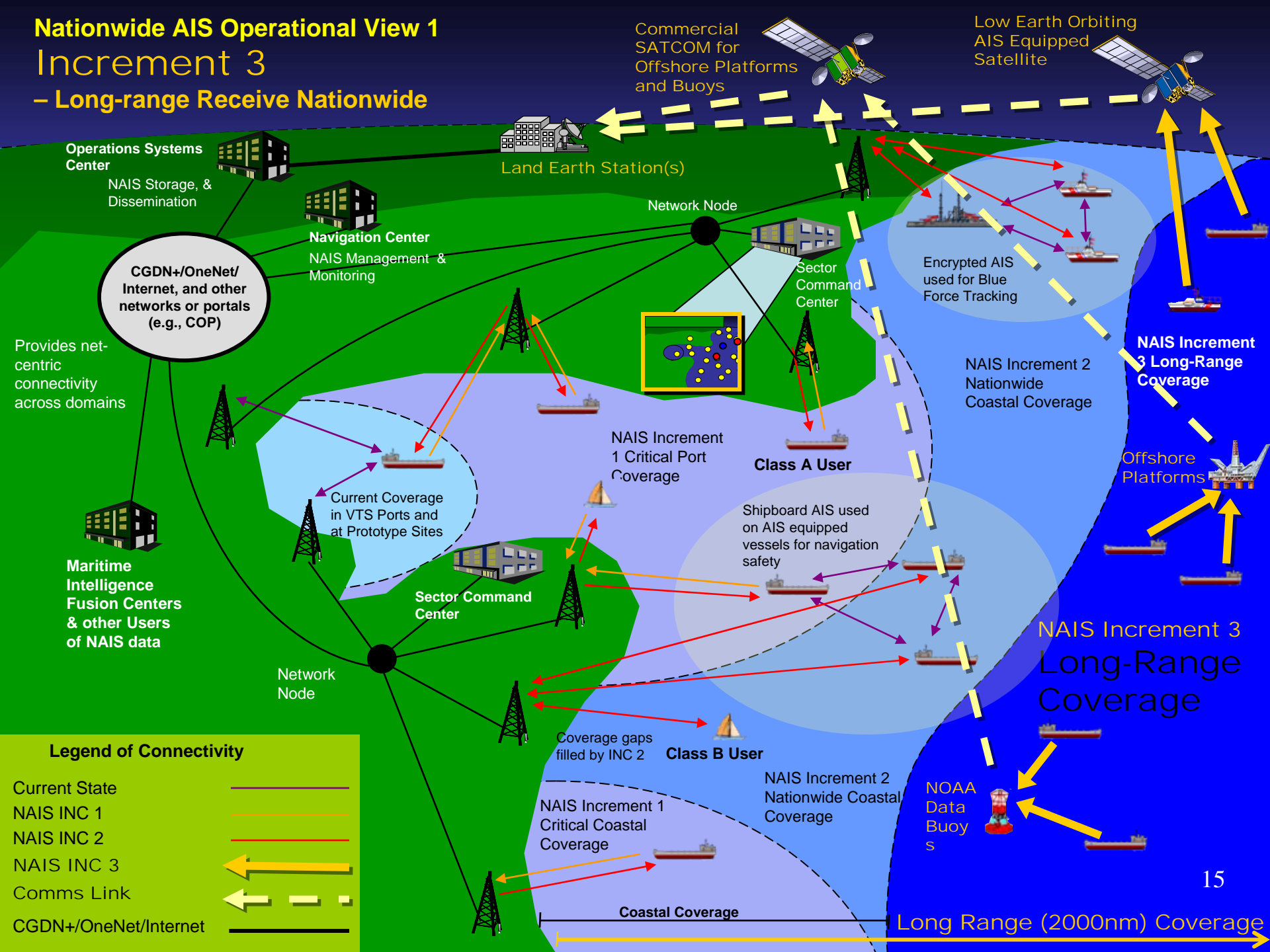
NAIS provides data link for asset tracking and information exchange



# Nationwide AIS Operational View 1

## Increment 3

### - Long-range Receive Nationwide



# Near-Term Events

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- Increment 1:
  - Sponsor's Assessment of OT&E
  - Complete transition to sustainment
- Increment 2:
  - Release I-2 Phase I RFP (Nov '07)
  - Award Contract (4<sup>th</sup> Qtr FY08)
- Increment 3:
  - Proof of Concept Satellite Launch (Dec '07)
  - Satellite and Weather Buoy Concept Testing Report (3<sup>rd</sup> 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>

Questions ?