U.S. COAST GUARD REPORT ON IMPLEMENTATION OF THE AUTOMATIC INFORMATION SYSTEM AND VESSEL MONITORING SYSTEM

The United States Coast Guard (USCG) has issued a notice of rulemaking to expand the Automatic Identification System (AIS) to include coverage of any fishing vessel with a length overall greater than 65 feet (Agenda Item E.1, Attachments 1 and 2). This satellite based system would be in addition to the satellite based vessel monitoring system (VMS) system required for trawl vessels beginning in 2004.

The action would be pursuant to the Maritime Transportation Security Act of 2002 and is intended to enhance the USCG ability to identify and track vessels, detect anomalies, improve navigation safety, and heighten our overall maritime domain awareness. Concern has been expressed about the additional burden represented by these requirements, in particular for vessels already carrying VMS units. The USCG will make a presentation on this proposal and respond to Council questions.

AIS is a requirement for all commercial vessels 65 feet or greater as of November 2003. The "new" rule for carriage in commercial fishing vessels is actually an implementation of the 2003 rule, expanding it to all of the vessels contemplated under the initial regulation.

Fishing vessels were initially "deferred" in the carriage requirement to allow time for the USCG to review the more than 200 comments it received from the commercial fishing industry during the public hearings and public comment period associated with the proposed rule in 2002 and 2003. The USCG considered the comments, notified Congress of the content of the comments and was given direction to move forward with complete implementation of the carriage requirements for AIS, as contemplated under the Maritime Transportation Security Act of 2002.

Also included in this agenda item is a letter from Dr. William Hogarth in response to concerns of the Council regarding the distribution of Fiscal Year 2006 funding for VMS units.

Council Task:

Discussion and guidance, as needed.

Reference Materials:

- 1. Agenda Item H.1.a, Attachment 1: Automatic Identification Systems and Mandatory Use Aboard.
- 2. Agenda Item H.1.a, Attachment 2: Notice of Rulemaking: Vessel Requirements for Notice of Arrival and Departure, and Carriage of Automatic Identification System. Federal Register: 70(209) 64171-64172, October 31, 2005.
- 3. Agenda Item H.1.a, Attachment 3: Letter from William Hogarth to Donald McIsaac in response to Council letter regarding VMS funding, March 7, 2006.

Agenda Order:

- a. Agenda Item Overview
- b. U.S. Coast Guard Report
- c. Reports and Comments of Advisory Bodies
- d. Public Comment
- e. Council Discussion

PFMC 03/20/06

Jim Seger

Automatic Identification Systems & Mandatory Use Aboard Commercial Fishing Vessels

In less than 10 seconds the 83-foot fishing vessel STARBOUND sank, taking three of her four crewmen with her. STARBOUND was working 130 miles off the New England coast on a foggy night in 2001 when a 590-foot Russian tanker ran the fishing boat over. The Russian tanker never stopped; its crew had no idea it had hit another vessel. Unfortunately accidents like this are not uncommon.

[As described by the SignOnSanDiego.com article "Vanished: The Mystery of the Gina Lisa – Missing at sea"]

Perhaps the outcome of the STARBOUND's voyage off the coast of New England would have been different if they were equipped with AIS.

AIS:

Purpose

- Enhances safety by improving mariners' situational awareness
- Improves authorities' maritime domain awareness

• Provides the User

- Near real time navigation information; such as vessel identity & type, position, course, speed, heading, dimensions, etc.
- Ship-to-ship and ship-to-shore-to-ship communication
- Ability to identify visual/radar contacts by name, bearing, & range -- No more "vessel off my port bow" radio calls, eliminating radio confusion and improving collision avoidance abilities
- Utility of sending/receiving short safety-related text messages.
- Connectivity with over 4000 vessels in the U.S and over 35,000 world-wide.

How it Works

- Digital VHF-FM radio self-organizing local area network (imagine a party line cell phone system where all users within radio range talk to each other and know where each is).
- Data transmitted every 2, 4, 6 or 10 second dependent on the vessel's speed or course change; 3 minute intervals when at anchor or at speeds under 3 kts.

VMS vs. AIS

- The systems are not currently compatible; they differ in purpose, communication method, & capability.
- VMS is used as a fisheries management and enforcement tool and will remain so the near future.
 - Satellite-based, gives periodic long-range position reports, & fishing information from vessels to shore.
 - Information confidential to protect privacy concerns of commercial fisherman.
- AIS is used as a collision avoidance and Vessel Traffic Service tool.
 - Primarily VHF based, gives consistent navigation information to other AIS vessels
 - Requires an external system for long-range satellite communications
 - Allows vessels to be seen ship-to-ship and ship-to-shore.
 - No additional communications fees like VMS.

WHY NOW?

- Marine Transportation Security Act of 2002 mandated a December 31st, 2004 deadline
- Intial AIS requirements were limited to Vessel Traffic Service areas (VTSA) and those vessels coming from abroad.
- Requirements were temporarily deferred outside VTSA's in order to seek further guidance on how to go about expansion of the requirements and obtain comment regarding the impact of AIS on 'small entities'
- Tragic events such as the collision between LEE III and ZIM MEXICO III, in 2004, and known intelligence on terrorists compels us to push forward.

COST

- Models range between \$2,500 and \$7,000
- Additional costs for installation & level of integration of AIS with other shipboard systems like radar, gyro, charting system, etc.

TIMELINE

- A firm timeline will be given when the regulations are published, but, rest assured that reasonable time will be given for purchase, installation, and use of AIS.
- The current regulations allotted 14 months for implementation.

DHS-USCG

60. VALIDATION OF MERCHANT MARINERS' VITAL INFORMATION AND ISSUANCE OF COAST GUARD MERCHANT MARINER'S LICENSES AND CERTIFICATES OF REGISTRY (USCG-2004-17455)

Priority:

Other Significant

Legal Authority:

46 USC 2103; DHS Delegation No. 0170.1, para (92)

CFR Citation:

46 CFR 10

Legal Deadline:

None

Abstract:

This rule would impose certain security-related requirements in order to obtain a license or certificate of registry. Applicants would be required to appear in person at least once during the application process, to provide two acceptable forms of identification, and be fingerprinted by Coast Guard personnel.

Statement of Need:

A Coast Guard-issued license authorizes its holder to serve in the capacity of vessel's officer allowing him or her to assume positions of responsibility in the command and control of merchant marine vessels. The harm that can be caused by persons who wrongfully obtain licenses with the intention of committing crimes or terrorist acts jeopardizes mariner safety and welfare, as well as national security. Our goal is to protect the licensing process from abuse. We recently identified several omissions and ambiguities in the former rule that could facilitate licensing abuse. This interim rule corrects those omissions and clarifies those ambiguities to promote maritime safety and security within the United States.

Summary of Legal Basis:

In the interests of marine safety and seamen's welfare, the Coast Guard was given general superintendence of merchant marine personnel by 46 U.S.C. 2103, 46 U.S.C. chapter 71, and Secretary of Homeland Security Delegation No. 0170.1. In 2002, Congress found that U.S. ports are susceptible to large-scale acts of terrorism that could cause a large loss of life or economic disruption, that "ports are often a major locus of Federal crime," (Maritime

Transportation Security Act of 2002, section 101, Public Law 107-295, 116 Stat. 2064) and that it is in the best interest of the United States to increase port security. This rulemaking aligns with a similar interim rule for Merchant Mariner's Documents (MMD) published on 6 January 2004.

Alternatives:

We considered non regulatory alternatives such as Navigation and Vessel Inspection Circulars and Marine Safety Manual Guidance, however, while these can be used for the development of policy and directives that provide guidance for the implementation of a regulation, they do not lay a sufficient legal basis for the Coast Guard to deny issuance of these credentials. We considered issuing an NPRM but believe we have sufficient good cause to go forward with an Interim Rule.

Anticipated Cost and Benefits:

This interim rule will affect mariners who apply for licenses and CORs. We estimate that the annual cost of this rulemaking will be \$16 million. A detailed regulatory evaluation will be published in the preamble of the interim rule.

We anticipate several qualitative benefits from the new requirements established by this rule. All applicants for licenses and CORs will be required to have their fingerprints taken by Coast Guard personnel at an REC and will be required to have their ID checked by Coast Guard personnel at an REC. In the past, applicants could have had their fingerprints taken and their identity checked by outside entities and submitted them by mail without a guarantee of accuracy or validity. The cumulative effect of the changes in this rulemaking will be to increase the likelihood that the Coast Guard will process applications only from, and issue credentials only to, applicants who can prove they are who they claim to be, and whose backgrounds can be verified to make sure they meet security-related requirements.

Risks:

This rulemaking is intended to reduce the vulnerability of a transportation security incident occurring in US ports and waterways resulting from merchant mariners who fraudulently obtain licenses and CORs. These licenses and CORs could potentially be used to fraudulently portray ones self as a deck, engineer or staff officer.

Timetable:

Action	Date	FR Cite
Interim Rule	11/00/05	

Regulatory Flexibility Analysis Required:

No

Small Entities Affected:

Nο

Government Levels Affected:

None

Agency Contact:

Gerald P. Miante Project Manager, G-MSO-1 Department of Homeland Security U.S. Coast Guard 2100 Second Street SW. Washington, DC 20593-0001 Phone: 202 267-0221

RIN: 1625–AA85

DHS-USCG

61. ● VESSEL REQUIREMENTS FOR NOTICES OF ARRIVAL AND DEPARTURE, AND CARRIAGE OF AUTOMATIC IDENTIFICATION SYSTEM (USCG-2005-21869)

Priority:

Other Significant. Major status under 5 USC 801 is undetermined.

Legal Authority:

33 USC 1223, 1225, 1231; 46 USC 3716, 8502 and Chapter 701; Sec. 102 of Pub. L. 107–295

CFR Citation:

33 CFR 160; 33 CFR 161; 33 CFR 164

Legal Deadline:

None

Abstract:

This rulemaking would expand the applicability for Notice of Arrival and Departure (NOAD) and Automatic Identification System (AIS) requirements. These expanded requirements would better enable the Coast Guard to correlate vessel AIS data with NOAD data, enhance our ability to identify and track vessels, detect anomalies, improve navigation safety, and heighten our overall maritime domain awareness.

The NOAD portion of this rulemaking would expand the applicability of the NOAD regulations by changing the minimum size of vessels covered below the current 300 gross tons, require that a notice of departure be submitted for

all vessels required to submit a notice of arrival, and mandate electronic submission of NOAD notices to the National Vessel Movement Center.

The AIS portion of the rulemaking would expand our AIS carriage requirements to all commercial vessels Congress specifically identified in the Maritime Transportation Security Act of 2002, and would include vessels carrying 50 or more passengers, vice the current 150 or more passengers for hire, carrying or towing certain dangerous cargo, certain dredges, and certain high speed passenger craft.

Statement of Need:

We do not have a current mechanism in place to capture vessel, crew, passenger, or specific cargo information on vessels less than or equal to 300 gross tons (GT) intending to arrive at or depart from U.S. ports unless they are arriving with certain dangerous cargo (CDC) or are arriving at a port in the 7th Coast Guard District. The lack of NOA information on this large and diverse population of vessels represents a substantial gap in our maritime domain awareness (MDA). We can minimize this gap and enhance MDA by expanding the applicability of the NOAD regulation beyond vessels greater than 300 GT, cover all foreign commercial vessels, more U.S. commercial vessels, and all U,S. commercial vessels coming from a foreign port; and enhance maritime domain awareness by tracking them (and others) with AIS. There is no current Coast Guard requirement for vessels to submit notification of departure information. In order to expand our MDA this information is necessary.

Summary of Legal Basis:

This rulemaking is based on Congressional authority provided in the Ports and Waterways Safety Act and the Maritime Transportation Security Act of 2002.

Alternatives:

Our goal is to increase MDA and to identify anomalies by correlating vessel AIS data with NOAD data. NOAD and AIS information from a greater number of vessels would provide even greater MDA than the proposed interim rule. We considered expanding NOAD and AIS to even more vessels, but we determined we needed additional legislative authority to expand AIS beyond what we propose in this rulemaking; and that it was best to combine additional NOAD expansion with future AIS expansion.

Although not in conjunction with a proposed rule, the Coast Guard sought comment regarding expansion of AIS carriage to other waters and other vessels not subject to the current requirements (68 FR 39355-56, and 39370, July 1, 2003;. USCG 2003-14878). Those comments were reviewed and considered in drafting this rule and will become part of this docket.

To fulfill our agency obligations, the Coast Guard needs to receive AIS reports and NOADs from vessels identified in this rulemaking that currently are not required to provide this information. Policy or other non-binding statements by the Coast Guard addressed to the owners of these vessels would not produce the information required to sufficiently enhance our MDA to produce the information required to fulfill our agency obligations.

Anticipated Cost and Benefits:

We expect vessel owners to incur costs from the additional NOA requirements in order to comply with the mandatory requirement of submitting notices by utilizing the Coast Guard's electronic Notice of Arrival and Departure (eNOAD) system.

Currently, vessels greater than 300 gross tons, foreign commercial and recreational vessels less than 300 gross tons entering the 7th Coast Guard District, and all vessels carrying certain dangerous cargoes (CDCs) are required to submit NOAs.

This rulemaking will expand the applicability of NOADs to include all foreign commercial vessels, regardless of tonnage, more U.S. commercial vessels, and all U.S. commercial vessels arriving from a foreign port.

From the Coast Guard's database, we believe that we have an accurate estimate of the number of vessels greater than 300 gross tons submitting NOAs and the approximate number of voyages they make. These vessels are currently required to submit NOAs and will be required to submit NOAs/NODs through a mandatory submission method. Approximately 20,000 vessels greater than 300 gross tons, with foreign vessels comprising nearly 17,000 of this amount, and U.S. vessels comprising the balance, are currently affected. We, however cannot at this time provide an estimate of the number of vessels less than 300 gross tons that will be affected by this rulemaking or the number of U.S. vessels coming from a foreign port since these vessels are not required to report nor do we have an effective means to capture this

information. We will determine the affected population and include that information in the detailed regulatory analysis.

For the AIS portion of this rulemaking, we expect vessel owners to incur costs for the installation of AIS on board vessels that do not currently have AIS. The vessel groups affected are all commercial self-propelled vessels 65 feet or greater (including fishing and passenger vessels), towing vessels 26 feet or greater and over 600 horsepower, vessels carrying 50 or more passengers or certain dangerous cargoes; dredges and certain high speed passenger craft; operating on U.S. navigable waters. We estimate that the number of vessels affected by the AIS portion of this rulemaking is approximately 17,400 foreign and domestic vessels. The NOA and AIS populations will be reconciled in the regulatory analysis.

We anticipate unquantified benefits will be associated with both portions of this rulemaking. We anticipate that quantified benefits derived from marine casualty cases will be associated with the AIS portion of this rulemaking. A detailed benefit analysis will be included in the regulatory analysis.

Risks:

In terms of threat, vulnerability, and consequence, there are few more valuable and vulnerable targets for terrorist attack than the U.S. Maritime Transportation System (MTS). Considering the economic utility of U.S. ports, waterways, and coastal approaches, it is clear that a terrorist incident against our MTS would have a disastrous impact on global shipping, international trade, and the world economy. This rulemaking is instrumental in expansion of MDA and consequently instrumental in reduction of those risks posed by terrorist actions against the MTS.

Timetable:

Action	Date	FR Cite
Interim Final Rule	02/00/06	

Regulatory Flexibility Analysis Required:

Undetermined

Government Levels Affected:

None

Additional Information:

With regard to the legal deadline, we have indicated in past notices and rulemaking documents, and it remains the case, that we have worked to



MAR - 7 2006

UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE 1315 East-West Highway Silver Spring, Maryland 20910

THE DIRECTOR

D.O. McIsaac, Ph.D. Executive Director Pacific Fishery Management Council 7700 NE Ambassador Place Portland, Oregon 97220-1384 MAR 0 8 2006

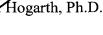
Dear Dr. McIsaac:

Thank you for your letter relaying the recommendations of the Pacific Fishery Management Council regarding the use and distribution of Vessel Monitoring System (VMS) funding. As you indicated, we are developing a spending plan and policy for distribution of the funding appropriated in FY 2006. It is important that this funding be obligated before the end of FY 2006; as you know, congressional appropriations are provided each year for the support and funding of initiatives and services within the fiscal year.

Your letter suggested several possibilities for how the funds may be distributed. There are also a number of possible parameters for determining who will be eligible for the funds. Our staff is working to ensure the development and implementation of an equitable, efficient, and effective plan. We intend to develop a system that not only ensures the most effective use and distribution of the current funds in a fair and effective manner, but that produces a credible model to perpetuate and support the appropriation of ongoing funding for this purpose in future years. Given that Congress has recognized the importance of the VMS program, it is our hope that funding levels for the program will remain constant and that we will be able to continue to fund the purchase of VMS units as additional fisheries are brought online.

Our staff has been notified of your recommendations, and they will consider your concerns as we finalize this process.

Sincerely,



<u>Automated</u> <u>Identification System</u>

LCDR Bob Hendrickson
USCG Liaison Officer, NOAA Fisheries





What is AIS?

- Part of IMO GMDSS System
- Primarily for safety of life at sea MDA benefit
- VHF-FM Open Communications Protocol
- Self-reports every 2-10 seconds every 3 minutes when anchored/DIW
- Required by Congress under MTSA 2002
- All commercial vessels 65 feet or greater *





AIS Class A



AIS "Report"

- Position with accuracy indication
- Position time stamp
- Course over ground
- Speed over ground
- Heading
- Navigational status (manually entered)
- Rate of turn *







Home > News & Opinion > Local / Regional News > ■ RSS Feed

Massive freighter ends fishermen's bountiful excursion

By **Brian Ballou** Monday, May 24, 2004

E-mail article





Until the time a mammoth 700-foot freighter sliced their puny boat in half Saturday morning, three Connecticut fishermen were grabbing quite a haul of monkfish off the coast of New York.

``It was looking pretty good for us," Geal Roderick, 29, of Mystic, Conn., said yesterday. He and Benjamin Schober...

Causes of Vessel Loss While Underway & Maneuvering

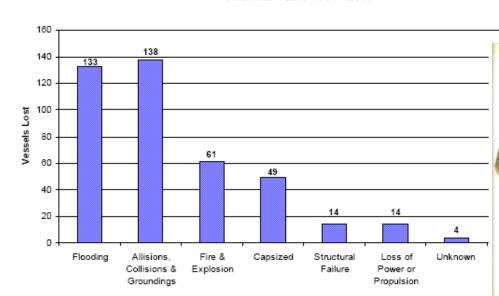
Calendar Years 1994 - 2000



March 2, 2004

Formal investigation of Lee III incident begins

The Coast Guard wass scheduled to convene a formal



Vessels lost while Underway & Maneuvering = 423 Vessels lost from all operations = 907



U.S. Maritime Security

- Coast Guard is the lead federal agency for U.S. Maritime Security
- Maritime Transportation Security Act (MTSA) Nov 2002
 - AIS carriage
 - Direction to CG on carrying out Maritime and Homeland Security



"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."



Why Not VMS?







AIS and VMS Comparison

- IMO System
- For SOLAS & MDA
- Open Comms Protocol
- Self-reports every2-10 seconds (3 mins < 3kts)
- Mandated by Congress under MTSA 2002
- Most commercial vessels19,000 US60,000 World-wide
- VHF-FM

- US System
- For fisheries management & enforcement
- Closed Comms Protocol -Proprietary
- Interrogated every 10-60 minutes
- Required by FMCs for various FMPs; strict data usage rules under MSA
- Some Fishing vessels2000 Atlantic1500 Pacific
- Satellite





Who, When, How Much?

- All commercial vessels 65 feet or greater, certain other "small entities"
- "Reasonable time"
- **\$2,500 \$7,000**







United States Coast Guard Office of Navigation Systems Office of Law Enforcement

jarroyo@comdt.uscg.mil I-202-267-6277 www.navcen.uscg.gov

U.S. Coast Guard Office of Navigation Systems 2100 2nd St. SW Washington, DC 20953

Robert.Hendrickson@noaa.gov I-301-427-2300 www.noaa.gov

NOAA Fisheries
Office for Law Enforcement
8484 Georgia Ave., Suite 415
Silver Spring, MD 20910







AIS Timeline

IMO MSC 74 (69) Performance

SOLAS V/19.2.4 IMO
Diplomatic
Conference

WRC'97 AIS1 Ch.87B AIS2 Ch.88B

ITU-R M.1371-1 Technical IEC 61993-2 Testing & Certification

1990-----1994-----1997----1998----1999----2000----2001----2002---2003

OPA '90

> ADSSE ITU-R M.825-3

National Dialog Group

105th Congress

Marine Board Ports & Waterways Study

VTS LMR Public Meeting FCC Notice DA-02-1362

MTSA

- Interim
- Final

Binary Messages and Functional Identifiers

- AIS allows the transfer of Binary Messages
 - a means for communication for external applications
 - General broadcast
 - Addressed to specific MMSI
 - Results in a Binary Acknowledgement to confirm that the addressed binary message was received
- All binary messages are composed by
 - an external application on the transmission side
 - can only be used by the same external application connected to the AIS on the receiver side.

AIS Rules...

- Marine Transportation Security Act: 11/25/02
- Safety of Life at Sea Convention (SOLAS), 12/09/02 (amended)
- AIS Interim Rule: 07/01/03
 - Implements SOLAS (int'l) & MTSA (domestic) in VTS areas
- AIS Final Rule: 10/22/03, effective 11/24/03, deadline: 12/31/04
 - Deferred requirements on F/V and small passenger vessels
 - Letter to Congress re: unreasonableness & costs
- Request for Comments: 10 questions on AIS Expansion
 - 3 Public Meetings: New Orleans, New Bedford, Seattle
 - Comment period closed 1/9/04, 180+ commenters
- Additional USCG regulations forthcoming...2006

Maritime Transportation Security Act

46 U.S.C. 70114 - Automatic identification system

On the navigable waters of the United States, each...

- Self-propelled commercial vessel of at least 65 feet,
- ■Towing vessel of more than 26 feet and 600 hp,
- Passenger vessels as determined by the USCG,
- Any other vessel deemed necessary for the safe navigation of the vessel.

shall be equipped with and operate an AIS under regulations prescribed by the USCG.

AIS Carriage Regulations 33 CFR 164.46

The following must have a properly installed, operational, type-approved AIS

- On international voyage:
 - ✓ Tankers, Passenger \geq 150 GT, all others \geq 300 GT
 - □ IAW SOLAS Regulation V/19.2.4
 - ✓ Self-propelled commercial vessels \geq 65 ft.
 - □ Except fishing and small passenger vessels (> 150 passengers)
- Within a VTS area:
 - ✓ Self-propelled commercial vessel 65+ feet
 - ☐ Except fishing & small passengers vessels
 - ✓ Towing vessel \geq 26 ft. and \geq 600 hp
 - ✓ Vessel certificated to carry 150+ passengers

AIS Timeline

Marine Transportation Security Act: 11/25/02

Safety of Life at Sea Convention (SOLAS), 12/09/02 (amended)

AIS Interim Rule: 07/01/03

Implements SOLAS (int'l) & MTSA (domestic) in VTS areas

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Deferred requirements on F/V and small passenger vessels

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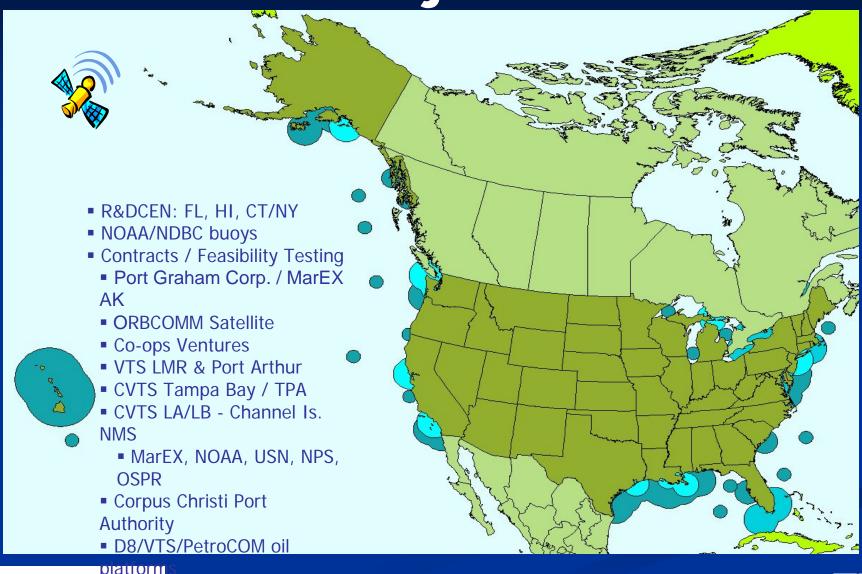
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Additional USCG regulations forthcoming...



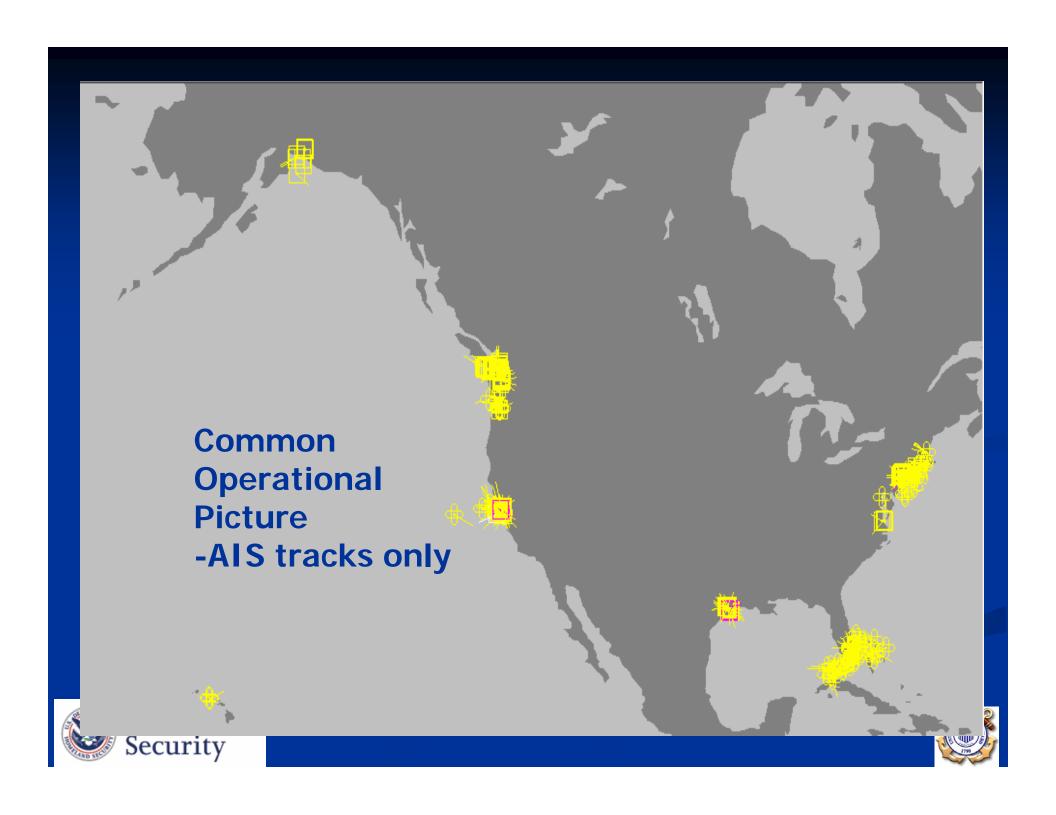


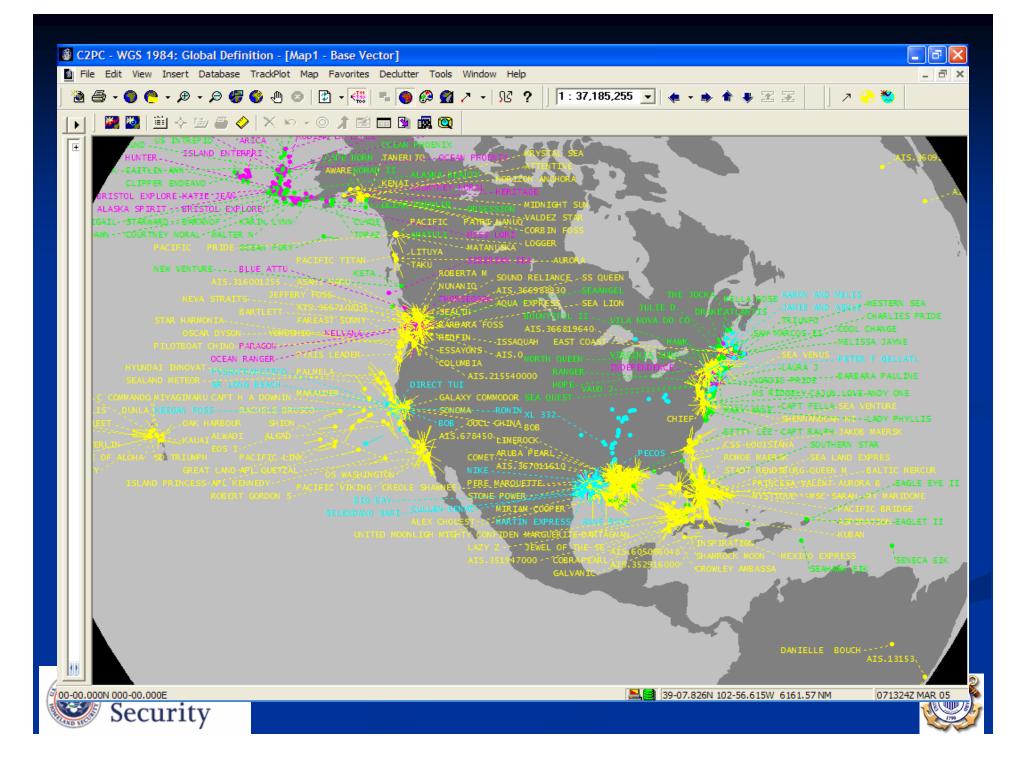
National AIS Projects











GROUNDFISH ADVISORY SUBPANEL REPORT ON U.S. COAST GUARD REPORT ON IMPLEMENTATION OF THE AUTOMATIC IDENTIFICATION AND VESSEL MONITORING SYSTEMS (AIS AND VMS)

The Groundfish Advisory Subpanel (GAP) listened to the presentation by LCDR Bob Hendrickson on the implementation of AIS. The GAP recognizes that it appears the Department of Homeland Security will be moving forward with the AIS system under the guise of safety, and claim that it will eventually be implemented on every vessel in U.S. waters. The GAP wonders how they intend to improve safety with this system when they cannot, or will not implement a basic operator's license for watercraft. Safety can be achieved through means other than expensive, big brother monitoring systems which will be forced upon sectors which are arguably already over regulated and over policed.

The GAP has serious concerns about the increasing lack of privacy and notes that any privacy between fishers afforded by VMS will be lost with AIS, and that the difference between profit and loss for some fishers will be marginalized when the competition knows when you are fishing, where you are fishing, and where you are heading.

It appears the application of AIS to 65-foot/50-plus-passenger and other categories of vessels receiving an initial deferment is settled. The GAP wishes to see any further oversight by the government be applied to every vessel left at the same time rather than, and it IS, "picking on" the easiest targets.

The GAP continues to request that additional implementation of VMS/AIS be paid for by the Federal government as it is obvious at this Council session that it will not be any easier in the near future for a fisher to pay his bills.

PFMC 04/06/06