# United States Coast Guard Office of Navigation Systems



"We Help Mariners Get There"

Jorge Arroyo GMDSS Task Force Meeting September 26<sup>th</sup>, 2013

## Pending NAV Rulemakings

- Expansion of AIS Carriage to all Navigable Waters
  - ▶ NPRM published 12/09/08; comment period closed 4/15/09
  - ▶ Latest Regulatory Agenda, prognosticates a 12/13 publication
  - ► The rule has yet to go to OMB/OIRA for its 90-day review







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#### NAVIGATION CENTER

The Navigation Center of Excellence

U.S. Department of Homeland Security

UNITED STATES COAST GUARD



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**Automatic Identification** 

#### System (AIS)

- What is AIS?
- How AIS Works
- Types of AIS
- AIS Messages
- Class A Position Report
- Class A Static & Voyage Data
- Class B Reports
- Nationwide AlS (NAIS)
- Carriage Requirements
- Reference Information
- AIS Encoding Guide & LOCODES
- Frequently Asked Questions

#### **Primary Mission Areas:**

- Nationwide DGPS
- Long Range Identification and Tracking
- Nationwide AIS (NAIS)
- Local Notice to Mariners
- . Light Lists
- Civil GPS Service Interface Committee
- Global Positioning System
- . Electronic Navigation & Charting
- . LORAN C (archive)

#### Services & Reporting:

Receive Free LNM Updates

#### AIS FREQUENTLY ASKED QUESTIONS

- 1. What is AIS?
- 2. How do I program my AIS?
- 3. What is the AIS rule and are there alternatives to the rule for small businesses?
- 4. How much does an AIS cost?
- 5. How does AIS help to increase security (and what is NAIS)?
- 6. When must AIS be in operation?
- 7. Does the installation of the AIS require additional equipment in order for the AIS to operate properly?
- 8. Will it be necessary to have electronic navigational charts for use with the AIS?
- 9. Are fishing vessels subject to AIS carriage, and, is onboard Vessel Monitoring System (VMS) an acceptable substitute for the AJS?
- 10. Why have some AIS units stopped broadcasting valid position reports?
- 11. Why am I unable to see an AIS vessels' name or other static information (dimensions, call sign, etc.)?
- 12. Why do I sometimes see more than one vessel with the same MMSI or vessel name (i.e. NAUT)?
- 13. I just purchased and installed an AIS Class B, will AIS Class A user 'see' me?
- 14. Do AIS Class B devices meet current USCG AIS carriage requirements?
- 15. Is the USCG considering expanding AIS carriage to other vessels or outside of VTS areas?
- How can I get a copy of an AIS presentation I saw (or heard about it) that was given at...
- 17. Where can I get AIS data?
- 18. What is a MMSI and where can I get one for my AIS?
- 19. What is AIS Channel Management?
- 20. Can I use my AIS in an emergency or for distress messaging?
- 21. Have an AIS guestion not answered here?

 What is AIS? Per 47 CFR §80.5, AIS is a maritime navigation safety communications system standardized by the International Telecommunication Union (ITU) and adopted by the International Maritime Organization (IMO) that provides vessel information, including the vessel's identity, type, position, course, speed, navigational status and other safety-related information automatically to appropriately equipped shore stations, other ships, and aircraft; receives automatically such information from similarly fitted ships; monitors and tracks ships; and exchanges data with shore-based facilities. Read more on what it is, how it works, what it broadcasts,





















15. Is the USCG considering expanding AIS carriage to other vessels or outside of VTS areas? Yes. On December 16th, 2008 the Coast Guard published a proposed rule (73 FR 78295) to amend the current AIS regulations, and to expand AIS requirements-beyond Vessel Traffic Service (VTS) areas to all U.S. navigable waters and require AIS carriage for additional commercial vessels, including commercial vessels carrying 50 or more passengers, fishing vessels 65 feet or greater, hi-speed passenger vessels, dredges and floating plants operating in or near channels or fairways, and vessels carrying or moving certain dangerous cargo. See a breakdown of vessels affected. We invite you to visit www.regulations.gov [Search: USCG-2005-21869] to view the public submissions to our proposal and all our supporting documents, such as our regulatory and environmental analysis. For the current status of the rule, see the latest Semi-Annual Unified Agenda and Regulatory Plan at www.reginfo.gov [Search: Agenda: 1625-AA99].

- 16. How can I get a copy of an AIS presentation I saw (or heard about it) that was given at...You can download recent presentations given by Coast Guard Office of Navigation Systems personnel here:
  - Arroyo@IALA VTS Symposium on (2012 09 11) (PDF, 5,243KB)
  - Winkler@RTCM AIS Vessel Identification (2012 09 25) (PDF, 518KB)
  - Arroyo@RTCM\_Conference\_RegUpdate\_on\_(2012\_09\_24\_2) (PDF, 5,013KB)
  - Arroyo@RTCM\_Conference\_FutureAIS\_on\_(2012\_09\_26) (PDF, 3,601KB)
  - Arroyo@Mid\_Atlantic\_Waterways\_Conference\_(2012-4-20) (PDF, 6MB)
  - Arroyo@USACE IENCP Meeting (2012-04-19) (PDF, 7.74MB)
  - Winkler@GMDSS\_TF\_(2012-01-11)\_AIS\_Data\_Quality (PDF, 462KB) and USCG\_EGIS\_AVIS\_Screenshots (PDF, 2.17MB)
  - Arroyo@eNavigation11 (2011-11-29) (PDF, 5.13MB)
  - Arroyo@IBEX (2011-10-17) (PDF, 7.62MB)
  - NOAD AIS Public Meeting in Washington, DC (05MAR09) and Seattle, WA (25MAR09) (PDF, 1.06MB) Washington, DC audio (MP3, 12MB) Seattle, WA audio (MP3, 7.83MB)
  - Arroyo@NAVSAC(2009) (PDF, 565.87KB) (Transcript and NAVSAC Resolution re: AIS Class B carriage) (PDF, 267.96 KB)

## Pending NAV Rulemakings

- Implementation of SOLAS Chp. V NAV Equipment
  - ► In development: conducting a regulatory (economical) analysis
- ► Carriage of Electronic Chart Systems
  - ► MTSA'04 mirrors the same population as AIS carriage
  - ▶ We Intend to adopt RTCM 10900 standard
- ► FR Notice on ECDIS carriage forthcoming

Type of AIS AtoN (Type of code in AIS msg. 21)	Symbol (Physical)	Symbol (Virtual)	Description
Beacon, Cardinal S (11) Floating, Cardinal Mark S (22)	$\stackrel{\nabla}{\diamondsuit}$	\ <del>\</del>	Physical: Solid diamond with 2 triangles, one above the other, point downward, on the top of diamond (Shown with chart symbol. Chart symbol not required for radar.) Virtual: Dotted diamond with cross hair centred at reported position and 2 triangles, one above the other, points downward, on the top of diamond
Beacon, Cardinal W (12) Floating, Cardinal Mark W (23)	$\stackrel{X}{\diamondsuit}$	X+>	Physical: Solid diamond with 2 triangles, one above the other, point to point, on the top of diamond (Shown with chart symbol. Chart symbol not required for radar.) Virtual: Dotted diamond with cross hair centred at reported position and 2 triangles, one above the other, point to point, on the top of diamond
Beacon, Port hand (13) Beacon, Preferred Channel Port hand (15) Port hand Mark (24) Preferred Channel Port hand (26)	$\Diamond$	•	Physical: Solid diamond with rectangle, short side up, on the top of diamond (Shown with chart symbol. Chart symbol not required for radar.) Virtual: Dotted diamond with cross hair centred at reported position and rectangle, short side up, on the top of diamond
Beacon, Starboard hand (14) Beacon, Preferred Channel Starboard hand (16) Starboard hand Mark (25) Preferred Channel Starboard hand (27)	$\Diamond$	<b>≪</b> ÷>	Physical: Solid diamond with triangle, points upward, on the top of diamond (Shown with chart symbol. Chart symbol not required for radar.) Virtual: Dotted diamond with cross hair centred at reported position and triangle, points upward, on the top of diamond
Beacon, Isolated danger (17) Isolated danger (28) Beacon, Safe	<b>∞</b>	∞(÷)	Physical: Solid diamond with 2 circles, one above the other, on the top of diamond (Shown with chart symbol. Chart symbol not required for radar.) Virtual: Dotted diamond with cross hair centred at reported position and 2 circles, one above the other, on the top of diamond

#### PORTRAYAL OF AIS AtoN INDICATING OFF POSITION OR FAILURE

Type of failure condition	Symbol (Physical)	Description
AIS AtoN indicating to be in Off Position	Off Pos	Failure is indicated using yellow caution colour for the basic diamond part of the symbol with cross hair centred at reported position and for text "Off Pos" in top of the physical AIS AtoN.
		Note: Physical AIS AtoN indicates realtime EPFS position of drifting AtoN (obstacle).
AIS AtoN indicating Lights failure	Unlit	Failure is indicated using yellow caution colour with text "Unlit" in top of the physical AIS AtoN.
AIS AtoN indicating Racon failure	Racon err	Failure is indicated using yellow caution colour with text "Racon err" in top of the physical AIS AtoN

Table 4.3

PORTRAYAL OF AIS AtoN INDICATING THE ABSENCE OF A CHARTED PHYSICAL AtoN

Type of failure condition	Symbol (Virtual)	Description
AIS AtoN indicating the absence of a charted physical AtoN	Missing	The absence of a charted AtoN is indicated using yellow caution colour for both the basic diamond part of the symbol and for text "Missing". The basic diamond part is always empty without symbol of the type of the AtoN.  Note: This case is communicated as a combined state of "virtual" and "off position". Type of absent AtoN can be
		determined be the underlying charted object, or selecting the Virtual AIS AtoN Object.

## United States Coast Guard Office of Navigation System





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