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# United States Coast Guard Waterways Management



**Providing navigation  
safety information for  
America's waterways**

**Jorge Arroyo  
Office of Navigation Systems  
U.S. Coast Guard  
Washington, DC**

**Radio Technical Commission  
for Maritime Services  
San Diego, CA  
May 17<sup>th</sup>, 2010**



**Homeland  
Security**



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# Navigation Systems Regulatory Efforts

- **33 CFR 83** – Inland Navigation Rules codification
  - Became effective today, May 17<sup>th</sup>
- **33 CFR 164** – Navigation Equipment
  - **SOLAS V & CGMT'04(ECS)**
  - Under development
- **33 CFR 164.46** – AIS Carriage
  - Long history



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**DEPARTMENT OF HOMELAND SECURITY**

**Coast Guard**

**33 CFR Part 83**

[Docket No. USCG-2009-0948]

RIN 1625-AB43

**Inland Navigation Rules**

**AGENCY:** Coast Guard, DHS.

**ACTION:** Final rule.

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**SUMMARY:** By this final rule, the Coast Guard is placing the Inland Navigation Rules into the Code of Federal Regulations. This move is in accordance with the Coast Guard and Maritime Transportation Act of 2004, which repeals the Inland Navigation Rules as of the effective date of these regulations. Future updates of the Inland Navigation Rules will be accomplished through rulemaking rather than legislation.

**DATES:** This final rule is effective May 17, 2010.

**ADDRESSES:** Documents mentioned in this preamble as being available in the

you have questions on this rule, call or e-mail Lieutenant Scott Medeiros, Office of Vessel Activities (CG-54133), telephone (202) 372-1565, e-mail *Scott.R.Medeiros@uscg.mil*. If you have questions on viewing the docket, call Renee V. Wright, Program Manager, Docket Operations, telephone (202) 366-9826.

**SUPPLEMENTARY INFORMATION:**

**Table of Contents for Preamble**

I. Abbreviations  
 II. Basis and Purpose  
 III. Discussion of Rule  
 IV. Regulatory Analyses

A. Administrative Procedure Act  
 B. Regulatory Planning and Review (Executive Order 12866)  
 C. Small Entities  
 D. Assistance for Small Entities  
 E. Collection of Information  
 F. Federalism  
 G. Unfunded Mandates Reform Act  
 H. Taking of Private Property  
 I. Civil Justice Reform  
 J. Protection of Children  
 K. Indian Tribal Governments  
 L. Energy Effects  
 M. Technical Standards  
 N. Environment

**I. Abbreviations**

DHS Department of Homeland Security  
 CFR Code of Federal Regulations  
 NPRM Notice of proposed rulemaking

- Conduct of vessels in restricted visibility; and
- Conduct of vessels in sight of each other.

These regulations are commonly known as the "inland rules of the road." Congress also amended Section 3 of the Inland Navigation Rules Act of 1980 to grant the Secretary of Homeland Security authority to issue inland navigation regulations. In doing so, Congress specified that repeal of Section 2 (the inland navigation rules then in effect) would not be effective until the effective date of regulations on the inland navigation rules. This guaranteed there would be no gap in application of the inland navigation rules between being removed from the United States Code and being added to the Code of Federal Regulations (CFR).

The Secretary of Homeland Security has delegated authority to develop and enforce navigation safety regulations to the Commandant of the Coast Guard through Department of Homeland Security Delegation 0170.1, Delegation to the Commandant of the Coast Guard. The Coast Guard has decided to use the authority granted by Congress and delegated by the Secretary to move the inland navigation rules to a new Part 83 of Title 33, Code of Federal Regulations.

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## **SOLAS/ECDIS/ECS rules...**

- **SOLAS Chp. V changes took effect 2000**
- **CG&MT of 2002 mandates ECS in US**
  - **Should integrate AIS**
- **IMO mandate ECDIS on other ships**
- **USCG rulemaking in development**
  - **What ECS to mandate & for what?**
  - **ECDIS/ECS don't currently integrate AIS**



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#### Documents Developed by RTCM Special Committee 109 on Electronic Charts

RTCM 10900.4, RTCM Standard for Electronic Chart Systems (ECS), December 8, 2008

[\(Show Description\)](#)

RTCM 10900.3 (RTCM Paper 100-2002/SC109-STD), Standard for Electronic Chart Systems (ECS), Version 3.0

[\(Hide Description\)](#)

This standard specifies the RTCM recommended minimum requirements for Electronic Chart Systems (ECS). In order to better define requirements applicable to various classes of vessels a variety of areas, certain parameters herein contain more than a single "standard" option. In effect, three very general classes of vessels have been identified: 'I' represents larger vessels; 'II' smaller vessels primarily operating in coastal waters or inland waterways; and 'III' represents vessels not covered in I or II. In addition, some special requirements are identified from the IMO Performance Standards for ECDIS for use of a class I ECS as a back-up arrangement for ECDIS. An annotation is made in the left margin to indicate which class(es) of vessel(s) is being ref Users, manufacturers, and regulatory authorities thus have a means of differentiating between the needs of various vessels.

**Will RTCM amend their ECS standard to fully integrate AIS?**

# AIS Rulemaking [Changes in **Bold-type**]

- ✓ 10/23/03 - current AIS requirement (33 CFR 164.46)
- ✓ 07/01/03-01/09/04 sought AIS expansion comment
- ✓ 10/31/05 - Notice expansion of AIS to **all** waters
- ✓ 12/16/08 - NPRM; 04/15/09, comment deadline
- Could effect 17,442 vessels/14,506 small biz's, i.e.
  - Commercial self-propelled vessels of  $\geq 65$  feet
    - **No exclusions**
  - Towing vessels  $\geq 26$  feet and  $> 600$  hp
  - Vessels with  $\geq 50$  passengers (vice 150 for hire)
  - **Hi-Speed vessels with  $\geq 12$  passengers for hire**
  - **Certain dredges & floating plants, &**
  - **Vessel moving certain dangerous cargoes**

Estimated Expanded AIS Population	
<b>Ships <math>\geq 65</math>ft</b>	<b>2,973</b>
Freight Ship	298
Industrial Ship	748
MODU	210
OSV	553
Research Vessel	97
School Ship	19
Tank Ship	122
Unclassified	385
Unknown	541
<b>Fishing <math>\geq 65</math>ft</b>	<b>5,520</b>
Documented	4,571
Undocumented (est.)	949
<b>Towing <math>\geq 26</math>ft &amp; <math>\geq 600</math>hp</b>	<b>4,560</b>
<b>Passenger</b>	<b>3,235</b>
$\geq 65$ ft	2,167
$<65$ ' but $\geq 50$ pax	1,062
$>30$ kts & $>12$ pax for hire	6
<b>Dredges</b>	<b>35</b>
<b>Total (U.S.)</b>	<b>16,323</b>
<b>Foreign Flag <math>\geq 65</math>ft</b>	<b>1,119</b>
<b>Total (All)</b>	<b>17,442</b>

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# AIS Comments...

- **Public Meetings**

- **Washington, DC – March 5<sup>th</sup>, 2009**

- **30+ attendees, 11 commenters**

- **Seattle, WA – March 25<sup>th</sup>, 2009**

- **30+ attendees, 12 commenters**

- **Comment period closed: April 15<sup>th</sup>, 2009**

- **Public Submissions**

- **80+ submitters, 70+ regarding AIS**



## View Rule

[Printer-Friendly Version](#) [Download RIN Data in XML](#)

DHS/USCG

RIN: 1625-AA99

Publication ID: Spring 2010

**Title:** Vessel Requirements for Notices of Arrival and Departure, and Automatic Identification System (USCG-2005-21869)

**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 a notice of departure, and mandate electronic submission of NOAD notices to the National Vessel Movement Center. The AIS portion of this rulemaking will expand current AIS carriage requirements for the population identified in the Marine Transportation Security Act (MTSA) of 2002.

**Agency:** Department of Homeland Security(DHS)

**Priority:** Other Significant

**RIN Status:** Previously published in the Unified Agenda

**Agenda Stage of Rulemaking:** Long-Term Actions

**Major:** No

**Unfunded Mandates:** No

**CFR Citation:** 33 CFR 160; 33 CFR 161; 33 CFR 164; 33 CFR 165 (To search for a specific CFR, visit the [Code of Federal Regulations.](#))

**Legal Authority:** [33 USC 1223](#); [33 USC 1225](#); [33 USC 1231](#); [46 USC 3716](#); [46 USC 8502 and ch 701](#); sec 102 of PL 107-295; EO 1223; ...

**Legal Deadline:** None

**Timetable:**

Action	Date	FR Cite
NPRM	12/16/2008	<a href="#">73 FR 76295</a>
Notice of Public Meeting	01/21/2009	<a href="#">74 FR 3534</a>
Notice of Second Public Meeting	03/02/2009	<a href="#">74 FR 9071</a>
NPRM Comment Period End	04/15/2009	
Notice of Second Public Meeting Comment Period End	04/15/2009	
Final Rule	To Be Determined	

**Additional Information:** Legal Deadline: 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 coordinate implementation of AIS MTSA requirements with the development of our ability to take advantage of AIS data (68 FR 39355-56 and 39370, July 1, 2003).

**Regulatory Flexibility Analysis Required:** Undetermined

**Government Levels Affected:** None

**Small Entities Affected:** Businesses

**Federalism:** No

**Included in the Regulatory Plan:** No

**RIN Information URL:** [www.regulations.gov](http://www.regulations.gov)

**Public Comment URL:** [www.regulations.gov](http://www.regulations.gov)



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# AIS Rule Challenges...

- **Class B – which, who, where?**
  - **Do we wait for Class B/SO?**
- **Access to AIS / AIS Portrayal**
  - **IMO radar require display of AIS**
  - **RTCM radar & ECDIS/ECS don't**
  - **Class B display optional – what to do?**
- **Application Specific Messages (ASM)**
  - **Do we require their use & portrayal**
  - **Do we wait for IMO requirement/adoption?**

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## Docket Folder Summary

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### Vessel Requirements for Notices of Arrival and Departure, and Automatic Identification System

Docket ID: USCG-2005-21869 Agency: USCG

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Document Type:  Proposed Rules (0)  Notices (2)  Supporting & Related Materials  
 Rules (1)  Other  Public Submissions (129)

23 Items in the Docket Folder Records Per Page: 10

Title	Document Type	Submitter Name	Organization	ID	Posted Date	View As...
<a href="#">Public Meeting - Seattle, WA - Summary of Comments from 25 March 2009 Meeting</a>	SUPPORTING & RELATED MATERIALS			USCG-2005-21869-0107.1	01/19/10	
<a href="#">Public Meeting - Seattle, WA - Summary of Comments from 25 March 2009 Meeting</a>	SUPPORTING & RELATED MATERIALS		U.S. DHS/CG	USCG-2005-21869-0107	01/19/10	
<a href="#">Navigation Safety Advisory Council (NAVSAC), May 2009 Meeting: Task Statement and Resolution Regarding Proposed AIS Class B Carriage</a>	SUPPORTING & RELATED MATERIALS		U.S. DHS/CG	USCG-2005-21869-0106	12/28/09	
<a href="#">Public Meeting-- Seattle, WA--Link to Audio Recording and List of Attendees</a>	SUPPORTING & RELATED MATERIALS		U.S. DHS/CG	USCG-2005-21869-0034.1	04/02/09	
<a href="#">Public Meeting-- Seattle, WA--Link to Audio Recording and List of Attendees</a>	SUPPORTING & RELATED MATERIALS		U.S. DHS/CG	USCG-2005-21869-0034.1	04/02/09	



TASK STATEMENT

Task # 09-04

I. TASK TITLE

AIS Class B carriage

II. BACKGROUND

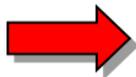
On December 16th, 2008 (73 FR 78295), the Coast Guard published and solicited comments on a proposed rule (NPRM) that would expand the applicability of AIS Class A requirements beyond Vessel Traffic Service areas to all U.S. navigable waters, require AIS carriage by most commercial vessel, and, clarify AIS operating requirements.

Parallel to this rulemaking and through the diligent work of various standards bodies, there are now two classes of AIS devices—AIS Class A & B . AIS Class B devices differ slightly in features and nature of design than Class B, which reduces their cost (on average half the cost of the current AIS Class A devices) but also impacts their performance. They report at a fixed rate (30 seconds) versus the AIS Class A variable rate (2-10 seconds dependent on speed and course change). They consume less power but also report at lower power (2 watts versus 12 watts of AIS Class A), thus impacting their broadcast range. Despite these design limitations, AIS Class B devices offer similar AIS benefits. They broadcast and receive virtually the same vessel identification and information. They have the same ability to see targets that radar may not always show (around the bend, in sea clutter, or during foul weather). For these reasons and after conducting our own AIS Class B testing, we have concluded that AIS Class B devices would enhance navigation safety and assist in collision avoidance as do Class A devices. Therefore, the NPRM acknowledges them and permits their use, however, it cautions users (via a note in rule) that they may not be the best alternative for vessels that are highly maneuverable, travel at high speed, or routinely transit congested waters.

Notwithstanding, the NPRM also sought comment on whether AIS Class B devices should be specifically limited to certain vessels or waterways, or whether this decision should be best left to the master or owner's discretion. Overwhelming comments received were pro-AIS Class B, but, many commenters requested that we provide specific regulatory language on there usage.

III. PROBLEM STATEMENT

Should the use AIS Class B be spelled out in regulation or be left to the discretion of the owner/master of the vessel.



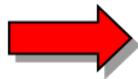
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## AIS Class B Carriage

### RESOLUTION 09-04

NAVSAC recommends that all vessels not subject to AIS carriage requirements under SOLAS Convention, but subject to domestic AIS carriage requirements as defined in the proposed rule at 73 FR 76295 [docket # USCG-2005-21869], transiting at under 14 knots in any waters, and all vessels transiting at a speed of 14 knots or more but less than 24 knots in waters specified by the USCG, e.g., non-congested waters or waters outside VTS areas, may install and use a Class B AIS unit in lieu of a Class A.

Additionally, NAVSAC recommends to the USCG that all commercial vessels transiting at a speed at or in excess of 24 knots must have a Class A AIS.



All other vessels subject to the carriage requirements must install Class A, but the USCG should consider granting waiver requests to install Class B in lieu of a Class A based on certain operating parameters.



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# AIS Rule Challenges...

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  - **IMO radar require display of AIS**
  - **RTCM radar & ECDIS/ECS don't**
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- **Application Specific Messages (ASM)**
  - **Do we require their use & portrayal**
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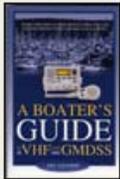


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- [Documents Developed by RTCM Special Committee 101 on Digital Selective Calling](#)
- [Documents Developed by RTCM Special Committee 104 on Global Navigation Satellite Systems \(GNSS\) Service](#)
- [Documents Developed by RTCM Special Committee 104 on GPS Reference Stations](#)
- [Documents Developed by RTCM Special Committee 109 on Electronic Charts](#)
- [Documents Developed by RTCM Special Committee 110 on Emergency Beacons](#)
- [Documents Developed by RTCM Special Committee 112 on Marine Radar](#)
- [Documents Developed by RTCM Special Committee 117 on Standards for Maritime VHF Radiotelephone Equipment Operating in High Level Electromagnetic Environments](#)
- [Documents Developed by RTCM Special Committee 119 on Maritime Survivor Locating Devices](#)
- [Documents from RTCM Annual Assembly Meetings](#)
- [Documents developed by RTCM Special Committee 123 on VHF-FM Digital Small Message Services](#)

**Will RTCM amend their standards to fully integrate AIS?**



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## AIS

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- How AIS Works
- What AIS Broadcasts
- AIS Messages
- Types of AIS
- AIS Carriage Requirements
- AIS References
- AIS Notices
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- Ask a Question or Report an AIS Problem

## Primary Mission Areas:

- Global Positioning System
- Differential GPS
- Nationwide DGPS
- LORAN C
- Inland River Vessel Movement Center
- Civil GPS Service Interface Committee
- Automatic Identification System

## 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?
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. If a fishing vessel has a Vessel Monitoring System (VMS), is that an acceptable substitute for the AIS?
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?
16. 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?



**1. 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.



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use of AIS, we advise mandated AIS users that Class B devices do not meet current international Convention for the Safety of Life at Sea (SOLAS V/19.2.4) or U.S. domestic AIS carriage requirements (33 CFR 164.46). The Coast Guard is in the process of expanding the current carriage requirements (to most self-propelled commercial vessels which navigate U.S. waters) and Class B devices will be permissible on some commercial vessels, however, not for all of them. Thus, we take this opportunity to inform prospective buyers, particularly commercial vessels that are highly maneuverable, travel at high speed, or routinely transit congested waters or in close-quarter situations with other AIS equipped vessels, that AIS Class A devices, albeit more expensive, are a better option and will meet any future requirements we may impose. [See a comparison of Class A and Class B/CS AIS.](#)



**15. Is the USCG considering expanding AIS carriage to other vessels or outside of VTS areas?** Yes. On December 16th, 2009 the Coast Guard published a proposed rule ([73 FR 78295](#)) to [amend the current AIS regulations](#), and, 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 effected](#). We invite you to visit [www.regulations.gov](http://www.regulations.gov) to view the public comments submitted on our proposal and to [register for email notifications](#) regarding future actions on this rulemaking.

**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:

- [NOAD AIS at Seattle, WA \(25MAR09\) Pubic Meeting mp3 format \(7.83MB\)](#)
- [NOAD AIS at Washington, DC \(05MAR09\) Pubic Meeting mp3 format \(12MB\)](#)
- [NOAD AIS at Washington, DC \(05MAR09\) and at Seattle, WA \(25MAR09\) \(pdf\)](#)





## AIS NOTICES

S?

### Prudent Use of AIS (USCG Safety Alert 04-10)

AIS can be invaluable, however, as with any source of navigation information **AIS should not be solely relied upon** in making navigational and collision-avoidance decisions; nor used as a substitute or alternative to radar or Global Maritime Distress Safety Systems (GMDSS). While AIS allows for transmission and exchange of pertinent navigation safety related text messages (of up to 156 characters long), **AIS users should be aware** of the current limitations regarding their use: they may not be received, recognized or acted upon by the Coast Guard or other competent authorities or maritime first-responders. That said, AIS can augment GMDSS and provides the added benefit of being 'seen' (on radar or chart displays), in addition to being 'heard' (via text messaging) by other AIS users within VHF radio range. For the similar reasons, it can effectively assist in making passing arrangement or ascertaining another vessels navigation status. However, **AIS does not relieve** the vessel of the Bridge-to-Bridge Radiotelephone regulations or of the requirements to sound whistle signals, display lights or shapes in accordance with the International or Inland Navigation Rules.

itions

an AIS Problem

has:

Further, AIS is only as good as the information it broadcasts, therefore, users must ensure it is broadcasting accurately and properly maintained. The Coast Guard has noticed that many AIS users are not doing so, some have not properly installed or programmed their AIS nor are many being maintained up-to-date. Both the [Coast Guard and International Maritime Organization have Guidelines](#) to assist AIS users in this regard, both of which we encourage you to read and follow; failure to do so could subject a person to civil penalties not to exceed \$25,000. The maximum penalty for a false distress or a hoax is ten years in prison, a \$5,000 civil fine, \$250,000 criminal fine, and restitution of Coast Guard response costs.

### USCG to Broadcast AIS data

Commencing 11 September 2008, the Tampa Bay Cooperative Vessel Traffic Service began broadcasting AIS test messages to select test participants in the area via standard AIS channels. These broadcasts—originating from MMSI 003660471—are less than ½ second in duration, and, should not impact other AIS users in the area. However, should they, please notify us via our [AIS Problem Report](#) or by calling our Navigation Information Service (NIS) watchstander at (703) 313-5900.

This is the first phase of a Coast Guard Research & Development Center project to develop, design and evaluate the most efficient means by which mariners can receive critical real-time navigation safety information through the use of AIS and its binary





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**1. 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.



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- Global Maritime Distress and Safety System
- CG Nat'l Distress System
- Digital Selective Calling
- Marine Safety Information Broadcasts
- VHF Channels & Freqs
- MF & HF Channels
- Digital Selective Calling
- Nav Pubs and Documents
- Radio Watch Requirements

**2. How do I program my AIS?** While special attention should be taken in installing an AIS (see [IMO Safety of Navigation Circular 227, GUIDELINES FOR THE INSTALLATION OF A SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEM](#)), its initial programming is relatively straightforward. All the installer or user needs to do is transpose official data from the vessel's radio station license or other official documents into the AIS; please see our [AIS Data Entry Guideline](#) for further instructions. After initial programming, users must ensure their AIS is always in effective operating condition and broadcasting accurately. Failure to do so could subject a person to civil penalties not to exceed \$25,000 (46 U.S.C. 70119). Note, each USCG type-approved AIS has an internal built-in integrity tester that mitigates the need to send TEST text messages.

**3. What is the AIS rule and are there alternatives to the rule for small businesses?** The U.S. Coast Guard has developed rules applicable to both U.S. and foreign-flag vessels that require owners and operators of most commercial vessels to install and use the AIS. The AIS rule is part of our domestic and international effort to increase the security and safety of maritime transportation. See 33 CFR parts 26, 161, 164, and 165. Current AIS regulations, 33 CFR § 164.46, became effective on November 21, 2003, and, require that all vessels denoted 33 CFR § 164.46(a) be outfitted with an USCG 'type-approved' and 'properly installed' AIS no later than December 31, 2004. [Read more](#). Note, there are no special provisions or alternatives in the AIS rules for small businesses. See [Small Entity Compliance Guide to AIS](#).

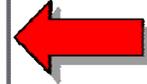
**4. How much does an AIS cost?** An USCG type-approved AIS can range in price between \$500 (AIS Class B) and \$4,000 (AIS Class A), not including installation cost which will vary considerably depending on the level of integration of the AIS with other shipboard systems (e.g. radar, speed log, rate of turn indicator, navigation positioning system, ECDIS, etc.).

**5. How does AIS help to increase security?** Although AIS is primarily and foremost a navigation tool for collision avoidance, the Coast Guard believes that the AIS will improve security also. AIS and our Nationwide AIS Project (NAIS) increases the Coast Guard's awareness of vessels in the maritime domain, especially vessels approaching U.S. ports. The AIS corroborates and provides identification and position of vessels not always possible through voice radio communication or radar alone.

**6. When must AIS be in operation?** Vessels equipped with AIS (either by mandatory carriage or voluntarily) must abide by the requirements set forth in Title 33, Code of Federal Regulations, §§ 164.46 and 161.20, and should especially ensure their AIS is in 'effective operating condition', which entails the continuous operation of AIS and the accurate input and upkeep of AIS data fields during all times that the vessel is navigating (underway or at anchor). Should continual operation of AIS compromise the safety or security of the vessel or where a security incident is imminent, the AIS may be switched off. This action and the reason for taking it must be reported to the nearest U.S. Captain of the Port or Vessel Traffic Center and recorded in the ship's logbook. The AIS should return to continuous operation as soon as the source of danger has been mitigated.

**7. Does the installation of the AIS require additional equipment in order for the AIS to operate properly?** Maybe. Most AIS do not need additional equipment (sensors) in order to operate; a few however, do require interfacing with an external global navigation positioning device (e.g. dGPS, GPS, GLONASS) in order to accurately calculate and broadcast position, course, and speed—thus requiring this equipment to properly operate. Although not required for the operation of AIS, Chapter V, Regulation 19 of the Safety of Life at Sea Convention (SOLAS), as stated in 33 CFR § 164.46(a)(2), does require certain vessels—those on international voyage—to also interface other onboard equipment (i.e. transmitting heading device, gyro, rate of turn indicator) to the AIS; domestic vessels, not on international voyage, are not currently required to do so, however are highly recommended to.

**8. Will it be necessary to have electronic navigational charts for use with the AIS?** Eventually. Section 410 of the Coast Guard and Marine Transportation Act of 2004 (P.L. 108-293) directs the Coast Guard to prescribe regulations that will require most commercial vessels "while operating on the navigable waters of the United States...be equipped with and operate an electronic chart system (ECS)"; and, that this system be integrated with AIS. A rulemaking implementing this additional requirement is in development and is expected to be published later this year (2006). Till these regulations are finalized, AIS is not required to be displayed on an ECS or other external display system; although it is highly recommended. The full benefits of AIS are only achieved when it is fully integrated and displayed on other shipboard navigation systems (e.g. Electronic Charts Data & Information System (ECDIS), ECS, Radar, Automatic Radar Plotting Aide (ARPA), Tracking Devices, personal software, etc.).



## Shipborne Automatic Identification System (AIS) Data Entry Guidance

*Dynamic Data, should be provided via external sensors and always be operational, accurate and continuously updated*

- ✓ Type of positioning source should be accurately identified, i.e. GPS, GLONASS, surveyed/manual input; this same source should provide vessel position in 1/10 sec. of latitude & longitude, the accuracy (Hi = <10 meters, Low = >10 meters) of the reported position, course over ground in 1/10 degrees, and speed over ground in 1/10 knots.
- ✓ Heading and Rate of Turn input is required of vessels of 150 GT UTC or 50k GT UTC or greater, respectively.

*Voyage Related Data should be manually inputted and updated as necessary*

- ✓ Navigation Status, should reflect the actual status of the vessel, i.e. at anchor, underway using engines, engaged in fishing, etc.
- ✓ Static Draft, should reflect the actual draft of the vessel or its maximum design draft (if the actual draft is unknown).
- ✓ Destination, should also indicate origination port and be composed in the following format: Origination Port>Destination Port; ferries may use: Origination Port or Berth<>Destination Port or Berth.
- ✓ Estimated Time of Arrival (ETA) to destination, expressed in Universal Time Coordinated (GMT).

*Static Data should be manually inputted at installation and password protected—remember your password you will need it to reinstall*

- ✓ Maritime Mobile Service Identifier (MMSI) number, call sign, and vessel name should reflect what is on the vessel's official radio station license. Names should NOT include precursors or designators, such as MV, F/V, P/C, S/V, etc. Vessel names longer than 20 characters\spaces should NOT be abbreviated or truncated; except fleet vessels, which should include the segment of its name that is unique to it, such that MYGREATFLEETWORKBOAT 12345 becomes MYGREATFLEETWO 12345; MYGREATFLEETWORKBOAT ANNE or MYGREATFLEETWORKBOAT BETH becomes MYGREATFLEETWOR ANNE or MYGREATFLEETWOR BETH. An unnamed vessel should be identified by its official or state registration number: US#122456 or US#CA1234YZ; or if unnumbered, e.g. tenders, by its parent ship name and a numerical designator that distinguishes it amongst others: PARENTSHIP NAME X (X=1, 2 ,3, ...).
- ✓ IMO Number, if one assigned, should be provided; otherwise leave blank (do NOT use vessel's official documentation number).
- ✓ Length & breadth, which are derived in reference to the position-fixing antenna location (i.e. AIS ABCD values), should reflect the overall dimensions of the vessel (in meters, not feet).
- ✓ Type of vessel, which is either selected from an AIS menu or manually inputted, shall be composed from the Table below.

*Text Data, AIS texting may be used to exchange navigation safety-related information; other texting including TEST texts are prohibited.*



Compose the Vessel Type code by selecting the appropriate 1<sup>st</sup> and 2<sup>nd</sup> (or 3<sup>rd</sup>) digits.  
The terms used are as defined in IMO SOLAS or 46 U.S.C. 2101; italicized wording denotes additional text than what is in the AIS standard (ITU-R M1371-1).

1 <sup>st</sup> digit	2 <sup>nd</sup> digit (1x)	2 <sup>nd</sup> digit (3x)	2 <sup>nd</sup> digit (5x)	3 <sup>rd</sup> digit (10x)
0 – Not available or no ship	0 – All ships of this type	0 – Fishing, <i>i.e. commercially engages in the catching, taking, or harvesting of fish</i>	0 – Pilot vessel	0 – Other type of U.S. commercial vessel not otherwise identified in this Table
1 – Reserved for future use	1 – Carrying DG ( <i>Dangerous Goods</i> ), HS ( <i>Hazardous Substances</i> ), or MP ( <i>Marine Pollutant</i> ), IMO hazard or pollutant category A X; or carrying 150 or more passengers for hire	1 – Towing, <i>i.e. commercial vessel engaged in or intending to engage in the service of pulling, pushing, or hauling along side, or any combination of pulling, pushing, or hauling along side.</i>	1 – Search and rescue vessels	1 – Vessel that moves certain dangerous cargo
2 – WIG or Seaplanes	2 – Carrying DG, HS, or MP, IMO hazard or pollutant category B Y; or carrying 50 or more passengers for hire.	2 – Engaged in towing and length of the tow exceeds 200 m (656 ft) or breadth exceeds 25 m (82 ft)	2 – Tugs or workboats not engaged in towing	2 – Scientific, Survey or Research Ships
3 – Other vessels, see right column (3x)	3 – Carrying DG, HS, or MP, IMO hazard or pollutant category C Z; or carrying 12 or more passengers for hire.	3 – Engaged in dredging or underwater operations	3 – Port or fish tenders	3 – Training or School Ships
4 – HSC or Domestic Passenger Ferry	4 – Carrying DG, HS, or MP, IMO hazard or pollutant category D OS; or carrying less than 12 passengers for hire.	4 – Engaged in diving or salvage operations	4 – Response vessels with anti-pollution facilities or equipment	4 – Fish Processing Vessels
5 – Special Craft, see right column (5x)	5 – Reserved for future use	5 – Engaged in military operations	5 – Law enforcement vessels	5 – Offshore Supply or Crew Vessels
6 – Passenger ships	6 – Reserved for future use	6 – Sailing ship or vessel ( <i>other than a Training or School Vessel</i> )	6 – Spare – for assignments to local vessels, <i>i.e. tenders associated with a parent vessel</i>	6 – Pleasure craft / Recreational motorboat ( <i>open-cabin</i> )
7 – Cargo / Freight ships	7 – Reserved for future use	7 – Pleasure craft/ <i>Recreational motorboat (closed-cabin)</i>	7 – Spare – for assignments to local vessels engaged in a regatta or marine event	7 – Houseboat
8 – Tanker(s) or tank vessels	8 – Reserved for future use	8 – Reserved for future use	8 – Medical transports (as defined in the 1949 Geneva Conventions and Addition Protocols) or other non-law enforcement public safety vessels	8 – Pleasure craft / Recreational boat ( <i>other</i> )
9 – Other types of ship, see right column (10x)	9 – No additional information	9 – Reserved for future use	9 – Ships according to RR Resolution No. 18 (Mob-83) or other public vessels	9 – Non-self-propelled vessels

Broadcasting inaccurate or outdated AIS data may subject a person to civil penalties not to exceed \$25,000 for each violation (46 USC §70119)



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# United States Coast Guard

## Waterway Management

**Thank  
You**



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