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# United States Coast Guard

## Office of Navigation Systems



**We Help Mariners Get There**

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Program Analyst  
U.S. Coast Guard Headquarters  
Washington, DC

eNavigation Conference 2011  
November 29<sup>th</sup>  
Seattle, WA

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# AIS, ECS and standards....

- ✓ AIS Regulations...
  - ✓ Why? Who? Where? When?
- ✓ ECDIS/ECS Regulations...???
- ✓ The Standards
- ✓ Questions & Answers

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# What started the USCG on AIS?

In 1990, Congress passed the Oil Pollution Act which participation in VTS mandatory and directed the USCG to seek ways to have 'dependent surveillance' of all tankers bound for Valdez, Alaska.

To that end, in 1993 the USCG developed *Automated Dependent Surveillance Shipboard Equipment (ADSSE)*, based on Digital Selective Calling (DSC) protocol.

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# Congress supports/mandates AIS!

In 1997, Congress...stated that AIS “technology should be the foundation of any future VTS system” and that it “strongly believes that this technology will significantly improve navigational safety, not just in select VTS target ports, but throughout the navigable waters of the U.S”, and, that we “continue working with stakeholders...”

H.R. Rep. No. 236, 105th Cong., 1st Sess. (1997)

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# Public Meeting to establish AIS carriage

September 1998, the USCG conducted a public meeting to solicit comments on the establishment of a new Vessel Traffic Service (VTS) in the Lower Mississippi River area and a potential Automatic Identification System (AIS) carriage requirement for certain vessels operating in the new VTS area.

The primary purpose of the meeting was to discuss which vessels should carry Automatic Identification Systems (AIS) and what performance, technical, testing, and certification standards the systems should meet.

- Ref: 63 FR 49939, Sep. 18, 1998

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# Towards an AIS-based VTS

In an effort to facilitate vessel transits, enhance good order, promote safe navigation, and improve upon existing operating measures on the waterway. The USCG proposed to establish a Vessel Traffic Service on the Lower Mississippi River and transfer certain vessel traffic management provisions on the river.

By implementing a proposed transition to VTS in a phased manner which would allow for the orderly transition from existing regulations and practices to operating procedures appropriate to an AIS-based VTS.

- Ref: 65 FR 24616, Apr. 24, 2000

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# **Actions pre-9/11 and post-9/11**

- *IMO SOLAS Regulation V/19.2.4 adopted 2000*

All ships of 300 gross tonnage or greater & passenger vessels irrespective of size on international voyage; 500 gross tonnage or greater domestically (phased implementation 2002-2008)
- *Marine Transportation & Security Act of 2002*

Commercial self-propelled vessels 65 feet or greater; towing vessels over 26 feet or greater and 600 hp or more; passenger vessels as determined by USCG; and, those the USCG deems necessary for safety.

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

- ✓ 10/23/03 - current AIS requirement (33 CFR 164.46)
- ✓ 07/01/03 - 01/09/04 - AIS expansion comment
- ✓ 10/31/05 - Notice expansion of AIS to **all** waters
  - Commercial self-propelled vessels of  $\geq 65$  feet
    - **No exclusions, all waters**
    - 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**
- ✓ 12/16/08 – NPRM, 04/15/09 comment deadline
  - ✓ 80+ submitters, 300+ comments re: AIS

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

- **Undue economic burden**
- **Don't need it...Impractical...I have VMS**
- **Will not help security...all vessel needed**
- **Not here...not needed...exempt my waterway**
- **Exempt tows <1200hp, assist towers, pax <150**
- **Waivers indefinite or >1 year**
- **Extend implementation period >7months**
- **Class B yes...on hi-speed vessels no**

## Docket Folder Summary



E-mail Alerts | Export BETA



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

**Docket ID:** USCG-2005-21869 **Agency:** USCG **RIN:** Not Assigned

+ Show Details

Search Within The Docket Folder

Search

#### Document Type

Public Submission (129)  Other  Supporting & Related Material  Notice  Rule  Proposed Rule

#### 26 Items in the Docket Folder

[View all documents](#) | Results Per Page:

Title	Document Type	Submitter Name	Organization	ID	Posted Date	View As
<a href="#">Public Meeting--Washington, DC-- Link to Audio Recording, List of Attendees, and Opening Overview Presentation</a>	Supporting & Related Material			USCG-2005-21869-0019.1	03/16/2009	<b>PDF</b>
<a href="#">January 6, 2006 Letter from Representatives of the U.S.-Flag Maritime Industry Re: Proposed NOAD AIS Regulatory Action</a>	Supporting & Related Material			USCG-2005-21869-0023	03/17/2009	<b>CRTXT</b>



## View Rule

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

DHS/USCG

RIN: 1625-AA99

Publication ID: Spring 2011

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

**Abstract:** This rulemaking proposes to 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 could 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 when a vessel is departing for a foreign port or place, and mandate electronic submission of NOAD notices to the National Vessel Movement Center. The AIS portion of this rulemaking proposes to 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:** Final Rule Stage

**Major:** No

**Unfunded Mandates:** No

**CFR Citation:** [33 CFR 160](#); [33 CFR 161](#); [33 CFR 164](#); [33 CFR 165](#)

**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	12/00/2011	



**Additional Information:** 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). The docket number for this rulemaking is USCG-2005-21869. The docket can be found at [www.regulations.gov](http://www.regulations.gov).

**Regulatory Flexibility Analysis Required:** Undetermined

**Government Levels Affected:** None

**Small Entities Affected:** Businesses

**Federalism:** No





Office of Information and Regulatory Affairs (OIRA)  
 Executive Order Submissions Under Review  
 November 29, 2011

Department of Homeland Security

**AGENCY:** DHS-OS  
**TITLE:** Guidance for Protecting Responders' Health During the First Week Following a Wide-Area Anthrax Attack.  
**STAGE:** Notice  
**RECEIVED DATE:** [03/08/2011](#)

**RIN:** [1601-ZA10](#)  
**ECONOMICALLY SIGNIFICANT:** No  
**LEGAL DEADLINE:** None

**AGENCY:** DHS-USCIS  
**TITLE:** Waiver Processing  
**STAGE:** Notice  
**RECEIVED DATE:** [11/17/2011](#)

**RIN:** [1615-ZB10](#)  
**ECONOMICALLY SIGNIFICANT:** No  
**LEGAL DEADLINE:** None

**AGENCY:** DHS-USCG  
**TITLE:** Revision to Transportation Worker Identification Credential (TWIC) Requirements for Mariners  
**STAGE:** Prerule  
**RECEIVED DATE:** [10/14/2011](#)

**RIN:** [1625-AB80](#)  
**ECONOMICALLY SIGNIFICANT:** No  
**LEGAL DEADLINE:** None

**AGENCY:** DHS-USCG  
**TITLE:** Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters  
**STAGE:** Interim Final Rule  
**RECEIVED DATE:** [11/11/2011](#)

**RIN:** [1625-AA32](#)  
**ECONOMICALLY SIGNIFICANT:** Yes  
**LEGAL DEADLINE:** None

- Rules must be reviewed by OMB/OIRA before publication
- AIS rule has yet to be reviewed
- Review usually takes less < 90 days





# NAVIGATION CENTER

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U.S. Department of Homeland Security

UNITED STATES COAST GUARD



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## AIS

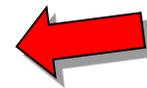
- [AIS Overview - What is AIS?](#)
- [How AIS Works](#)
- [What AIS Broadcasts](#)
- [AIS Messages](#)
- [Types of AIS](#)
- [AIS Carriage Requirements](#)
- [AIS References](#)
- [AIS Notices](#)
- [AIS Frequently Asked Questions](#)
- [Ask a Question or Report an AIS Problem](#)

## 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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## Noteworthy Amendments to U.S. Automatic Identification System (AIS) Regulations

visit [www.regulations.gov](http://www.regulations.gov) to view the entire proposal & comment on this rulemaking - USCG-2005-21869

Cite	Current Requirement	Significant Changes (Source: 73 FR 78295)
33 CFR 164.46(a)(1)	Per SOLAS Regulation V/19.2.4, all tankers, passenger vessels >150 gross tonnage, and, other vessels >300 gross tonnage, on international voyage.	Unchanged, but, adds domestic vessels >500 gross tonnage, regardless of voyage.
33 CFR 164.46(a)(1)	Self-propelled commercial vessels >65 ft on international voyage except those in innocent passage or fishing boats & small passenger vessels (<149 passengers for hire).	Unchanged
33 CFR 164.46(a)(2)	The following vessels while navigating a Vessel Traffic Service areas denoted in 33 CFR 161.12(c) must have a type-certified Class A AIS:	Expanded to all U.S. navigable waters & requires a 'properly installed, operational' USCG type-approved Class A or Class B (with caveats) AIS.
	<ul style="list-style-type: none"> <li>Commercial towing vessels &gt;26 ft &amp; &gt;600 hp,</li> </ul>	Unchanged
	<ul style="list-style-type: none"> <li>Self-propelled commercial vessels &gt;65 ft except fishing boats &amp; small passenger vessels (&lt;149 passengers), and,</li> </ul>	Revokes the exception for fishing boats & small passenger vessels.
	<ul style="list-style-type: none"> <li>Passenger vessels certified to carry &gt;150 passengers for hire.</li> </ul>	Expanded to commercial vessels carrying >50 passengers; or >12 passengers for hire in excess of 30 knots.
33 CFR 164.46(b)	<p>Cites &amp; makes applicable Vessel Bridge-to-Bridge Radiotelephone requirements regarding:</p> <ul style="list-style-type: none"> <li>- use by master or pilot (33 CFR §26.05),</li> <li>- English communication (33 CFR §26.07),</li> <li>- frequencies (33 CFR §26.04(a)), and,</li> <li>- maintaining unit in "effective operating condition" (33 CFR §26.06); and,</li> <li>- includes the accurate input &amp; upkeep of AIS data fields.</li> </ul>	<p>Spells out that 'effective operating conditions' includes the:</p> <ul style="list-style-type: none"> <li>- ability to reinitialize the AIS (i.e. knowledge of system password),</li> <li>- ability to access AIS information from conning position,</li> <li>- accurate broadcast of an official MMSI,</li> <li>- accurate input &amp; upkeep of all AIS data fields including 'system updates', and,</li> <li>- continual operation of AIS &amp; its associated devices when underway, at anchor, or moored in or near a channel/fairway; except when its use would compromise safety or security (which must be logged &amp; reported to the USCG).</li> </ul> <ul style="list-style-type: none"> <li>• AIS text messaging must be conducted in English &amp; solely to exchange or communicate navigation safety information.</li> <li>• AIS is primarily intended for use of the master or person directing the movement of the vessel, who must maintain a periodic watch for AIS information.</li> <li>• Spells out that use of AIS does not relieve the vessel of Navigation Rules duties regarding sound, lights or shapes nor Bridge-to-Bridge radiotelephone requirements.</li> </ul>
33 CFR 164.46(c)	Portable AIS are permissible, as long as only one is used for transmitting & it does not affect the proper function of on board navigation & communication equipment.	Unchanged
33 CFR 164.46(d)	AIS Pilot Plug required on vessel over 1,600 gross tons, on international voyage; easily accessible at the conning position & near an AC outlet.	Expanded to include any vessel subject to pilotage (regardless of tonnage) & limits the distance between it & an AC power outlet to no more than 3 feet.
33 CFR 164.55	Owners of AIS equipped vessels may request a yearly deviation from these rules as set forth in 33 CFR 164.55.	Deviations permissible, but, only on those vessels that operate solely within a very confined area (e.g., less than a one nautical-mile radius, shipyard, fleeting area), or on short & fixed schedules (e.g., a bank-to-bank river ferry service), or that otherwise are not likely to encounter another AIS user.



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# Electronic Charting...

- **SOLAS Chp. V changes took effect 2000**
  - **ECDIS permissible**
- **CG&MT of 2002 mandates ECS in US**
  - **Should be integrated AIS**
- **IMO mandates ECDIS**
  - **Phased implementation 2012 - 2018**

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# ECS Challenges...

- **Which, who, where?**
  - **What standard should we adopt?**
  - **Should it exactly mirror AIS population?**
- **Access to AIS / AIS Portrayal**
  - **IMO radar require display of AIS**
  - **RTCM radar & ECDIS/ECS don't**
- **Application Specific Messages (ASM)**
  - **Do we require their portrayal & use**
  - **Do we wait for IMO requirement/adoption?**



**IEC 62376**

Edition 1.0 2010-09

# **INTERNATIONAL STANDARD**

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**Maritime navigation and radiocommunication equipment and systems –  
Electronic chart system (ECS) – Operational and performance requirements,  
methods of testing and required test results**



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**RTCM 10900.5**  
RTCM Paper 163-2011-SC109-STD



**RTCM STANDARD 10900.5**  
**FOR**  
**ELECTRONIC CHART SYSTEMS**  
**(ECS)**

DEVELOPED BY  
RTCM SPECIAL COMMITTEE NO. 109

July 15, 2011

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Web Site: <http://www.rtcn.org>

## **RTCM Electronic Chart System Standard (10900.5)**

### **3 Classes:**

**A – SOLAS Back-up**

**B – ECDIS-lite**

**C – ECS Viewers**

**.5 Includes some VDR capability**

**.6 will address: AIS integration**

**-AIS Application Specific Messaging**

**-Remote MKD**



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- **Adds requirements for stations using burst transmissions (AIS-SART)**
- **Adds AIS Search and Rescue Transmitter (AIS-SART) & 'ACTIVE SART' NavStatus**
- **Adds new Message 27 for long-range reporting via a 3<sup>rd</sup> channel**
- **Harmonizes pollutant category codes in Message 5 with revised IMO MEPC codes**

**Recommendation ITU-R M.1371-4**  
(04/2010)

**Technical characteristics for an automatic identification system using time-division multiple access in the VHF maritime mobile band**



IEC 61097-14

Edition 1.0 2010-02

# INTERNATIONAL STANDARD

- **Starting to see test broadcasts**
- **As expected, they cost < Radar SART**



Global maritime distress and safety system (GMDSS) –  
Part 14: AIS search and rescue transmitter (AIS-SART) – Operational and  
performance requirements, methods of testing and required test results



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# INTERNATIONAL STANDARD

# IEC 61993-2

First edition  
2001-12

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**Maritime navigation and radiocommunication  
equipment and systems –  
Automatic identification systems (AIS) –**

**Part 2:  
Class A shipborne equipment of the universal  
automatic identification system (AIS) –  
Operational and performance requirements,  
methods of test and required test results**

- **AIS Class A 2nd edition**
- ✓ **completed, final vote soon, publication in 2012**
- ✓ **Includes GNSS output**
- ✓ **Active comparison of internal GNSS and external input, will alarm when data suspect**
- ✓ **Adds a Msg 27 - long range report**
- ✓ **Corrects DSC Msg 22 issues**



# INTERNATIONAL STANDARD

# IEC 62287-1

First edition  
2006-03

- **AIS Class B-SO (self-organizing) in final stages, publication in 2012**
- **In between Class A & B-CS, higher report rate 5-30 sec**
- **Reserves it slots as Class A**

Maritime navigation and radiocommunication  
equipment and systems –  
Class B shipborne equipment of the  
automatic identification system (AIS) –

Part 1:  
Carrier-sense time division multiple access  
(CSTDMA) techniques





IEC 62288

Edition 1.0 2008-07

# INTERNATIONAL STANDARD

- **2nd edition in the works – completion in 2012**
- **To address other AIS symbols, i.e. AIS Aircraft, Base Stations, Application Specific Messaging, etc.**

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Maritime navigation and radiocommunication equipment and systems –  
Presentation of navigation-related information on shipborne navigational  
displays – General requirements, methods of testing and required test results



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## AUTOMATIC IDENTIFICATION SYSTEM



# ENCODING GUIDE



**AUTOMATIC IDENTIFICATION SYSTEM** is an invaluable navigation safety radio communication tool. However, its usefulness is undermined by the broadcast of inaccurate, improper or outdated data. Mariners are reminded that U.S. regulation requires that each AIS be maintained in effective operating condition which includes the accurate input and upkeep of all AIS data fields. Failure to do so may subject a vessel to civil penalties of up to \$40,000 per occurrence. To avoid such penalties AIS Users in the United States should ensure their system is encoded as follows:

**Static Data**...should be manually inputted at installation & password protected—remember it, you will need it to re-encode or update certain AIS fields

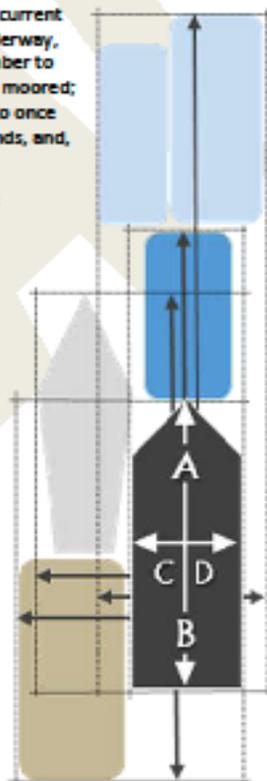
- **Maritime Mobile Service Identifier (MMSI), call sign, & vessel name** should mirror your radio license. There should only be one official MMSI per vessel. If you are licensed-by-rule, use {#####} as your call-sign and your state registration number preceded by {USA#} as your name, e.g. USA#NY1234YZ. If un-numbered (e.g. tenders, associated craft), use your parent vessel's name followed by a dash {-} and a numerical designator that distinguishes you amongst others, e.g. PARENTNAME-{1, 2, 3,...}; and you shall also reflect the last 6-digits of the parent MMSI preceded by {A}, e.g. A123456, in your AIS message 24B call-sign parameter.
- **Names** should not include acronyms (except public vessels i.e. USCG, NYPD, etc.), precursors or designators, e.g. F/V, M/V, MV, OSV, P/V, REC, S/V, TUG. Names exceeding 20 characters (the parameter limit) should not be abbreviated or truncated; except company fleet vessels,<sup>1</sup> who may truncate as needed, but, not their unique distinguishing characters or digits, e.g.  
MYCOMPANYFLEETBOAT ALPHA -> MYCOMPANYFLEET ALPHA  
MYCOMPANYFLEETBOAT1234 -> MYCOMPANYFLEETB1234
- **IMO Number** should reflect your assigned<sup>2</sup> IMO number. Absent an IMO assignment, and if your AIS accept 11-digits, use your U.S. official documentation number preceded by '100' or '1000', e.g. 1001234567, 1000123456; otherwise enter zero {0}.

**Dynamic Data**...should be provided via systems that are properly installed<sup>3</sup> & maintained & always operational

- **Type of positioning source and accuracy** should be properly identified, i.e. GPS, surveyed, manual input, etc. This same source should provide: course over ground in 1/10 degrees, speed over ground in 1/10 knots, vessel position in 1/10 seconds of latitude & longitude, and its accuracy (whether greater or less than 10 meters).
- **Heading data** should be integrated into the AIS on vessels of 150 gross tonnage or greater; also Rate of Turn data on vessels of 30,000 gross tonnage or greater (per SOLAS Regulation V/19.2).
- **A Pilot Plug** should be connected and properly wired to the AIS, and permanently located near a 3-prong, 120-volt, AC receptacle, on vessels required to embark pilots.

**Voyage Related Data**...should be manually updated as necessary to always reflect current conditions

- **Navigation Status** should reflect your current navigational status, i.e. at anchor, underway, engaged in fishing, etc. Always remember to change your status when anchored or moored; which reduces the AIS reporting rate to once every 3 minutes vice every 2-10 seconds, and, mitigates network congestion.
- **Static Draft** should reflect the vessel's actual or maximum draft if the actual draft is unknown.
- **Type of vessel** should reflect a Ship Type denoted in the accompanying table.
- **Dimensions** should reflect the official dimensions of the vessel measured in meters not feet to the positioning-system (e.g. GPS) antenna location used by AIS, as depicted by the white arrows (A=meters fore, B=meters aft, C=meters-to-port & D=meters-to-starboard). Also to be used by ship types 22 to convey the overall rectangular proportions of the vessel and tow—as portrayed by the dark arrow lines within the rectangles in the diagram.
- **Estimated Time of Arrival** to destination or voyage departure, expressed in Universal Time Coordinated (UTC) not local time.



- **Destination** (including origination) should be encoded using ISO 3166 country codes and UN/LOCODE's<sup>4</sup> for international voyages; and US/LOCODE's<sup>5</sup> for voyages to any U.S. port or place<sup>6</sup> as follows:

Origination>Destination using ISO 3166 country & UN/LOCODE  
USNYC-NLRTM ...a New York City to Rotterdam voyage<sup>7</sup>

Vessels inbound to the U.S. should also include a US/LOCODE  
CNSHA>USSFO>OVCY for Shanghai to San Francisco Pier 35

Domestic voyages, US<US/LOCODE>|>|<|>|<|>|US/LOCODE  
US<NYRO>NYSO ...a one-way voyage

US<NYOP>>NYSL ...a scheduled route, e.g. ferry service

US<SFCD><SFCD ...voyage to nowhere & back, e.g. excursion

US<LAIS>>AIS ...operations in a confined area, e.g. fleeting area

US<LBNC>< ...anchored, moored, or on station, e.g. MODU, FPSO

US<LM7N>>PAPX-GIQJ ...a one-way voyage, via an alternate route (e.g. New Orleans, LA to Port Arthur, TX via Gulf Inter-coastal Waterway)

**Safety-Related Text Messaging**...should be short, concise, & used only to exchange pertinent navigation safety-related information

- AIS safety-related text messages (SRM) must be in English and solely to exchange navigation safety information.
- Although not prohibited, AIS text messaging should NOT be relied upon as the primary means for distress (MAYDAY) or urgent (PAN PAN) communications.<sup>8</sup>
- Keep SRM concise and as short as possible (less than 90 characters). The use of abbreviations and acronyms is acceptable and highly encouraged; see the USCG Local Notice to Mariners and NOAA Chart No. 1 for a listing of common abbreviations.
- Testing or repair facilities, in conjunction with on-air testing, should also periodically broadcast an AIS SRM: {TESTING-IGNORE}. Repair testing should be kept to a minimum and not exceed an hour per day.

<sup>1</sup> See <http://wireless.fcc.gov/services/index.htm> (Ship Radio Stations)

<sup>2</sup> Obtained at [www.imo.org/pressroom/infocentre/data.aspx](http://www.imo.org/pressroom/infocentre/data.aspx)

<sup>3</sup> Per IMO SN/Circ. 227 & 224 or NMEA 4.0 Installation Guidelines

<sup>4</sup> Find Country (ISO 3166) & United Nations Location Codes (UN/LOCODE) at: [www.unecdc.org/infocentre/locode/welcome.html](http://www.unecdc.org/infocentre/locode/welcome.html)

<sup>5</sup> Find U.S. Location Codes (US/LOCODE) at: [www.marinecadastre.gov](http://www.marinecadastre.gov) or [www.navcen.uscg.gov/uslocode](http://www.navcen.uscg.gov/uslocode) — THESE SITES ARE IN DEVELOPMENT

<sup>6</sup> Any port or place in which a vessel is bound to anchor, moor, or maintain station (i.e. Outer Continental Shelf activity)

<sup>7</sup> If AIS lacks angle brackets (>) substitute with parenthesis ( ) | X | O | ( | ( | )

<sup>8</sup> See 47 CFR 80.1109—Distress, urgency, and safety communications



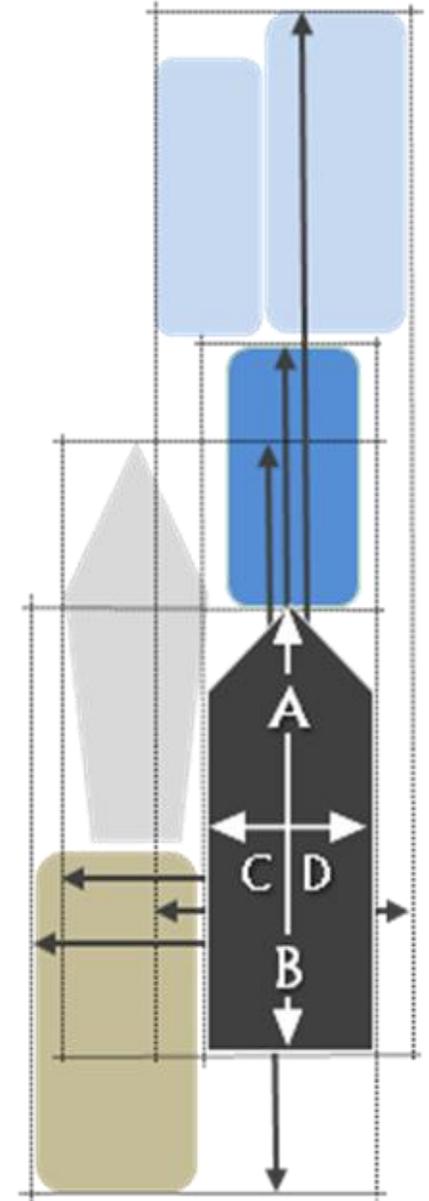
2-digit numeric codes for *Type of Ship and Cargo Type* are composed from 1<sup>st</sup> and 2<sup>nd</sup> digit columns; or as defined in columns 2x, 3x, or 5x.  
 The terms used are as defined in IMO SOLAS, 46 U.S.C. 2101 or 33 CFR 140.10. Blue and/or italic text denotes amplifying text not found in the original source (ITU-R M.1371-4)

1 <sup>st</sup> digit	2 <sup>nd</sup> digit [4x 6x 7x 8x 9x]	Codes for specific vessels operating in USA [2x]	Engaged in... Codes [3x]	Special Craft Codes [5x]
0 – Not available <i>DO NOT USE</i>	0 – All ships of this type	20 – WIG ( <i>Wing in Ground</i> ) vessels	30 – Fishing*	50 – Pilot vessel
1 – Reserved for future use <i>DO NOT USE</i>	1 – Carrying DG (Dangerous Goods), HS (Hazardous Substances), or MP (Marine Pollutant), IMO hazard or pollutant category A/X; or use 41/61 if carrying < 12 passengers for hire	21 – Engaged in towing other than barges by pushing ahead or hauling alongside (i.e. articulated tug-barges, push-boats, workboats); whose dimensions (ABCD values) solely represent the overall dimensions of the vessel*	31 – Engaged in towing by pulling (not pushing or hauling)	51 – Search and rescue vessels, i.e. USCG boats, USCG Auxiliary, assistance towers
2 – WIG or other vessels denoted in column [2x] operating in U.S waters, including the U.S. EEZ	2 – Carrying DG, HS, or MP, IMO hazard or pollutant category B/Y; or use 42/62 if carrying ≥ 12 passengers for hire	22 – Engaged in towing barges by pushing ahead or hauling alongside (i.e. articulated tug-barges, push-boats, workboats); whose dimensions (ABCD values) represent the overall rectangular dimensions of the vessel and its tow*	32 – Engaged in towing by pulling (not pushing or hauling) and length of the tow exceeds 200 meters (656 ft.)	52 – Harbor tugs
3 – Other vessels engaged in actions denoted in column [3x]	3 – Carrying DG, HS, or MP, IMO hazard or pollutant category C/Z; or use 43/63 for ferry service carrying < 150 passengers	23 – Light boats (i.e. push-boats or work boats not engaged in towing; whose dimensions (ABCD values) solely represent the vessel dimensions of the vessel*	33 – Engaged in dredging, or underwater operations, (e.g., salvaging, surveying, but, not diving)*	53 – Fish, offshore or port tenders
4 – HSC or passenger vessels < 100 GT, including tenders	4 – Carrying DG, HS, or MP, IMO hazard or pollutant category D/O; or use 44/64 for ferry service carrying ≥ 150 passengers	24 – Mobile Offshore Drilling Units (MODUs), Liftboats, Floating Production Systems (FPS), Floating Production Storage and Offloading Vessels (FPSO)	34 – Engaged in diving operations*	54 – Commercial response vessels with anti-pollution facilities or equipment
5 – Special craft, per column [5x]	5 – Reserved for future use <i>DO NOT USE</i>	25 – Offshore Supply Vessels (OSV)	35 – Engaged in military operations	55 – Law enforcement vessels, i.e. USCG cutters, marine police
6 – Passenger ships ≥ 100 GT	6 – Reserved for future use <i>DO NOT USE</i>	26 – Processing vessels (i.e. fish)	36 – Sailing vessels*	56 – Spare—for assignments to local vessels as designated by the USCG Captain of Port
7 – Cargo (freight) ships, including Integrated Tug-Barge (ITB) vessels	7 – Reserved for future use <i>DO NOT USE</i>	27 – School, scientific, research or training ships	37 – Pleasure craft (recreational vessel)	57 – Spare—for assignments to local vessels involved in a marine event
8 – Tankers	8 – Reserved for future use <i>DO NOT USE</i>	28 – U.S. public or governmental vessels	38 – Reserved for future use <i>DO NOT USE</i>	58 – Medical transports (as defined in the 1949 Geneva Convention and Additional Protocols) or similar public safety vessels
9 – Other types of ship	9 – No additional information —contact <a href="mailto:cgnav@uscg.mil">cgnav@uscg.mil</a> prior to use	29 – Autonomous or remotely-operated craft	39 – Reserved for future use <i>DO NOT USE</i>	59 – Ships according to RR Resolution No. 18 (Mob-83)

## Codes for specific vessels operating in USA [2x]

- 20 – WIG (Wing In Ground) vessels
- 21 – Engaged in towing other than barges by pushing ahead or hauling alongside (i.e. articulated tug-barges, push-boats, workboats); whose dimensions (ABCD values) **solely** represent the overall dimensions of the vessel\*
- 22 – Engaged in towing barges by pushing ahead or hauling alongside (i.e. articulated tug-barges, push-boats, workboats); whose dimensions (ABCD values) represent the overall rectangular dimensions of the vessel and its tow\*
- 23 – Light boats (i.e. push-boats or work boats not engaged in towing; whose dimensions (ABCD values) solely represent the vessel dimensions of the vessel\*
- 24 – Mobile Offshore Drilling Units (MODUs), Liftboats, Floating Production Systems (FPS), Floating Production Storage and Offloading Vessels (FPSO)
- 25 – Offshore Supply Vessels (OSV)
- 26 – Processing vessels (i.e. fish)
- 27 – School, scientific, research or training ships
- 28 – U.S. public or governmental vessels
- 29 – Autonomous or remotely-operated craft

# **Dimensions** should reflect the official dimensions of the vessel measured in meters **not** feet to the positioning-system (e.g. GPS) antenna location used by AIS, as depicted by the white arrows (A=meters fore, B=meters aft, C=meters-to-port & D=meters-to-starboard). Also to be used by *ship types 22* to convey the overall rectangular proportions of the vessel and tow—as portrayed by the dark arrow lines within the rectangles in the diagram.





**\*\*\* NAVAREA XII Warning for Fukushima, Japan \*\*\*** In response to the situation at the Fukushima Nuclear Power Plant in Japan, the U.S. Coast Guard recommends, as a precaution, that vessels avoid transiting within 50 miles (43 nautical miles/80 kilometers) of the Fukushima Nuclear Power Plant (37°19'N, 141°01'E). [Read the entire NAVAREA XII warning here....](#)

### 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 AIS (NAIS)
- Carriage Requirements
- Reference Information
- Frequently Asked Questions



### 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 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?](#)
19. [What is AIS Channel Management?](#)
20. [Can I use my AIS in an emergency or for distress messaging?](#)
21. [Have an AIS question not answered here?](#)

**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, 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, and, the messages it uses, etc.

### Primary Mission Areas:

- Global Positioning System
- Differential GPS
- Nationwide DGPS
- Long Range Identification and Tracking
- Civil GPS Service Interface Committee
- Automatic Identification System
- Nationwide AIS (NAIS)
- Electronic Navigation & Charting
- Maritime Telecommunications
- LORAN C (archive)

### Services & Reporting:

- [Receive Free LNM Updates](#)
- [Receive Free GPS Status Messages](#)



# USCG AIS Report Form

Contact Us - U.S. Coast Guard Navigation Center - Windows Internet Explorer

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UNITED STATES COAST GUARD

Home | Consolidated Nav Info | DGPS Advisories | GPS Constellation Status | GPS Testing Notices | LNM's | Almanacs | Nav Rules | AIS | Contact Us | Search

**\*\*\* UPDATED 6-6-2011: Warning for Fukushima, Japan \*\*\*** In response to the situation at the Fukushima Nuclear Power Plant in Japan, the U.S. Coast Guard recommends, as a precaution, that vessels avoid transiting within 20 kilometers/10.8 nautical miles of the Fukushima Nuclear Power Plant (37°25.5'N, 141°02.0'E)...[read the entire notice.](#)

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### CONTACT US - U.S. COAST GUARD NAVIGATION CENTER

You can contact us during our normal business days and hours (8:00AM to 4:30PM EST) at the address or telephone number at the bottom of all our web pages or via this page,

To sign-up for free navigation notices and updates, go here: [LNM, GPS, NANU, CGSIC](#)  
To report a system outage, discrepancy or problem, go here: [ATON, GPS, DGPS, NAIS, LRIT](#)  
For our Frequently Asked Questions (FAQs) go here: [AIS, GPS, DGPS, LRIT, NavRules](#)  
For other inquires visit these external links or use the submission form that follows:

- Recreational Boating Safety (regulations, alerts, recalls, links, and more...)
- Coast Guard Academy, recruiting, lighthouses, or history
- The National Pollution Funds Center
- Other USCG Centers of Excellence: [Vessel Documentation](#), [Vessel Movement](#), [Marine Safety](#)

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Category: *	Please select category ==>
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	AIS Display
	AIS Pilot Plug
	AIS Reception/Transmission
	AIS Search & Rescue Transmitter
	Application Specific Messages
	Comment/suggestion - no reply requested
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	Enforcement
	Installation, Set-up or Programming
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	Purchasing
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# United States Coast Guard

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Homeland  
Security

