

United States Coast Guard

Office of Navigation Systems



US Army Corps of Engineers_®

Engineer Research and Development Center

New AIS Rules and Requirements and its use in the U.S. Future of Navigation

Jorge Arroyo & David Lewald | Office of Navigation Systems | U.S. Coast Guard Brian Tetreault | Engineering Research & Development Center | U.S. Army Corp of Engineers





- New AIS Rule (Jorge Arroyo, USCG)
 - Background & Timeline
 - Proposed Rule and Action Taken on Comments Received
 - New AIS Requirements
 - AIS Encoding Guidelines and its impacts for IW users
- Why you're going to want and AIS (David Lewald, USCG)
 - AIS Aids to Navigation (eATON) now and beyond
 - Joint Capability Technology Demonstration (JCTD)
 - Inland Waterway Buoyage and Charting
- AIS in the Inland Empire (Brian Tetreault, USACE)
 - Lock Operations Management Application (LOMA)
 - USCG-USACE AIS Collaboration
 - Lock Approach Current Modeling
 - e-Marine Safety Information (eMSI)





AIS Rulemaking and its Timeline

- ✓ 11/25/02 Marine Transportation Security Act of 2002
- √ 07/01/03 published Temporary Interim Rule and Request for Comments
- √ 10/23/03 current AIS requirement (33 CFR 164.46)
 - > Commercial self-propelled vessels of \geq 65 feet on International Voyage or in a VTS area

Except fishing and small passenger vessels (<150)

- > The following in a VTS area:
- ➤ Towing vessels ≥ 26 feet & >600 hp
- Vessels carrying ≥ 150 passengers for hire
- ✓ 07/01/03-01/09/04 sought AIS expansion comment
- ✓ 10/31/05 notice expansion of AIS to all waters
- ✓ 12/16/08 NPRM ... 4/15/09 comment deadline





AIS Meetings & Comment Period...

- Public Meetings
 - -Washington, DC March 5th, 2009
 - 30+ attendees, II commenters
 - -Seattle, WA March 25th, 2009
 - 30+ attendees, 12 commenters
- Comment period closed: April 15th, 2009
 - 80+ submissions, 300+ comments regarding AIS



Noteworthy AIS Rule Provisions...

What was proposed in blue

- What was adopted after public comment in red
- 7 month implementation period
 - Implementation period extended to 13 months (3/1/16)
- Applicability and Undue economic burden
 - To mitigate impact on small entities applicability raised to >150 passenger
 - Unable to increase the 600 hp threshold for towing
 - because it is mandated per MTSA'02
 - Allows for broader use of lower cost AIS Class B's





Noteworthy AIS Rule Provisions...

- Type-approved Class B be allowed, but, <u>not</u> recommended on vessels that are:
 - highly maneuverable
 - navigate at high speed
 - routinely operate in congested waters, or
 - operate in close-quarter situations

Allows the use of lower cost AIS Class B devices on: dredges, fishing boats, and vessels certificated <150 passengers, but, that do not operate in a Vessel Traffic Service, or at speeds of >14 knots





Noteworthy Proposed AIS Rule Changes...

- Individual yearly deviations/waivers permissible, but, only for vessels:
 - that solely operate within a very confined area e.g. shipyard, fleeting area, etc.
 - on short & fixed schedules e.g. a bank-to-bank river ferry service
 - otherwise not likely to encounter other AIS users

Extends the deviation period to 5-years and broadens it to vessels on which AIS would be impractical, i.e. lack of power, open exposed conning position, display requirement on vessels allowed to use AIS Class B





Noteworthy AIS Rule Provisions...

- Applies to all navigable waters, no exceptions
- · AIS (& assoc. sensors) shall remain on when:
 - -**Underway**
 - -At anchor
 - -At least 15 min. prior to unmooring
 - -Except if it compromises safety or security
 - Which must be logged & reported to USCG

AIS need not be operation while moored





Noteworthy AIS Rule _Provisions...

- AIS is primarily for the person controlling the vessel, who must maintain a periodic watch
 - -Use of AIS mobiles from ashore or on unmanned vessels is prohibited
- AIS messaging must be in English & solely for navigation safety information
 - -Allows the use of Application Specific Messaging, that have been adopted by IMO/IALA, but, only one/min.



Noteworthy AIS Rule Provisions...

- AIS does not relieve you of sound, lights, shapes or radiotelephone requirements
- Spells out 'effective operating conditions' which now includes the:
 - ability to reinitialize the AIS
 - ability to access AIS from conning position
 - accurate broadcast of an official MMSI
 - accurate input, upkeep, and updating

No changes to what was proposed





Effective March 2nd, 2015, these commercially self-propelled vessels, operating on U.S. navigable waters, must have a properly installed, operational Automatic Identification System (AIS) no later than March 1st, 2016

- vessels of 65 feet or more in length
- towing vessels of 26 feet or more in length and more than 600 hp
- vessels certificated to carry more than 150 passengers
- dredges that operate near a channel
- vessels engaged in the movement of certain dangerous cargo, flammable or combustible liquid cargo in bulk

Effected	20	03	2015	- Total Vessels	
Vessels	SOLAS	Dom	estic		
Foreign ship >65'<300GT		1,119		1119	
Fishing	1	1	2,906	2907	
Towing	13	2,212	1,429	3654	
Passenger	81	171	288	540	
Cargo	154	77	247	478	
OSV	55	432	151	638	
MODU	1	1	31	32	
Industrial	21	11	220	252	
Research	10	11	54	75	
School		5	10	15	
Tank Ships	102	15	35	152	
Unknown		16	134	150	
Unclassified		13	326	339	
Dredges		-	17	17	
U.S. Total	438	2,963	5,848	9,249	
Total	4,5	20	5,848	10,368	





Current **AIS Prices**



Class B: \$499 - \$1,700 Class A: 2,900 - \$3,990



Milltech Marine Online Store



ACR Nauticast2 Class A AIS Transponder

The ACR Nauticast2 AIS Transpor specifically designed to fulfill non-This product is packaged in an All transponder, VHF & GPS antenna kit. An ECDIS port adapter is inclu with your ECDIS display or marine can be ordered for use with 12 or 3

ACR-2609 \$2.999.00

Add to Cart



Total AIS	2003	2015		
Costs	Class A	Class A	Class B	
Unit	\$7,000	\$3,230	\$700	
Installation	\$2,000	\$969	\$210	
Operation &	\$250	\$250	\$250	
Maintenance	<i>\$230</i>	<i>\$230</i>	<i>\$230</i>	
Training	\$110	\$110	\$110	
Individual	\$9,250	\$ 4,449	\$1,160	
Cost	<i>33,230</i>	Ş 4 ,443		
Total Costs	\$49.2 M	\$20.5 M		

FURUNO FA30 BLACK BOX AIS

List Price: \$1,102,50 Our Price: \$805.00 You Save: \$297.50 (27%)

Humminbird TX AIS Class B Receiver

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RRP: \$559.99 Your Price: \$448.82

(You save \$111.17) SKU: 409310-1 Brand: Humminbird

Condition: New Weight: 5.00 LBS

* Extended

No Extended Warranty Warranty: C 2 Year Warranty 39.99

C 3 Year Warranty 59.99

Availability: Usually ships within 24 hours

List Price \$1,627.00 Our Price \$1,248.95

boat's identity, speed vessels in your area. I

- WISHLIST - EMAIL

Qty: 1 + ADD TO CART







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Automatic Identification System

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- Class A Position Report
- Class A Static & Voyage Data
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- Long Range AIS Report
- Nationwide AIS (NAIS)
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- AIS Encoding Guide & LOCODES
- Frequently Asked Questions

Mission Areas

- Global Positioning System
- Nationwide DGPS
- Nationwide AIS (NAIS)
- AIS (Overview, Messages, etc.)
- Long Range Identification and Tracking
- Local Notice to Mariners
- Light Lists
- Civil GPS Service Interface Committee
- LORAN C (archive)

Subscribe / Report (free)

- Local Notice to Mariners (Weekly)
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AIS FREQUENTLY ASKED QUESTIONS

- 1 What is AIS?
- What is an MMSI, how do I get one, and how do I program my AIS?
- 3. What is the AIS rule and are there alternatives to the rule for small businesses?
- Do AIS Class B devices meet current USCG AIS carriage requirements?
- 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?
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- 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. Reserved for future use.
- 19. What is AIS Channel Management?
- 20. Can I use my AIS in an emergency or for distress messaging?
- 21. Is the Coast Guard broadcasting AIS Aids to Navigation Reports?
- 22. 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.







Comparison Table of AIS mobile devices

Shipboard AIS	Class A	Class B/SO	Class B/CS	
Transmit Power (Watts)	12.5 W / 2 W (low-power)	5 W / 2 W (low-power)	2 W	
Primary Access Scheme	Self-organizing Time-Division Multiple Access (SOTDMA)	SOTDMA	Carrier-sense TDMA non-competing with SOTDMA units	
Position Reporting Rate	Either every 2, 3 ½, 6 or 10 s based on speed and course change. Every 3 min. when <u><</u> 3 kts.	Either every 5, 15 or 30 s based on speed (2-14, 14-23, >23 kts) Every 3 min. when ≤ 2 kts.	Every 30 s Every 3 min. when ≤ 2 kts.	
Static Data Reporting Rate	Every 6 min	Every 6 min	Every 6 min	
Frequency Range	25 kHz bandwidth between 156.025 MHz to 162.025 MHz	25 kHz bandwidth between 156.025 MHz to 162.025 MHz	25 kHz bandwidth at minimum between 161.500 MHz to 162.025 MHz	
Dedicated DSC Receiver for Channel Management	Yes	Yes	Time-shared	
Position Source / WGS-84 to I/10,0000 of minute of arc	Internal Global Navigation Satellite System & connection to an External Electronic Positioning System (EPFS)	Internal GNSS	Internal GNSS	
Digital Interfaces	2 Input-Output & Multiple Presentation Outputs	Optional	Optional	
Display	Multiple Keyboard Display (MKD)	MKD	Optional	
Safety Text Messaging	Receive & Transmit	Receive & Transmit	Transmit Optional, and only with non- alterable pre-configured messages	
Application Specific Messaging	Receive & Transmit	Receive & Transmit (up to 3 slots)	Receive Optional, cannot Transmit	
Transmit Data	All	No Rate of Turn, Navigation Status, Destination, ETA, Draft, or IMO#	No Rate of Turn, Navigation Status, Destination, ETA, Draft, or IMO#	
International Electrotechnical Commission (IEC) Certification Standard	IEC 61993-2	IEC 62287-2	IEC 62287-1	







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Use The

Encoding

Guide

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AUTOMATIC IDENTIFICATION SYSTEM



AUTOMATIC IDENTIFICATION SYSTEM is a valuable navigation safety radio communication tool. However, its usefulness is undermined by the broadcast of inaccurate, improper or outdate data. Mariners are reminded that U.S. regulation requires that each AIS be maintained in effective operating condition which includes accurate input and upkeep of AIS data parameters. Failure to do so may subject a vessel to civil penalties; to avoid such action AIS Users should ensure their system is up-to-date and encoded as follows:

Static Data_should be manually inputted at installation & password protected. Remember the password. You will need it to re-encode or update these AIS parameters

- Maritime Mobile Service Identifier (MMSI), call sign, vessel dimensions and name should mirror the vessel's radio license or the vessel official documentation, for those vessels icensed-by-rule. There should only be one MMSI assigned to the vessel. If you are licensed-by-rule, input (多の個色色) as your call-sign. Names should not include abbreviations (except public vessels, i.e. USGB, USGBC, USACE, USS, LAPD, NYFD, etc.) or vessel type precursors, i.e. F/V, M/V, MV, OSV, P/V, REC. S/V, TUG, etc.
- Names exceeding 20 characters (the parameter limit) should not be abbreviated, but, may be truncated to 20 characters which include all any unique distinguishing characters. For example, World-wide Traders' tug 123436 should be identified and inputted as @woRLD-WIDE TRA123456).

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ate registration number preceded by §. USA#NY1234YZ. If unnumbered ssel tenders], use your parent by a dash {-} and a numerical ishes you amongst others. For r for the cruise ship Freedom of the d and inputted as {FREEDOM OF THE AIS message 248 call-sign parameter digits of Freedom of the Seas MIMSI 23456.

atch your assigned 7-digit IMO number. zeroes (not trailing zeroes) to fill this i67. Absent an IMO assignment input entation number preceded by either 234567, 1000123456. Input all zeroes r if your AIS does not provide for

Dynamic Data_should be provided via systems that are properly installed, maintaned & opertaional³

- Type of positioning source and accuracy should be accurately set, i.e. GPS, surveyed, manual input, etc. The positioning 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 degree of accuracy (whether greater or less than 10 meters).
- Heading data should be integrated into the AIS on vessels of 130 gross tonnage or greater; and, Rate of Turn data on vessels of 30,000 gross tonnage or greater (per SOLAS Regulation V/19.2).
- 4 A Pilot Plug, on vessels required to embark pilots, should be connected and properly wired to the AIS. It should be permanently located near a 3-prong, 120-volt, AC receptacle.

Voyage Related Data...should be manually inputted as necessary to always indicate current conditions

Navigation Status should indicate your current navigational status, i.e. at anchor, underway, engaged in fishing, etc.
Note, vessels engaged in towing should use:
Novigation Status '11' when towing astern, or '12' when pushing ahead or alongside.
Remember to change your status when anchored or moored. Doing so reduces the AIS reporting rate of 2–10 seconds to once every 3 minutes; which mitigates network congestion.

Static Draft should indicate the vessel's actual

4 Type of vessel should indicate a Ship Type denoted in the accompanying table.

actual draft is unknown.

draft. Input the vessel's maximum draft if the

4 Dimensions should indicate the official dimensions of the vessel, in meters not feet, derived from the fore, aft, port and starboard distance to the positioning-system antenna used by AIS (e.g. GPS antenna). Refer to the diagram. In this example the AIS's GPS antenna is located at the intersection of the two white lines.

U.S. Ship Type 57 (see Table) dimensions should represent the overall rectangular area of the vessel and its tow—as portrayed by the dark arrow lines within the rectangles in the diagram.

 Estimated Time of Arrival to destination or voyage departure (if moored or anchored). Input Universal Time Coordinated (not local time). Destination and your origination should be inputted using ISO 3166 country and UN location codes (UN/LOCODE)⁴ for international voyages (per IMO SN/Circ.244) or U.S. GUID⁵ for domestic voyages as follows:.

Origination>Destination using ISO 3166 country & UN/LOCODE

USNYC>NLRTM _for New York City to Rotterdam?

U.S. GUID⁵ may be used in lieu of & UN/LOCODES for vessels inbound to the U.S or for domestic voyages (between any U.S. port or place)¹⁴ as follows:

CNSHA-USAGVCY ...for Shanghal to San Francisco Pier 35

For domestic voyages as follows: US^GUID [>|><|<>|<|>>|GUID

US-09/IDD-AA77 —a one-way voyage to a port or place², but, unknown berth
US-09/US-00(12-070) —a one-way voyage, via an alternate or standard route
(i.e. Benvick Bay, Lik to New Orlsans, Liv kis Harvey Looks)
US-09/IDD-02(2) —a one-way voyage to an assigned berth
US-09/IDD-02(3) —a scheduled route, Lie. States Island Ferry
US-09/IDD-04/CY —a voyage to nowhere & back, e.g. an exursion
US-09/IDD-04/CY —a voyage to nowhere & back, e.g. an exursion
US-09/IDD-02(3) —powersion sociely within a defined area, e.g. Vessel Traffic Sensice a
US-09/IDD-02(3) —powersion sociely within a defined area, e.g. Vessel Traffic Sensice a

Safety-Related Text Messaging_should be short, concise, & used only to exchange pertinent navigation safety-related information

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

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⁵ See http://wireless.fcc.gov/services/index.htm (Ship Radio Stations)

Obtained at www.imonumbers.irfairplay.com/datause.aspx

⁸ Per IMO SN/Circ. 227 & 224 or NMEA 4.0 Installation Guidelines.

⁴ Find Country (ISO 3166) & United Nations Location Codes (UN/LOCODE) at: www.usecs.org/cefact/locode/welcome.html

⁵ Find U.S. Globally Unique Identifier's (US/GUIDS) for ports, places, berths and routes at: www.navcen.uscg.gov/?pageName=locode

⁶ Any port or place in which a vessel is bound to anchor, moor, or maintain station (Le. Outer Continents) Shelf activity)

⁷ If AIS lacks angle brackets (>) substitute with parenthesis () | X | () | (| (()

See 47 CFR 80.1109-Distress, urgency, and safety communications

2-digit numeric codes for *Type of Ship* are composed from 1st and 2sd digit columns or as defined in columns 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.1371-5)

1ª digit		2 nd digit	[3x] others "engaged in"	[5x] special craft		
0 – Not available	0 – Not available 0 – All ships of this type		30 – Fishing vessels, including processors, but, not tenders (see type ''3')*	30 – Pilot vessel		
1 – Reserved for	rved for future use 1—Carrying DG, H5 or MP, IMO hazard or pollutant category X DO NOT USE 31—Towing astern and the length of tow is under 200 meter (636 ft.) or its breadth is 25 meters (82 ft.) or less*		31 - Towing astern and the length of tow is under 200 meters (636 ft.) or its breadth is 25 meters (82 ft.) or less*	31 – Search and rescue vessels, i.e. USCG boats, USCG Auxiliary, assistance towers		
2-WIG	-WIG Serving DC, HC, or MD, WAD heared or poliulant sategory Y DO NOT USE 32 - Towing astern and length of the tow exceeds 200 meter (656 ft.) or breadth exceeds 25 m (82 ft.)*		32 - Towing astern and length of the tow exceeds 200 meters (656 ft.) or breadth exceeds 25 m (82 ft.)*	52 – Tugs, light boats, push-boats, towboats or workboats, that do not engaged in towing		
	3 – Other vessels angaged in actions denoted in column [3x] 3 — Carrying DC, HE, or MR, IMO based or solvaging, surveying, sampling, other types of scientific research but, not diving)*		salvaging, surveying, sampling, other types of scientific research,	53 – Fish, offshore or port tenders		
4 – HSC (Hi-speed ferries	d Craft) or passenger	4 Comying DC, HE, or MP, IMO heserd on poliulant sategory DE DO NOT USE	34 – Engaged in diving operations; or other types of operations with person in the water*	34 – Commercial response vessels with anti-pollution facilities or equipment		
5 — Special craft,	per column [5x]	5 – Reserved for future use	35 – Engaged in military operations; or other types of restricted operations*	55 – Law enforcement vessels, i.e. USCG cutters, marine police		
	ps other than HSC rries; including off- sels (OSV)	6 – Reserved for future use	36 – Seiling *	56 – Spare-for assignments to local vessels that are engaged in towing ahead or alongside, and whose dimensions (ABCD values) represent the overall dimensions of the vessel not including its tow*		
7 - Cargo (freight	ships, including and integrated tug- s	7 – Reserved for future use	37 – Pleasure craft	57 – Spare–for assignments to local vessels that are engaged in towing ahead or alongside, and whose dimensions (ABCD values) represent the overall area of the vessel including its tow*		
g	ding articulated ted tug tank barge 8 – Reserved for future use		38 – Reserved for future use	38 – Medical transports (as defined in the 1949 Geneva Convention and Additional Protocols) or similar public safety or first response vessels		
	f ship	9 - No additional information 99 - autonomous or remotely-operated unmanned craft	39 – Reserved for future use	59 – Ships according to RR Resolution No. 18 (Mob-83)		

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Remember to also update your Navigation Status accordingly, i.e. Nav Status: 3 = restricted maneuverability; 8 = under sait; 11= towing astern; 12 = pushing ahead/alongside, etc.

For further information or additional copies visit www.navcen.uscg.gov or email cgnav@uscg.mil

***** DRAFT **** Redistribution with or without USCG indicia is permissible and encouraged ***** DRAFT ****





2-digit numeric codes for Type of Ship are composed from 1st and 2nd digit columns or as defined in columns 3x or 5x.

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1 – Reserved for future	use	DO NOT US	poliutant os defined in IMO SOLAS, 46 U.S.C. 2101 or 33 CFR 140.100 meters		31 – Search and rescue vessels, i.e. USCG boats, USCG Auxiliary, assistance towers		
2-WIG		3 Compin poliulant d DO NOT U		2*d digit		00 meters	52 - Tugs, light boats, push-boats, towboats or workboots, that do not engaged in towing
3 – Other vessels enga denoted in column [3x]		3 Compin pollutant o DO NOT US	0 – All ships of th	is type	30 – type	s, such as tific research,	53 – Fish, offshore or port tenders
4 – HSC (Hi-speed Craft ferries	t) or passenger	4 Corryin polisioni a DO NOT US	1 - Carrying DG, I pollutant catagor DO NOT USE	HS or MP , IMO hazard or YX	31 - (636	operations	34 – Commercial response vessels with anti-pollution facilities or equipment
5 – Special craft, per co	ecial craft, per column [3x] 3 – Reserve			3—Corrying DC, HC, or MP, MAD heserd or political entagery V		32 — of restricted	35 – Law enforcement vessels, i.e. USCG cutters, marine police
6 – Passenger ships ott and passenger ferries; shore supply vessels (C	including off-	6 – Reserva	DO NOT USE	IIC, or MP, IMO hosped on	(656	ı	36 – Spare-for assignments to local vessels that are engaged in towing ahead or alongside, and whose dimensions (ABCD values) represent the overall dimensions of the vessel not including its tow*
7 -Cargo (freight) ships articulated (ATB) and i		7 – Reservi	DO NOT USE	•	salva but, i		57 – Spare-for assignments to local vessels that are engaged in towing ahead or alongside, and whose dimensions (ABCD values) represent the overall area of the vessel including its tow*
AIS	rticulated ig tank barge	8 – Reserve	DO NOT USE	HE, or MP, MAO hossed or 1795	34 - with	•	58 – Medical transports (as defined in the 1949 Geneva Convention and Additional Protocols) or similar public safety or first response vessels
ng		9 – No add 99 - autoni	5 – Reserved for t	future use	35 - open	•	39 – Ships according to RR Resolution No. 18 (Mob-83)
			3 – Reserved for t	future use	open	E	59 – Ships according to RR Re

USCG A **Encodir** Guide **Under Revision**

Remember to also update your Navigation Status accordingly, i.e. Nav Status: 3 = restricted maneuverability; 8 = under sail; 11= towing astern; 12 = pushing ahead/alongside, etc. For further information or additional copies visit www.navcen.uscg.gov or email cgnav@uscg.mil

***** DRAFT **** Redistribution with or without USCG indicia is permissible and encouraged ***** DRAFT ****







	1" digit [3x] others "engaged in"		[5x] special craft		
0 – Not available		30 - Fishing vessels, including processors, but, not tenders (see type '53')*	50 – Pilot vessel		
- Reserved fo	or future us	31 - Towing astern and the length of tow is under 200 meters (636 ft.) or its breadth is 25 meters (82 ft.) or less*	51 – Search and rescue vessels, i.e. USCG boots, USCG Auxiliary assistance towers		
- WIG - Other vesse anoted in colu		32 – Towing astern and length of the tow exceeds 200 meters (636 ft.) or breadth exceeds 25 m (82 ft.)*	52 – Tugs, light boots, push-boots, towboots or workboots, that do not engaged in towing		
– HSC (Hi-spe rries		33 - Engaged in dredging, or underwater operations, such as salvaging, surveying, sampling, other types of scientific research, but, not diving)*	53 – Fish, offshore or port tenders		
3 – Special craft, per colu 6 – Passenger ships other and passenger ferries; inc. shore supply vessels (OSV		34 – Engaged in diving operations; or other types of operations with person in the water*	34 – Commercial response vessels with anti-pollution facilities equipment		
-Cargo (freig		35 – Engaged in military operations; or other types of restricted operations*	55 – Law enforcement vessels, i.e. USCG cutters, marine police		
•	ding art	36 – Sailing *	36 – Spare–for assignments to local vessels that are engaged in towing ahead or alongside, and whose dimensions (ABCD value represent the overall dimensions of the vessel not including its tow.**		
	fship	37 – Pleasure craft	57 – Spare-for assignments to local vessels that are engaged in towing ahead or alongside, and whose dimensions (ABCD value represent the overall area of the vessel including its tow*		

USCG AIS Encoding Guide Under Revision





AUTOMATIC IDENTIFICATION SYSTE



AUTOMATIC IDENTIFICATION SYSTEM is a valuable not safety radio communication tool. However, its useful undermined by the broadcast of inaccurate, improper or or data. Mariners are reminded that U.S. regulation require each AIS be maintained in effective operating condition includes accurate input and upkeep of AIS data parameters, to do so may subject a vessel to civil penalties; to avoid such AIS Users should ensure their system is up-to-date and encipologists.

Static Data...should be manually inputted at installar password protected. Remember the password. You need it to re-encode or update these AIS paramet

- Maritime Mobile Service Identifier (MMSI), call sign, w dimensions and name should mirror the vessel's radio ficense or the vessel official documentation, for those ve licensed-by-rule. There should only be one MMSI assign the vessel. If you are ficensed-by-rule, input (多色多色 as your call-sign. Names should not include abbreviation (except public vessels, i.e. USGG, USGGC, USACE, USS, LAPO, NYFD, etc.) or vessel type precursors, i.e. F/V, M/V, MV, GSV REC. S/V, TUG, etc.
- Names exceeding 20 characters (the parameter limit) sh not be abbreviated, but, may be truncated to 20 charact which include all any unique distinguishing characters. F example, World-wide Traders' tug 123436 should be identified and inputted as @woRLD-WIDE TRA123456).

USCG AIS Encoding Guide Under Revision

ate registration number precede g. USA#NY1234YZ. If unnumbere ssel tenders], use your parent by a dash {-} and a numerical ishes you amongst others. For r for the cruise ship Freedom of I d and inputted as {FREEDOM OF AIS message 248 call-sign parant digits of Freedom of the Seas MI 24456.

atch your assigned 7-digit IMO n s zeroes (not trailing zeroes) to fi 367. Absent an IMO assignment ii entation number preceded by ei 234567, 1000123456. Input all ze r if your AIS does not provide for

Voyage Related Data...should be manually inputted as necessary to always indicate current conditions

 Navigation Status should indicate your current navigational status, i.e. at anchor, underway, engaged in fishing, etc.

Note, vessels engaged in towing should use: Navigation Status '11' when towing astern, or '12' when pushing ahead or alongside.

Remember to change your status when anchored or moored. Doing so reduces the AIS reporting rate of 2–10 seconds to once every 3 minutes; which mitigates network congestion.

- Static Draft should indicate the vessel's actual draft. Input the vessel's maximum draft if the actual draft is unknown.
- 4 Type of vessel should indicate a Ship Type denoted in the accompanying table.
- Dimensions should indicate the official dimensions of the vessel, in meters not feet, derived from the fore, aft, port and starboard distance to the positioning-system antenna used by AIS (e.g. GPS antenna). Refer to the diagram. In this example the AIS's GPS antenna is located at the intersection of the two white lines.

U.S. Ship Type 57 (see Table) dimensions should represent the overall rectangular area of the vessel and its tow—as portrayed by the dark arrow lines within the rectangles in the diagram.

 Estimated Time of Arrival to destination or voyage departure (if moored or anchored). Input Universal Time Coordinated (not local time).

USA CODE of for US NUS GUIDS UN/LOCODE Saf concis for vessels een any U.S. port A) (<)>) (600) ch short, avigation e in English Ination. ould NOT 4 Tes mns.* Ts than 90 able and USCG utical Chart Complete Service 2 missison-air Per IM minimum * Find C ⁵ Find U ⁶ Any iss^{coot)} ± Quite, berths and routes at: 7 HARSE alatala station (Le. 01003

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Automatic Identification System

- What is AIS?
- How AIS Works
- Types of AIS
- AIS Messages
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- Class A Position Report
- Class A Static & Voyage Data
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- Nationwide AIS (NAIS)
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Mission Areas

- Global Positioning System
- Nationwide DGPS
- Nationwide AIS (NAIS)
- AIS (Overview, Messages, etc.)
- Long Range Identification and Tracking
- Local Notice to Mariners
- Light Lists
- Civil GPS Service Interface Committee
- LORAN C (archive)

Subscribe / Report (free)

- Local Notice to Mariners (Weekly)
- GPS Operational Summary (Daily)

AIS FREQUENTLY ASKED QUESTIONS

- 1 What is AIS?
- What is an MMSI, how do I get one, and how do I program my AIS?
- 3. What is the AIS rule and are there alternatives to the rule for small businesses?
- 4. Do AIS Class B devices meet current USCG AIS carriage requirements?
- 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
- 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)?
- 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. Reserved for future use.
- 19. What is AIS Channel Management?
- 20. Can I use my AIS in an emergency or for distress messaging?
- 21. Is the Coast Guard broadcasting AIS Aids to Navigation Reports?
- 22. Have an AIS question not answered here?

See Our FAQ #15 For More Info on Rule...

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.







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See

AIS FAQ #16

For Copy of this

Presentation

Automatic Identification System

AIS FREQUENTLY ASKED QUESTIONS

What is AIS?

- What is A
- How AIS
- Types of
- AIS Mess
- AIS Bas
- Class A
- Class A
- Class B
- AIS ATO
- Long Ra
- Nationwid AIS Requi
- Reference
- AIS Enc
- Frequenth

15. Is the USCG considering expanding AIS carriage to other vessels or outside of VTS areas? Yes. On January 30¹⁷, 2015 the Coast Guard published a Final Rule (80 FR 5281), which on March 2nd, 2015, expands AIS carriage (68 FR 60599) to most commercial vessels (see those effected here) operating on any U.S. navigable waters, and, harmonizes U.S. AIS requirements with Regulation V/19.2.4 of the Safety of Life at Sea Convention and § 102 of the Maritime Transportation Security Act of 2002. The docket containing comments submitted, supporting documents, and the regulatory analysis to this and our proposed rulemaking (73 FR 76295) can be found at www.regulations.gov [Search: USCG-2005-21869]. Printer-friendly PDF formats of these 2015 requirements. our 2008 proposed rule, an amalgamation of both, our 2003 requirements, and, a chart-comparison of all three.

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:

Mission Areas

- Global Positioning System
- Nationwide DGPS
- Nationwide AIS (NAIS)
- AIS (Overview, Messages, etc.)
- Long Range Identification and Tracking
- Local Notice to Mariners
- Light Lists
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United States Coast GuardOffice of Navigation Systems

Thank You! Now on to Dave

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