AIS Data Sample File Column Descriptions:

Column	Data Type	Descriptions
created_at	*date*	ISO 8601 formatted timestamp in UTC of the time the vessel record was created
timestamp	*string*	ISO 8601 formatted timestamp in UTC of the time the AIS message was transmitted
msg_type	*integer*	*AIS message type* *Common values:* 1, 2, 3, 5, 18, 19, 24, 27 AIS message types are explained in more details hereunder
mmsi	*integer*	The Maritime Mobile Service Identity of the vessel transmitting the AIS message *Possible values:* 000000000 - 999999999
latitude	float	*Vessel latitude in degrees* *(North = positive, South = negative)* *range -90 to +90*
longitude	float	Vessel longitude in degrees (East = positive, West = negative) range = -180 to +180
speed	*number*	Vessel speed over ground represented in knots *Possible values:* 0 - 102.2 knots, 102.3 (not available)
course	*number*	Vessel course over ground in degrees *Possible values:* 0 - 359.9 degrees, 360.0 (not available)
heading	*number*	Vessel true heading in degrees *Possible values:* 0 - 359 degrees, 511 (not available)

rot	*integer*	Vessel rate of turn

Possible values:

-127 - 127; -128 (not available) |
| **imo** | *integer* | IMO number of the ship

Unique International Maritime Organization number for the vessel that stays with the ship for it's life

valid values 7 digit number |
| **name** | *string* | Vessel name |
| **call_sign** | *string* | Vessel call sign |
| **draught** | float | Vessel draught represented in 1/10 meters

Possible values:

0.1 - 255, 0 (not available; default) |
| **ship_and_cargo_type** | *integer* | Vessel ship and cargo type code

Some common values:

30 (fishing vessel), 52 (tug boat), 70 (cargo/fishing ship)

more information on determining the ship type is detailed hereunder |
| **length** | *number* | Vessel length extracted from ship dimensions to_bow and to_stern in meters |
| **width** | *number* | Vessel width extracted from ship dimensions to_port and to_starboard in meters |
| **eta** | *string* | Vessel estimated time of arrival as entered by the captain, represented in ISO 8601 format

Possible values:

Month: 1 - 12, 0 (not available; default); Day: 1 - 31, 0 (not available; default); Hour: 0 - 23, 24 (not available; default); Minute: 0 - 59, 60 (not available; default) |
| **destination** | *string* | Vessel destination as entered by the vessel captain |

status	*integer*	Vessel navigation status

Some common values:

0 (under way using engine), 1 (at anchor), 3 (restricted maneuverability), 7 (engaged in fishing), 15 |
| **maneuver** | *integer* | Vessel maneuver code

Valid values:

0 (not available; default), 1 (not engaged in special maneuver), 2 (engaged in special maneuver) |
| **accuracy** | *integer* | Vessel GPS geo location accuracy in meters

Possible values:

1 (high, <=10 meters); 0 (low, >10 meters, default) |
| **collection_type** | *string* | How the message was captured

Possible values:

satellite or terrestrial or dynamic |
to_bow	*integer*	Distance from AIS transponder to the bow side edge in meters (Hull dimension A) available from March 2020 onwards
to_stern	*integer*	Distance from AIS transponder to the stern side edge in meters (Hull dimension B) available from March 2020 onwards
to_port	*integer*	Distance from AIS transponder to the port side edge in meters (Hull dimension C) available from March 2020 onwards
to_starboard	*integer*	Distance from AIS transponder to the starbord side edge in meters (Hull dimension D) available from March 2020 onwards

Available AIS Message Types

AIS message types with a quick overview

Position Messages

AIS position messages mostly broadcast information about a vessel's physical location and motion. This includes a vessel's MMSI number, longitude, latitude, rate of turn, speed, true heading, and other parameters.

Spire offers the following position messages to customers:

- **Messages 1, 2, and 3** from Class A vessels
- **Message 4** from base stations
- **Message 18** from Class B vessels
- **Message 27** from Class A or B vessels (for long-range applications)

Nominal Reporting Interval

- **Anchored/Moored Class A/B** vessels broadcast position messages every **3 minutes**.
- **Class A** and **Class B** traveling at most **3 knots** and **2 knots** respectively broadcast position messages every **3 minutes**.

Static Messages

AIS static messages mostly broadcast information about vessel characteristics that should remain (relatively) static over the during of their voyage. This includes a vessel's MMSI number, AIS version number, IMO number, call sign, name, type of ship/cargo, ship dimensions, destination, and other parameters.

Spire offers the following static messages to customers:

- **Message 5** from Class A vessels
- **Message 24** from Class B vessels

Nominal Reporting Interval

Both Class A/B vessels broadcast static messages every **6 minutes**, when an information change has been made, or upon request.

Other Messages

Message 19

Spire offers **Message 19** from Class B vessels, which contains *some* parameters from Messages 18, 24A, and 24B.

Additional Encoded Available AIS Messages

We also offer the following AIS messages in an encoded fashion along with their MMSI and flag or origin:

- **Message 6**: Addressed binary message
- **Message 7**: Binary acknowledge
- **Message 8**: Binary broadcast message
- **Message 9**: Standard search and rescue aircraft position report
- **Message 10**: Coordinated universal time and date inquiry
- **Message 11**: Coordinated universal time/date response
- **Message 12**: Addressed safety related message
- **Message 14**: Safety related broadcast message
- **Message 15**: Interrogation
- **Message 16**: Assigned mode command
- **Message 17**: Global navigation-satellite system broadcast binary message
- **Message 20**: Data link management message
- **Message 21**: Aids-to-navigation report

Determining Ship Types

How we assign ship type values in Messages and Vessels

Messages API

Static messages (types 5 & 24) broadcast a ship and cargo type, which we provide in the ship_and_cargo_type field. Additionally, we map this value as close to the AIS standard as possible in the ship_type field.

Standard Ship Type - Code(s) (2 digits only)

Reserved for future use - 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
Wing In Ground - 20, 21, 22, 23, 24, 25, 26, 27, 28, 29
Search and Rescue - 51
Fishing Vessel - 30
Tug - 31, 32, 52
Special Craft - 33, 34, 35, 50, 53, 54, 55, 56, 57, 58, 59
Sailing Vessel - 36
Pleasure Craft - 37
Reserved - 38, 39
High-Speed Craft - 40, 41, 42, 43, 44, 45, 46, 47, 48, 49
Passenger Ship - 60, 61, 62, 63, 64, 65, 66, 67, 68, 69
Cargo - 70, 71, 72, 73, 74, 75, 76, 77, 78, 79
Tanker - 80, 81, 82, 83, 84, 85, 86, 87, 88, 89
Other - 90, 91, 92, 93, 94, 95, 96, 97, 98, 99

Non-standard AIS Ship Type - Code(s)
Other - 100-199 (Reserved for regional use)
Other - 200-255 (Reserved for future use)
Other - 256-999 (No designation)

Vessels API

The Vessels API aims to provide a more complete representation of each ship based on AIS messages, external data sources, and analyzing ship behvaior. This is reflected in ship_type , general_classification , and individual_classification .

Ship Type Values
Fishing
Tug
Sailing
Pleasure Craft
Passenger
Cargo
Tanker
Other

General Classification Values
Fishing industry
Service vessels
Merchant
Inland waterways
Naval
Offshore
Pleasure / Leisure
Rescue
All other Activities

Individual Classification Values
Air-cushion vehicle
Auxiliary ship
Despatch vessel
Lighter
Bulk carrier
Whaler
Buoy ship
Factory ship
Cargo ship
Coaster
Cable ship
Coast-guard
Barge
Chemical carrier
Trawler
Cement carrier
Tanker
Collier
Container ship
Corvette
Cruiser
Cutter
Destroyer
Ship used by divers
Minesweeper
Customs launch
Dredger
Dry cargo
Ketch
Training ship
Escort ship
Research ship/ Survey ship
Ferry
Fast patrol ship
Reefer
Weather
Frigate
Fruit carrier
Floating storage, offtake
General cargo

Schooner
Grain carrier
Floating crane
Warship
Hospital ship
Hydrographic ship
Ice breaker
Waste incinerator
Inspection ship
Lobster ship
Lugger
Banker
Mine layer
Motor boat
Pollution and surface clearance vessel
Naviplane
Ore-bulk-oil carrier
Oil tanker
Oceanographic ship
Ocean-station vessel
Passenger ship
Liner
Livestock carrier
Barge carrier
Drilling unit
Fishing vessel
Lightship
Lighthouse tender
Fishing guard
Platform
Pilot tender
Firefloat
Cargo and passenger
Pontoon
Aircraft carrier
Helicopter carrier
Salvage ship
Supply vessel
Rock breaker
RoRo ship
Rescue vessel
Stand-by-safety vessel
Sloop
Submarine
Support vessel
Patrol ship
Tunny ship
Liquefied gas carrier
Ore carrier
Solvent carrier
Transport
Forest-product carrier

Tramp
Pusher / Tug
Vehicle carrier
Launch
Hydrofoil
Sailing ship
Unspecified
Yacht