

SPIRE MARITIME DATA DESCRIPTION AND SERVICE LEVEL AGREEMENT

This data description (this “**Data Description**”) forms part of a contract between the Spire entity specified in the Order Form (“**Spire**”) and the entity specified in the Order Form as the customer for the Data (“**Customer**”).

The contract between Spire and Customer (this “**Agreement**”) consists of:

- A. The Order Form;
- B. The Spire Data Terms & Conditions (v1.5 dated 1 January 2020) (the “**Terms & Conditions**”); and
- C. This Data Description.

Capitalized terms not defined in this Data Description will have the meaning provided in the Terms & Conditions.

1. Data & Data Add-On

Spire provides access to various types of Data depending on the terms of the Order Form:

- (a) Satellite-AIS Data – AIS Data collected by Spire’s constellation of satellites;
- (b) Terrestrial-AIS Data – AIS Data collected by land-based receivers;
- (c) Vessel Data – additional data about vessels;
- (d) Dynamic-AIS Data - AIS Data collected by ship-based receivers;
- (e) Predict AI – vessel location forecasts for up to 8 hours in advance; and
- (f) Historical Positions – vessel location records for at least the last 6 months to the present day.

2. Data Access

2.1 Spire provides the following ways to access the Data depending on the terms of the Order Form:

- (a) NMEA Stream over TCP – AIS Data streamed as encoded NMEA0183 strings; and
- (b) Messages API + Vessels API – access to AIS Data through an API (together with Vessel Data where applicable);

2.2 In the event Customer exceeds the number of Permitted API Calls specified in the Order Form, Spire may immediately suspend Customer’s access to the Data in accordance with Clause 15 of the Terms & Conditions

3. Data Service

3.1 Spire provides the following levels of access to the Data and Data use, unless specified differently in the Order Form:

- (a) Base:
 - (i) Data: Satellite-AIS Data
 - (ii) Data Access: NMEA Stream over TCP.
 - (iii) Data Use: Internal Use only.
- (b) Standard:
 - (i) Data:
 - (A) Satellite-AIS Data; and
 - (B) Terrestrial-AIS Data
 - (ii) Data Access: Messages API + Vessels API
 - (iii) Data Use:

- (A) Internal Use; and
- (B) the production of Derivative Works, including for third parties.

(c) Premium:

(i) Data:

- (A) Satellite-AIS Data;
- (B) Terrestrial-AIS Data;
- (C) Vessel Data;
- (D) Predict AI; and/or
- (E) Historical Positions

(ii) Data Access: Messages API & Vessels API

(iii) Data Use:

- (A) Internal Use;
- (B) the production of Derivative Works, including for third parties;
- (C) Customer Applications, including for third parties; and/or
- (D) Distribution of the Data to third parties but only following the execution of a Distribution Licence between the Parties.

(d) Historical:

(i) Data:

- (A) Satellite-AIS Data; and
- (B) Terrestrial-AIS Data;

(ii) Data Access: File Transfer of CSV Files.

(iii) Data Use:

- (A) Internal Use;
- (B) the production of Derivative Works, including for third parties;
- (C) Customer Applications, including for third parties; and/or
- (D) Distribution of the Data to third parties but only following the execution of a Distribution Licence between the Parties.

(iv) The following terms shall apply to the provisions of Historical Data:

- (A) The Data is being provided to Customer for the payment of a one-off fee and the automatic renewal provisions in Clause 4.2 of the Terms & Conditions shall not be applicable; and
- (B) Notwithstanding anything in Clause 17.5 of the Terms & Conditions requiring the deletion of the Data, Customer may retain and use any Data received pursuant to this Order Form provided such retention and use otherwise complies with the terms of this Agreement

4. Service Levels - SLs

- 4.1 Spire will use commercially reasonable efforts to achieve the service levels set out below (“SLs”), as measured by reference to Spire’s business records but excluding:
- (a) commercially reasonable planned downtime;
 - (b) the failure of equipment, applications and other systems not under the direct control of Spire or its subcontractors; and
 - (c) other circumstances beyond Spire’s reasonable control
- (collectively, “Excluded Events”).

Service Item	Service Level
System Uptime	Monthly average of more than 99,9% “Uptime” means the average time that AIS Data was online and available in any given month, as recorded by Spire.
Data Volume global Satellite	An average of more than 8 million messages per day during a calendar month. The performance against the SL shall be calculated by dividing (1) the total number of AIS messages delivered by Spire’s satellite constellation in a calendar month; by (2) the total number of days in that calendar month.
Data Volume global Satellite-AIS+ Terrestrial-AIS	Average of more than 30 million messages per day during a calendar month. The performance against the SL shall be calculated by dividing (1) the total number of Satellite-AIS and Terrestrial-AIS messages made available by Spire in a calendar month; by (2) the total number of days in that calendar month. For the avoidance of doubt, this SL is only available to Customers receiving both Satellite-AIS and Terrestrial-AIS

Data Volume global Dynamic-AIS	Average of more than 5 million messages per day during a calendar month. The performance against the SL shall be calculated by dividing (1) the total number of Dynamic-AIS messages made available by Spire in a calendar month; by (2) the total number of days in that calendar month. For the avoidance of doubt, this SL is only available to Customers receiving Dynamic-AIS.
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- 4.2 Customer agrees that Spire may provide it with access to the Data through updated versions of an API provided that such updates do not materially decrease the functionality of the API. Any material updates to the API will be notified to Customer via e-mail.

5. Service Levels - Remedies

- 5.1 In the event that Spire fails to meet the SLs in a given calendar month, but ignoring any failure to the extent attributable to Excluded Events, Customer shall be entitled to receive a number of additional free days access to the Data at the end of the Initial Term or any Renewal Term as applicable (the “Service Level Credit”) calculated as follows:

Performance compared to SL (on average during the month) (=X)	Service Level Credit days
100% or more	No credit
Between 50% and 100%	15 days
Below 50%	1 month

Example for the “Data Volume global Satellite” SL: If the average number of AIS messages delivered per day by Spire’s satellite constellation in a calendar month is equal to 7 million messages the Customer shall receive a Service Level Credit of 15 days.

Example for the “API uptime” SL (1): If the average uptime of the API in a calendar month is equal to 99.93%, the performance against the SL will be calculated as follows:

*$(99.93/99.9) * 100 = 100.03\%$ of the SL*

The customer shall receive no Service Level Credit

- 5.2 In order to obtain a Service Level Credit in any given calendar month, Customer must send Spire a written notice within 30 days following the end of such calendar month specifying:
- (a) the Data in relation to which Customer is claiming the credit;
 - (b) the dates and or times in which the Data or availability of the Data failed to achieve the applicable SL; and
 - (c) the amount of the Service Level Credit that Customer believes it is owed.
- 5.3 Spire shall check any claim for a Service Level Credit against its business records in order to determine whether (x) the Data has met the SLs; and (y) whether Customer is entitled to a Service Level Credit. Spire’s determination shall be binding in the absence of fraud or manifest error.

- 5.4 The aggregate maximum number of days of additional access to the Data granted as Service Level Credits for any failures to meet the SLs in a calendar month shall not exceed the number of days in that calendar month. Service Level Credits may not be exchanged for, or converted to, monetary amounts.
- 5.5 In the event that Customer receives the maximum Service Level Credit for any 6 consecutive calendar monthly periods, Customer shall be entitled to terminate this Agreement.
- 5.6 Customer agrees that (x) the Service Level Credits; and (y) Customer's right to terminate in Paragraph 5.5 are Customer's sole and exclusive remedy, and Spire's sole and exclusive liability, for:
- (a) downtime in the availability of the Data; and
 - (b) failure of the Data to meet any expectations and performance level.

6. Customer Support

- 6.1 The Customer Support Team can be reached at cx@spire.com.
- 6.2 Spire operates a "follow the sun" model with offices in multiple time zones, allowing for the provision of a broad range support times for our customers.

Time Zone	Operating Hours
Pacific Standard Time	9:00am – 6:00pm Business days Monday to Friday
Singapore Time	9:00am – 6:00pm Business days Monday to Friday
CET	9:00am – 6:00pm Business days Monday to Friday

- 6.3 Spire strives to provide a good service for onboarding, troubleshooting and incident response by responding to inbound inquiries as quickly as possible based on priority. Spire's attempts to achieve the following response and resolution times:

Priority	Response	Resolution
Urgent	1 hour	4 hours
High	8 hours	48 hours
Normal	24 hours	72 hours

7. AIS Data

- 7.1 For the avoidance of doubt, Spire may not have Data for each vessel for each of the data fields specified below.
- 7.2 The Automatic Identification System data shall consist of the data fields listed in Table 1.

Table 1

This table indicates which data is available through which product service. Please note that data fields indicated as accessible through "NMEA Stream over TCP", indicate that the data can be extracted by decoding the raw NMEA format AIS message.

In the Messages API and Vessels API, data values are provided textually as part of JSON responses.

Property	Type	Description	AIS Messages	Service in which field is included		
				NMEA Stream over TCP	Messages API	Vessels API
NMEA Message	String	Encoded NMEA message as received by AIS units, provided with NMEA format compliant checksum	ALL	Y	Y	N
Source tag	String	Source tag indicating source of message provided in NMEA format data string \s: prefix followed by satellite id if coming from satellite such as s:\FM86 or s:\dynamic for Dynamic AIS. No prefix indicates terrestrial AIS	ALL	Y	N	N
NMEA timestamp	String	Epoch representation of the message timestamp compliant with NMEA format streams	ALL	Y	N	N
timestamp	String	ISO8601 formatted AIS message timestamp in UTC of when the source AIS message was received	ALL	N	Y	Y
Id	String	Unique identifier of the vessel in the Spire database.	ALL	N	N	Y
Name	string	Vessel name.	5,24	Y	Y	Y
mmsi	integer	Vessel Maritime Mobile Service Identity. Possible values: 000000000 to 999999999	ALL	Y	Y	Y
imo	integer	Vessel unique International Maritime Organization number. Possible values: 0001000000 to 0009999999, 0010000000 to 1073741823 (office flag state number)	5,24	Y	N	Y
call_sign	string	Vessel call sign. Decoded from Messages 5 & 24	5,24	Y	Y	Y

AIS ship_type	<i>string</i>	Category of vessel. Valid values: Fishing, Tug, Sailing, Pleasure Craft, Passenger, Cargo, Tanker, Other.	5,24	Y	Y	Y
class	<i>string</i>	Shipborne AIS transponder class. Valid values: A or B.	ALL	Y	Y	Y
Flag	<i>string</i>	Vessel country flag using 2-letter country codes.	5,24	N	Y	Y
Length	<i>Number</i>	Vessel length made from ship dimensions to <u>_bow</u> and to <u>_stern</u> in meters.	5,24	N	Y	Y
Width	<i>Number</i>	Vessel width extracted from ship dimensions to <u>_starboard</u> and to <u>_port</u> in meters.	5,24	N	Y	Y
ais_version	<i>Integer</i>	Vessel AIS version. Valid values: 0 (compliant with Recommendation ITU-R M.1371-1), 1 (compliant with Recommendation ITU-R M.1371-3), 2 (compliant with Recommendation ITU-R M.1371-5 or later), 3 (compliant with future editions)	ALL	Y	Y	Y
created_at	<i>String</i>	ISO8601 formatted system time in UTC at which vessel record was first created.	-	N	N	Y
updated_at	<i>Date time</i>	ISO8601 formatted date and time in UTC of the last time any field in the vessel record was updated.	-	N	N	Y
navigational_status	<i>String</i>	Interpreted vessel navigational status.	1,2,3,18, 27	Y	Y	Y
Maneuver	<i>String</i>	Vessel maneuver code. Valid values: 0 (not available; default), 1 (not engaged in special maneuver), 2 (engaged in special maneuver).	1,2,3,18, 27	Y	Y	Y
Course	<i>number</i>	Vessel course over ground.	1,2,3,18, 27	Y	Y	Y
draught	<i>number</i>	Vessel draught represented in 1/10 meters. Possible values: 0.1 - 25.5, 0 (not available;default).	1,2,3,18, 27	Y	Y	Y
rot	<i>Integer</i>	Vessel rate of turn. Possible values: -127 to 127; -128	1,2,3,18, 27	Y	Y	Y
geometry	<i>JSON</i>	Vessel position coordinates represented in GeoJSON.	1,2,3,18, 27	N	N	Y
Collection type	<i>string</i>	How the message was captured. Valid values: satellite,terrestrial or dynamic	ALL	N	Y	Y
speed	<i>number</i>	Vessel speed over ground represented in knots.	1,2,3,18, 27	Y	Y	Y
heading	<i>Integer</i>	Vessel true heading represented in degrees.	1,2,3,18, 27	Y	Y	Y
accuracy	<i>number</i>	Vessel GPS geolocation accuracy. Possible values: 1 (high, <10 m), 0 (low, >10m, default)	1,2,3,18	Y	Y	Y