



**Myriota**

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**Myriota**

**AssetHawk™**

Message Format

Description

XAN1110-03

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# Revision History

Rev	Date	Description of Change
01	Jan 2026	Initial version
02	Apr 2026	Added Tamper message reason Added Message Flag Detail Added BLE message format
03	Jun 2026	Changed the TerminalID to the SIM ICCID Added the AssetHawk Serial number field to all messages Added the Transport field to all messages

## Related Documentation

Find the latest versions of all Myriota documentation at [developer.myriota.com](https://developer.myriota.com)

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Technical Support  
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[support.myriota.com](https://support.myriota.com)

Sales Support  
[sales@myriota.com](mailto:sales@myriota.com)

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# Overview

This document details the data structure of the messages from AssetHawk™ devices, which will be sent via HTTPS POST requests to customer visualisation platforms. The data received by the platform is in standard JSON format.

The payload contains telemetry data from the AssetHawk™, including location, device health (battery and temperature), and the specific reason the report was triggered (e.g., movement detected, stationary timeout, etc.).

Note that messages may be duplicated and/or arrive out of order.

## POST request structure

The body of the POST request is formatted as JSON. The example below illustrates the structure of the request.

```
{
  "EndpointRef": "N_HlfTNgRsqh:uyXKvYTmTAO5.",
  "Timestamp": 1563521870,
  "Data":
    "{ \"Packets\":
      [ { \"Timestamp\": 1563521870359,
        \"TerminalId\": \"0001020304\",
        \"Value\": \"MessagePayload\",
        \"SerialNumber\": \"X99A25431234\",
        \"Transport\": \"NTN\" } ] }",
  "Id": "fe77e2c7-8e9c-40d0-8980-43720b9dab75",
  "CertificateUrl": "https://security.myriota.com/data-13f71.crt",
  "Signature": "k2OIBppBXmBT520rUllvMxNg+h9sojYBhQhOGSIWGdzkppdT1.."
}
```

The table below provides a breakdown of the corresponding fields in the POST request.

Field	Type	Description																		
EndpointRef	String	Unique Identifier of the destination																		
Timestamp	Number	Unix Epoch time at which the HTTP POST request was generated																		
Data	Object	<p>A JSON serialised structure with the following fields:</p> <table border="1"> <tbody> <tr> <td>Packets</td> <td>List</td> <td>JSON list of the packets received from the device. For AssetHawk, this list only contains one message.</td> </tr> <tr> <td>Timestamp</td> <td>Number</td> <td>Unix Epoch time (ms) at which the packet was captured by the satellite</td> </tr> <tr> <td>TerminalId</td> <td>Number</td> <td>SIM card ICCID from which the packet was transmitted</td> </tr> <tr> <td>Value</td> <td>Object</td> <td>The payload data from the device. See <a href="#">Payload Format</a> for more information.</td> </tr> <tr> <td>SerialNumber</td> <td>Text</td> <td>The Serial number of the AssetHawk device from which the packet was sent.</td> </tr> <tr> <td>Transport</td> <td>Text</td> <td>The network technology through which the message was delivered. <ul style="list-style-type: none"> <li>- TN = Cellular</li> <li>- NTN = Satellite</li> </ul> </td> </tr> </tbody> </table>	Packets	List	JSON list of the packets received from the device. For AssetHawk, this list only contains one message.	Timestamp	Number	Unix Epoch time (ms) at which the packet was captured by the satellite	TerminalId	Number	SIM card ICCID from which the packet was transmitted	Value	Object	The payload data from the device. See <a href="#">Payload Format</a> for more information.	SerialNumber	Text	The Serial number of the AssetHawk device from which the packet was sent.	Transport	Text	The network technology through which the message was delivered. <ul style="list-style-type: none"> <li>- TN = Cellular</li> <li>- NTN = Satellite</li> </ul>
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Id	String	HTTPS Message UUID																		

CertificateUrl	URL	URL of certificate containing the public key to authenticate the Signature.
Signature	String	PKCS1_15 signature of Timestamp, Id and Data fields

Details on how to use the Certificate and Signature fields to validate the data are outlined on the Myriota Support site [here](#).

# Payload Format

## Location Message

The payload data is in JSON format, as shown in the example location payload data below:

```
"Value": {
  "type": 1,
  "sequence_number": 10,
  "reason": 0,
  "flags": 2,
  "time": 1738183958,
  "latitude": -34.9275233,
  "longitude": 138.6075245,
  "elevation": 63.032,
  "temperature": 18,
  "battery_voltage": 3.600
}
```

## Location Payload Breakdown

The table below describes each field in the JSON location payload and its unit of measurement (UOM).

Content	UOM	Note						
Message Type	N/A	Message versioning tracks changes to the message structure. <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>1</td><td><a href="#">Location Message</a></td></tr><tr><td>8</td><td><a href="#">Bluetooth Message</a></td></tr></tbody></table>	Value	Description	1	<a href="#">Location Message</a>	8	<a href="#">Bluetooth Message</a>
Value	Description							
1	<a href="#">Location Message</a>							
8	<a href="#">Bluetooth Message</a>							
Sequence Number	N/A	An incrementing number to keep track of the message sequence, i.e. message count. The						

		<p>sequence number has a maximum value of 255; after that, it wraps around to 0 and continues counting. If this number resets to 0 before reaching 255, the device has reset/rebooted.</p> <p>This number is increased separately for each Message Type.</p>																
<p>Message Reason</p>		<p>The reason the message was sent. The reason is specified as a number (enumeration). The table below defines each value.</p> <table border="1" data-bbox="730 556 1404 1465"> <thead> <tr> <th data-bbox="730 556 844 640">Value</th> <th data-bbox="844 556 1404 640">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="730 640 844 756">0</td> <td data-bbox="844 640 1404 756">The first message sent after boot. Triggered ~60 seconds after startup.</td> </tr> <tr> <td data-bbox="730 756 844 913">1</td> <td data-bbox="844 756 1404 913">Stationary interval elapsed: the device has been stationary for the configured stationary interval.</td> </tr> <tr> <td data-bbox="730 913 844 1060">2</td> <td data-bbox="844 913 1404 1060">Movement started: the device was stationary, and movement has now been detected.</td> </tr> <tr> <td data-bbox="730 1060 844 1186">3</td> <td data-bbox="844 1060 1404 1186">Movement stopped: the device was in motion and has since stopped.</td> </tr> <tr> <td data-bbox="730 1186 844 1291">4</td> <td data-bbox="844 1186 1404 1291">Movement interval elapsed: The device was in motion and remains in motion.</td> </tr> <tr> <td data-bbox="730 1291 844 1375">5</td> <td data-bbox="844 1291 1404 1375">Reserved for future use.</td> </tr> <tr> <td data-bbox="730 1375 844 1465">6</td> <td data-bbox="844 1375 1404 1465">The device has been tampered with.</td> </tr> </tbody> </table>	Value	Description	0	The first message sent after boot. Triggered ~60 seconds after startup.	1	Stationary interval elapsed: the device has been stationary for the configured stationary interval.	2	Movement started: the device was stationary, and movement has now been detected.	3	Movement stopped: the device was in motion and has since stopped.	4	Movement interval elapsed: The device was in motion and remains in motion.	5	Reserved for future use.	6	The device has been tampered with.
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6	The device has been tampered with.																	
<p>Message Flag</p>	<p>N/A</p>	<p>The message flag highlights information that is relevant but not related to the reason a message was sent.</p> <table border="1" data-bbox="730 1669 1404 1831"> <thead> <tr> <th data-bbox="730 1669 1063 1753">Value</th> <th data-bbox="1063 1669 1404 1753">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="730 1753 1063 1831">0</td> <td data-bbox="1063 1753 1404 1831">No Active flag</td> </tr> </tbody> </table>	Value	Description	0	No Active flag												
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Time	N/A	The time of the location reading, in <a href="#">UTC</a> . This is in <a href="#">Unix time</a> format (also called Epoch time). e.g. 1758520800 is 2025-09-22 06:00:00		
Latitude	degrees	The device's latitude in degrees.		
Longitude	degrees	The device's longitude in degrees.		
Elevation	m	The device's elevation above average sea level, in meters.		
Temperature	°C	Internal temperature of the device in degrees Celsius		
Battery Voltage	V	The device's battery level in Volts.		

**Note:** that future firmware releases may add additional fields, reasons and/or flags to the payload data structure

## Bluetooth Message

The payload data is in JSON format, as shown in the example BLE payload data below:

```

"Value": {
  "type": 8,
  "sequence_number": 10,
  "time": 1738183958,
  "protocol": 1,
  "RSSI": -70,
  "address": "AA:BB:CC:DD:EE:FF",
  "data": "Beacon Data"
}

```

The table below describes each field in the JSON BLE payload and its unit of measurement (UOM).

Content	UOM	Note										
Message Type	N/A	<p>Message versioning tracks changes to the message structure.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><a href="#">Location Message</a></td> </tr> <tr> <td>8</td> <td><a href="#">Bluetooth Message</a></td> </tr> </tbody> </table>	Value	Description	1	<a href="#">Location Message</a>	8	<a href="#">Bluetooth Message</a>				
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Time	N/A	<p>The time of the location reading, in <a href="#">UTC</a>. This is in <a href="#">Unix time</a> format (also called Epoch time). e.g. 1758520800 is 2025-09-22 06:00:00</p>										
Protocol	N/A	<p>BLE advertising protocol type from the beacon.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>EddyStone format</td> </tr> <tr> <td>2</td> <td>Reserved for future use</td> </tr> <tr> <td>3</td> <td>Reserved for future use</td> </tr> <tr> <td>4</td> <td>Advertising data or scan response frame</td> </tr> </tbody> </table>	Value	Description	1	EddyStone format	2	Reserved for future use	3	Reserved for future use	4	Advertising data or scan response frame
Value	Description											
1	EddyStone format											
2	Reserved for future use											
3	Reserved for future use											
4	Advertising data or scan response frame											
RSSI	dBm	<p>Signal strength between the AssetHawk and the BLE beacon in dBm.</p>										

Address	N/A	MAC address of the beacon.
Data	N/A	Raw beacon payload. The beacon payload is not decoded and is sent as captured from the beacon.

**Note:** that future firmware releases may add additional fields, reasons and/or flags to the payload data structure