Wialon Retranslator

The Wialon Retranslator protocol (v. 1.0) is used to retransmit data in binary format using TCP. Using the protocol, you can transfer location information, values of various sensors, and JPEG images.

Table of Contents

Data Type Table

Size (Bytes)	Type	Byte Order	Description
N	Binary	Big-endian	Binary data.
N	String		The value must be converted according to ASCII encoding. Its limit is determined by the zero byte 0x00.
2	Short		An unassigned integer.
4	Integer		A signed integer.
8	Long		A signed integer.
8	Double	Little-endian	A signed fractional number.
1	Byte	-	An unassigned integer.

Packet Structure

Packet Size	UID	Time	Bitmask	Posinfo Block	Pwr_ext Block	Avl_inputs Block	Block …

Packet Structure Table

Field Type	Field Value	Field Description
Integer	Packet size	The size of the whole packet, excluding the current field. Little-endian byte order. The only exception from the Data Type Table.
String	Unique identifier of the controller	Corresponds to the unique identifier of the Wialon unit.
Integer	Time	Timestamp in seconds since January 1,

<table>
<tr><td></td><td></td><td>1970 (UTC±00:00).</td></tr>
<tr><td>Integer</td><td>Message bit mask</td><td>
<table>
<tr><th colspan="2">Bitmask Description Table</th></tr>
<tr><td>0x00000001</td><td>Information about location.</td></tr>
<tr><td>0x00000002</td><td>Information about digital inputs.</td></tr>
<tr><td>0x00000004</td><td>Information about digital outputs.</td></tr>
<tr><td>0x00000010</td><td>Alarm bit.</td></tr>
<tr><td>0x00000020</td><td>Driver ID information.</td></tr>
<tr><td>0xFFFFFFC8</td><td>Bits are reserved.</td></tr>
</table>
</td></tr>
<tr><td>-</td><td>Data block structure</td><td>A substructure that contains data blocks. Description is below.</td></tr>
</table>

Data Block Structure

<table>
<tr><th>Field Type</th><th>Field Value</th><th>Field Description</th></tr>
<tr><td>Short</td><td>Block type</td><td>Constant: 0x0BBB</td></tr>
<tr><td>Integer</td><td>Block size</td><td>The size of the data block, excluding the Block type field and the current field.</td></tr>
<tr><td>Byte</td><td>Stealth attribute</td><td>
<table>
<tr><th colspan="2">Stealth Attribute Values</th></tr>
<tr><td>1</td><td>The parameter is hidden. It is not registered in the message.</td></tr>
<tr><td>0</td><td>The parameter is shown. It is registered in the message.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td></td><td>Note:
To register the Posinfo, Avl_inputs, Avl_outputs, Avl_driver blocks, the stealth attribute should have the value 1.
To display other blocks when registering the message, the stealth attribute should have the value 1.</td></tr>
<tr><td>Byte</td><td>Block data type</td><td><table><tr><th colspan="2">Block Data Types</th></tr><tr><td>x01</td><td>String</td></tr><tr><td>x02</td><td>Binary (Only for the Posinfo block)</td></tr><tr><td>x03</td><td>Integer</td></tr><tr><td>x04</td><td>Double</td></tr><tr><td>x05</td><td>Long</td></tr><tr><td>x06</td><td>JPEG image (Only for the Image block)</td></tr></table></td></tr>
<tr><td>String</td><td>Block name</td><td><table><tr><th colspan="2">Non-variable Block Names</th></tr><tr><td>posinfo</td><td>Information about location</td></tr><tr><td>image</td><td>JPEG image</td></tr><tr><td>avl_inputs</td><td>Values of digital inputs</td></tr><tr><td>avl_outputs</td><td>Values of digital outputs</td></tr><tr><td>avl_driver</td><td>Driver ID</td></tr></table><table><tr><th colspan="2">Recommended Block Names</th></tr><tr><td>adc1, adcN</td><td>Analog sensor values</td></tr><tr><td>gsm</td><td>GSM signal level</td></tr><tr><td>ign</td><td>Ignition. Recommended value: 1/0</td></tr><tr><td>can1, canN</td><td>Values of the CAN bus sensors</td></tr><tr><td>pwr_ext</td><td>External power supply voltage</td></tr></table></td></tr>
</table>

		pwr_int | Internal power supply voltage The name of the block corresponds to the name of the parameter that will be registered in the message, except for the *Posinfo* and *Image* blocks. The block may have another name, but its maximum size is 38 bytes.
-	-	Block value in accordance with the transmitted value.

Posinfo Block

Field Type	Field Value	Field Description
Double	Longitude	Longitude.
Double	Latitude	Latitude.
Double	Altitude	Absolute altitude above sea level. Measured in meters.
Short	Speed	Measured in km/h.
Short	Course	Degrees 0 – 359.
Byte	Number of satellites	If the number of satellites is less than four, Wialon displays the track with a dashed line, which indicates insufficient location accuracy.

Image Block

Field Type	Field Value	Field Description
Long	Title	Constant: 0x0000000000000000.
Integer	Image Size	Only the binary part of the block is included in the size.
Binary	Image	JPEG data.

Confirmation of Data Processing

To each valid incoming packet, Wialon sends 0x11 as a response. If data is retransmitted from Wialon to a third-party platform, the response is not required.

Example of Packet Parsing

Source packet:

```
74000000333533393736303133343435343835004B0BFB70000000030BBB000000270102706F73696
E666F00A027AFDF5D9848403AC7253383DD4B400000000000805A40003601460B0BBB00000012000
47077725F657874002B8716D9CE973B400BBB00000011010361766C5F696E707574730000000001
```

74000000 is the packet size (116);

33353339373630313334343534383500 is the controller identifier; (353976013445485);

5D515DBB is the UTC time (1565613499 = 2019/08/12 15:38:19);

00000003 is the bitmask (3);

0BBB is the block type (3003);

00000027 is the block size (39);

01 is the stealth attribute (1);

02 is the data type of the block (2);

706F73696E666F00 is the name of the block (posinfo);

A027AFDF5D984840 is the longitude (49.1903648);

3AC7253383DD4B40 is the latitude (55.7305664);

0000000000805A40 is the altitude (106.0);

0036 is the speed (54);

0146 is the course (326);

0B is the number of satellites (11);

0BBB is the block type (3003);

00000012 is the block size (18);

00 is the stealth attribute (0);

04 is the type of block data (4);

7077725F65787400 is the name of the block (pwr_ext);

2B8716D9CE973B40 is the value (27.593);

0BBB is the block type (3003);

00000011 is the block size (17);

01 is the stealth attribute (1);

03 is the type of block data (3);

61766C5F696E7075747300 is the name of the block (avl_inputs);

00000001 is the value (1).