gTracker protocol (ver. 1)

Table of Contents

Each message consists from header and body:

L – message length. This field is not counted in length.

T – message type

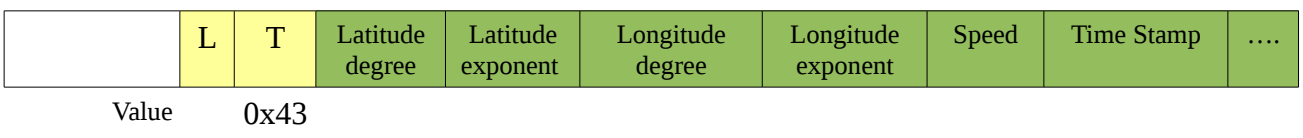
Client messages

Authenticate message.

V – protocol version. Equal to 1.

If client connects first time DeviceID field shall have zero length. If client already has identity, it shall be passed in DeviceID field.

Coordinate message



Size (in bytes)	1	1	2	4	2	4	2	4
Size (in bytes)	1	1			18 ...			

Body can contain several coordinates. Each coordinate consists from four fields: Latitude degree, Latitude exponent, Longitude degree, Longitude exponent, Speed and Time Stamp. Latitude and longitude are floats calculated by algorithm (described in Appendix A). Mantissa is a Latitude(Longitude) degree and exponent is a Latitude(Longitude) exponent. Speed is measured in km/h. Time Stamp field is a UTC time presented as count of seconds since Epoc (1 -Jan-1970).

Heartbeat message

Value		0x45	
Size (in bytes)	1	1	0

Client shall send heartbeat message each minute. If both heartbeat and coordinate messages are absent within 2 minute interval, client will be dropped by server and track will be closed.

SOS message

Value		0x46	
Size (in bytes)	1	1	0

This message can be send in case of emergency situation. The server can react somehow(e. g. sending SMS message).

Start new track

Value		0x47	
Size (in bytes)	1	1	0..50

A new track with new name(if any) will be started right after this message arrival.

Rename track

Value		0x48	
Size (in bytes)	1	1	0..50

Renames current track. If track name is empty (zero length), current track name is dropped.

Server messages

Authenticate response from server

Value		0x42		
Size (in bytes)	1	1	12	128

DeviceID field contains unique identity for connected client. The client shall store this identity and use it next time to connect (see Authenticate message). Reference is a null-terminated string Http reference to direct view of active track of the device. All trailing unused bytes are filled with zeros. This reference can be sent by eMail, SMS, etc.

Track status

	L	T	Track name
Value		0x49	
Size (in bytes)	1	1	50

Track new name.

Error message

	L	T	Error code	Description
Value		0x44		
Size (in bytes)	1	1	1	0...

Server may response with error. Possible error codes are described in Appendix B.

Heartbeat message response

	L	T	
Value		0x4a	
Size (in bytes)	1	1	0

The server response to client Heartbeat message.

Reconnect demand

	L	T	Host	Port
Value		0x4b		
Size (in bytes)	1	1	128	4

The server demands client to reconnect to Host:Port, where Host is a null-terminated string and Port is a 4 byte integer. When client gets such message it MUST reconnects to given Host:Port.

Appendix A

TBD. Latitude/Longitude calculation algo.

Appendix B

- ERROR_NOT_AUTH (0x01) – client not authenticated. Authenticate first.
- ERROR_WRONG_MSG (0x02) – wrong message. Message has wrong format for declared protocol version. Description field of Error Message contains message, which client sent to server.
- ERROR_FUCK_OFF (0x03) – client was disconnected after N attempts to send wrong data.

- ERROR_SERVER_UNAVAILABLE (0x04) – server not in working mode.
- ERROR_WRONG_DID(0x05) – wrong DeviceID
- ERROR_ALREADY_AUTH(0x06) – client with such DeviceID has already authenticated
- ERROR_TRACK_RENAME(0x07) – track rename failed
- ERROR_START_NEW_TRACK(0x08) – start new track failed
- ERROR_TRACK_NAME_TOO_LONG(0x09) – track name too long
- ERROR_TRACK_NOT_STARTED(0xA) – track is not started yet