

TMT250 Protocols

V1.2

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1. TMT250 DATA PROTOCOL

1.1 AVL data packet

Below table represents AVL data packet structure.

4 zeroes	Data field length	Codec ID	Number of Data 1	AVL Data	Number of Data 2	CRC-16
4 Bytes	4 Bytes	1 Byte	1 Byte	30- 147 Bytes	1 Byte	4 bytes

Number of data – number of encoded data (number of records).

In TMT250 codec ID is constant 08.

Data field length is the length of bytes [codec id, number of data 2].

Number of data 1 should always be equal to number of data 2 byte.

CRC-16 is 4 bytes, but first two are zeroes and last two are CRC-16 calculated for [codec id, number of data 2]

Minimum AVL packet size is 45 bytes (all IO elements disabled).

Maximum AVL packet size for one record is 783 bytes

1.2 AVL Data

Timestamp	Priority	GPS Element	IO Element
8 Bytes	1 Byte	15 Bytes	6-123

Timestamp – difference, in milliseconds, between the current time and midnight, January 1, 1970 UTC.

1.3 Priority

0	Low
1	High
2	Panic

1.4 GPS Element

Longitude	Latitude	Altitude	Angle	Satellites	Speed
4 Bytes	4 Bytes	2 Bytes	2 Bytes	1 Byte	2 Bytes

X Longitude¹

Y Latitude¹

Altitude In meters above sea level¹

Angle In degrees, 0 is north, increasing clock-wise¹

Satellites Number of visible satellites¹

Speed Speed in km/h. 0x0000 if GPS data is invalid¹

Longitude and latitude are integer values built from degrees, minutes, seconds and milliseconds by formula.

¹

If record is without valid coordinates – (there were no GPS fix in the moment of data acquisition) – Longitude, Latitude and Altitude values are last valid fix, and Angle, Satellites and Speed are 0.

$$\left(d + \frac{m}{60} + \frac{s}{3600} + \frac{ms}{3600000} \right) * p$$

- d Degrees
- m Minutes
- s Seconds
- ms Milliseconds
- p Precision (10000000)

If longitude is in west or latitude in south, multiply result by -1. To determine if the coordinate is negative, convert it to binary format and check the very first bit. If it is 0, coordinate is positive, if it is 1, coordinate is negative.

Example:

Received value: 20 9c ca 80

Converted to BIN: 00100000 10011100 11001010 10000000 first bit is 0, which means coordinate is positive

Converted to DEC: 547146368

For more information see two's complement arithmetics.

1.5 IO element

1 Byte	Event IO ID
1 Byte	N of Total IO
1 Byte	N1 of One Byte IO
1 Byte	1'st IO ID
1 Byte	1'st IO Value
	...
1 Byte	N1'th IO ID
1 Byte	N1'th IO Value
1 Byte	N2 of Two Bytes
1 Byte	1'st IO ID
2 Bytes	1'st IO Value
	...
1 Byte	N2'th IO ID
2 Bytes	N2'th IO Value
1 Byte	N4 of Four Bytes
1 Byte	1'st IO ID
4 Bytes	1'st IO Value
	...
1 Byte	N4'th IO ID
4 Bytes	N4'th IO Value
1 Byte	N8 of Eight Bytes
1 Byte	1'st IO ID
8 Bytes	1'st IO Value
	...
1 Byte	N8'th IO ID
8 Bytes	N8'th IO Value

Event IO ID – if data is acquired on event – this field defines which IO property has changed and generated an event. If data cause is not event – the value is 0.

- N total number of properties coming with record (N=N1+N2+N4+N8)
- N1 number of properties, which length is 1 byte
- N2 number of properties, which length is 2 bytes
- N4 number of properties, which length is 4 bytes
- N8 number of properties, which length is 8 bytes

Permanent I/O elements									
Property ID in AVL packet	Property Name	Bytes	Type	Min	Max	Multiplier	Units	Description	HW support
11	ICCID	8	Unsigned	0	0xffffffffffff	-	-	Value of SIM ICCID	All
14	ICCID2	8	Unsigned	0	0xffffffffffff	-	-	Value of second part of SIM ICCID	All
17	Asis X	2	Signed	-8000	8000	-	mG	X axis value, mG	All
18	Asis Y	2	Signed	-8000	8000	-	mG	Y axis value, mG	All
19	Asis Z	2	Signed	-8000	8000	-	mG	Z axis value, mG	All
21	GSM Signal	1	Unsigned	0	5	-	-	Value in range 1-5	All
67	Battery Voltage	2	Unsigned	0	65535	-	mV	Voltage, mV	All
69	GNSS Status	1	Unsigned	0	3	-	-	0 – OFF 1 - ON with fix 2 - ON without fix 3 - In sleep state	All
80	Data Mode	1	Unsigned	0	5	-	-	0 – Home On Stop 1 – Home On Moving 2 – Roaming On Stop 3 – Roaming On Moving 4 – Unknown On Stop 5 – Unknown On Moving	All
113	Battery Level	1	Unsigned	0	100	-	%	Battery capacity level from 0 to 100 in %	TMT250
116	Charger Connected	1	Unsigned	0	1	-	-	0 – USB Not Connected 1 – USB Connected	TMT250
181	GNSS PDOP	2	Unsigned	0	500	0.1	-	Probability	All
182	GNSS HDOP	2	Unsigned	0	500	0.1	-	Probability	All
200	Sleep Mode	1	Unsigned	0	2	-	-	0 – No Sleep 1 – GPS Sleep 2 – Deep Sleep 3 – Online Sleep 4 – Ultra Deep Sleep	All
205	GSM Cell ID	2	Unsigned	0	65535	-	-	GSM base station ID	All
206	GSM Area Code	2	Unsigned	0	65535	-	-	Location Area code (LAC), it depends on GSM operator. It provides unique number which assigned to a set of base GSM stations. Max value: 65536	All
240	Movement	1	Unsigned	0	1	-	-	Logic: 0/1 (depends on Movement source)	All
241	Active GSM Operator	4	Unsigned	0	4294967295	-	-	Currently used GSM Operator code	All

Eventual I/O elements (generate and send record to server only if appropriate conditions are met)									
Property ID in AVL packet	Property Name	Bytes	Type	Min	Max	Multiplier	Units	Description	HW support
155	Geofence zone 01	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
156	Geofence zone 02	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
157	Geofence zone 03	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
158	Geofence zone 04	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
159	Geofence zone 05	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
61	Geofence zone 06	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
62	Geofence zone 07	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
63	Geofence zone 08	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
64	Geofence zone 09	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
65	Geofence zone 10	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
70	Geofence zone 11	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
88	Geofence zone 12	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All

91	Geofence zone 13	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
92	Geofence zone 14	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
93	Geofence zone 15	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
94	Geofence zone 16	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
95	Geofence zone 17	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
96	Geofence zone 18	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
97	Geofence zone 19	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
98	Geofence zone 20	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
99	Geofence zone 21	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
153	Geofence zone 22	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
154	Geofence zone 23	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
190	Geofence zone 24	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
191	Geofence zone 25	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
192	Geofence zone 26	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All

193	Geofence zone 27	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
194	Geofence zone 28	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
195	Geofence zone 29	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
196	Geofence zone 30	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
197	Geofence zone 31	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
198	Geofence zone 32	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
208	Geofence zone 33	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
209	Geofence zone 34	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
216	Geofence zone 35	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
217	Geofence zone 36	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
218	Geofence zone 37	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
219	Geofence zone 38	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
220	Geofence zone 39	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
221	Geofence zone 40	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All

222	Geofence zone 41	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
223	Geofence zone 42	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
224	Geofence zone 43	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
225	Geofence zone 44	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
226	Geofence zone 45	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
227	Geofence zone 46	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
228	Geofence zone 47	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
229	Geofence zone 48	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
230	Geofence zone 49	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
231	Geofence zone 50	1	Unsigned	0	3	-	-	Event: 0 – target left zone, 1 – target entered zone, 2 – over speeding end, 3 – over speeding start	All
175	Auto Geofence	1	Unsigned	0	1	-	-	Event: 0 – target left zone, 1 – target entered zone	All
236	Alarm	1	Unsigned	0	1	-	-	Event :0 – not used, 1 – alarm was triggered with button	TMT250
242	ManDown	1	Unsigned	0	1	-	-	Event: 0 – ManDown not detected, 1 – ManDown detected	TMT250
255	Over Speeding	1	Unsigned	0	255	-	km/h	At over speeding start km/h, at over speeding end km/h	All

*ICCID Full Value Calculation, Example

- 1) Calculate ID:14 length as string
- 2) If length < 10, then add_zeros = 10 – length
- 3) Else no zeros must be added
- 4) Concat strings to get final value. Final value = String(ID 11) + String(add_zeros) + String(ID 14).

ID:11 Len as string	ID:14 Len as string	Full Value	Full Value Len
9	9	String(ID 11) + „0“ + String(ID 14)	19
9	10	String(ID 11) + String(ID 14)	19
10	10	String(ID 11) + String(ID 14)	20
9	11	String(ID 11) + String(ID 14)	20
11	8	String(ID 11) + „00“ + String(ID 14)	21
11	10	String(ID 11) + String(ID 14)	21
12	10	String(ID 11) + String(ID 14)	22
12	9	String(ID 11) + „0“ + String(ID 14)	22

1.6 Example

Received data:

```
0000000000000008c08010000013feb55ff74000f0ea850209a69000094000012000000
1e09010002000300040016014703f0001504c8000c0900730a00460b00501300464306
d7440000b5000bb60007422e9f180000cd0386ce000107c700000000f10000601a4600
0001344800000bb84900000bb84a00000bb84c00000000024e000000000000000cf00
00000000000000000100003fca
```

In total 152 Bytes.

```
00000000 4 zeroes, 4 bytes
0000008c data length, 4 bytes
```

08 - Codec ID

0- Number of Data (1 record)

1'st record data

0000013feb55ff74 - Timestamp in milliseconds
(1374042849140)

GMT: Wed, 17 Jul 2013 06:34:09 GMT

00 - Priority

GPS Element

0f0ea850 - Longitude 252618832 = 25,2618832° N

209a6900 - Latitude 546990336 = 54,6990336 ° E

0094 - Altitude 148 meters

0 - Angle 214°

12 - 12 Visible sattelites

0 - 0 km/h speed

IO Element

00 - IO element ID of Event generated (in this case when

00 - data generated not on event)

1e - 30 IO elements in record (total)

09 - 9 IO elements, which length is 1 Byte

0 - IO element ID = 01

0 - IO element's value = 0

02 - IO element ID = 02

0 - IO element's value = 0

03 - IO element ID = 03

0 - IO element's value = 0

04 - IO element ID = 04

0 - IO element's value = 0

16 - IO element ID = 22 (dec)

0 - IO element's value = 1

47 - IO element ID = 71 (dec)

03 - IO element's value = 3

F0 - IO element ID = 240 (dec)

0 - IO element's value = 0
 15 - IO element ID = 21 (dec)
04 - IO element's value = 0
 C8 - IO element ID = 200 (dec)
 0 - IO element's value = 0

0C - 12 IO elements, which value length is 2 Bytes

09 - IO element ID = 9 (dec)
0073 - IO element's value
 0a - IO element ID = 10 (dec)
0046 - IO element's value
 0b - IO element ID = 11 (dec)
0050 - IO element's value
 13 - IO element ID = 19 (dec)
0046 - IO element's value
 43 - IO element ID = 67 (dec)
06d7 - IO element's value
 44 - IO element ID = 68 (dec)
 0 - IO element's value
 B5 - IO element ID = 181 (dec)
000b - IO element's value
 B6 - IO element ID = 182 (dec)
0007 - IO element's value
 42 - IO element ID = 66 (dec)
2e9f - IO element's value
 18 - IO element ID = 24 (dec)
 0 - IO element's value
 cd - IO element ID = 205 (dec)
0386 - IO element's value
 CE - IO element ID = 206 (dec)
 0 - IO element's value

07 - 7 IO elements, which value length is 4 Bytes

C7 - IO element ID = 199 (dec)
 0 - IO element's value
 f1 - IO element ID = 241 (dec)
0000601a - IO element's value
 46 - IO element ID = 70 (dec)
00000134 - IO element's value
 48 - IO element ID = 72 (dec)
00000bb8 - IO element's value
 49 - IO element ID = 73 (dec)
00000bb8 - IO element's value
 4a - IO element ID = 74 (dec)
00000bb8 - IO element's value
 4c - IO element ID = 76 (dec)
 0 - IO element's value

02 - 2 IO elements, which value length is 8 Bytes

4e - IO element ID = 78 (dec)

0 - IO element's value
cf - IO element ID = 207 (dec)
0 - IO element's value

0 -Number of Data (1 record)

00003fca - CRC-16, 4 Bytes (first 2 are always zeroes)

2. SENDING DATA OVER TCP/IP

First when module connects to server, module sends its IMEI. First comes short identifying number of bytes written and then goes IMEI as text (bytes).

For example IMEI 356307042441013 would be sent as `000f333536333037303432343431303133`

First two bytes denote IMEI length. In this case 000F means, that imei is 15 bytes long.

After receiving IMEI, server should determine if it would accept data from this module. If yes server will reply to module `01` if not `00`. Note that confirmation should be sent as binary packet. I.e. 1 byte 0x01 or 0x00.

Then module starts to send first AVL data packet. After server receives packet and parses it, server must report to module number of data received as integer (four bytes).

If sent data number and reported by server doesn't match module resends sent data.

Example:

Module connects to server and sends IMEI:

`000f333536333037303432343431303133`

Server accepts the module:

`01`

Module sends data packet:

<i>AVL data packet header</i>	<i>AVL data array</i>	<i>CRC</i>
Four zero bytes, 'AVL data array' length – 254	CodeId – 08, NumberOfData – 2. (Encoded using continuous bit stream. Last byte padded to align to byte boundary)	CRC of 'AVL data array'
<code>00000000000000FE</code>	<code>0802...(data elements)...02</code>	<code>00008612</code>

Server acknowledges data reception (2 data elements):

`00000002`

3. SENDING DATA OVER UDP/IP

3.1 UDP channel protocol

UDP channel is a transport layer protocol above UDP/IP to add reliability to plain UDP/IP using acknowledgment packets. The packet structure is as follows:

<i>UDP datagram</i>			
UDP channel packet x N	Packet length	2 bytes	Packet length (excluding this field) in big endian byte order
	Packet Id	2 bytes	Packet id unique for this channel
	Packet Type	1 byte	Type of this packet
	Packet payload	m bytes	Data payload

<i>Packet Type</i>	
1	Data packet requiring acknowledgment

Acknowledgment packet should have the same *packet id* as acknowledged data packet and empty data payload. Acknowledgement should be sent in binary format.

<i>Acknowledgment packet</i>		
Packet length	2 bytes	0x0003
Packet id	2 bytes	same as in acknowledged packet
Packet type	1 byte	0x02

3.2 Sending AVL data using UDP channel

AVL data are sent encapsulated in UDP channel packets (*Data payload* field).

<i>AVL data encapsulated in UDP channel packet</i>		
AVL packet id (1 byte)	Module IMEI	AVL data array

AVL packet id (1 byte) – id identifying this AVL packet

Module IMEI – IMEI of a sending module encoded the same as with TCP

AVL data array – array of encoded AVL data

<i>Server response to AVL data packet</i>	
AVL packet id (1 byte)	Number of accepted AVL elements (1 byte)

AVL packet id (1 byte) – id of received AVL data packet

Number of AVL data elements accepted (1 byte) – number of AVL data array entries from the beginning of array, which were accepted by the server.

Module sends UDP channel packet with encapsulated AVL data packet (*Packet type=1* or 0). If packet type is 0, server should respond with valid UDP channel acknowledgment packet. Since server should respond to the AVL data packet, UDP channel acknowledgment is not necessary in this scenario, so *Packet type=1* is recommended.

Server sends UDP channel packet with encapsulated response (*Packet type=1* – this packet should not require acknowledgment)

Module validates *AVL packet id* and *Number of accepted AVL elements*. If server response with valid *AVL packet id* is not received within configured timeout, module can retry sending.

Example:

Module sends the data:

<i>UDP channel header</i>	<i>AVL packet header</i>	<i>AVL data array</i>
Len – 253, Id – 0xCAFE, Packet type – 01 (without ACK)	AVL packet id – 0xDD, IMEI – 1234567890123456	CodecId – 08, NumberOfData – 2. (Encoded using continuous bit stream)
00FDCAFE01	DD000F3133343536373839303132333435	0802...(data elements)...02

Server must respond with acknowledgment:

<i>UDP channel header</i>	<i>AVL packet acknowledgment</i>
Len – 5, Id – 0xABCD, Packet type – 01 (without ACK)	AVL packet id – 0xDD, NumberOfAcceptedData – 2
0005ABCD01	DD02

Another example, with all IO id's enabled

Server received data:

```
00a1cafe011b000f33353633303730343234343130313308010000013febdd19c8000f
0e9ff0209a71800069000012000001e09010002000300040016014703f0001504c800
0c0900910a00440b004d130044431555440000b5000bb60005422e9b180000cd0386ce
000107c700000000f10000601a460000013c4800000bb84900000bb84a00000bb84c00
000000024e0000000000000000cf000000000000000001
```

Data length: 00a1 or 161 Bytes (not counting the first 2 data length bytes)

Packet identification: 0xCAFE 2 bytes

Packet type: 01

Packet id: 1b

Imei length: 000f

Actual imei: 333536333037303432343431303133

Codec id: 08

Number of data: 01

Timestamp: 0000013febdd19c8

Priority: 00

GPS data: 0f0e9ff0209a718000690000120000

UDP protocol is the same as TCP except message header is 7 bytes, which consist of: data length, packet identification, packet type and packet id.

Then goes imei length and imei itself.

And after that goes AVL data.

And at the very end number of data byte. There is no CRC in UDP.

4. SENDING DATA USING SMS

AVL data or events can be sent encapsulated in binary SMS. TP-DCS field of these SMS should indicate that message contains 8-bit data (for example: TP-DCS can be 0x04).

<i>SM data (TP-UD)</i>	
<i>AVL data array</i>	<i>IMEI: 8 bytes</i>

AVL data array – array of encoded AVL data

IMEI – IMEI of sending module encoded as a big endian 8-byte long number.

5. SMS EVENTS

When configured to generate SMS event user will get this SMS upon event

<Year/Month/Day> <Hour:Minute:Second> Lon:<longitude> Lat:<latitude> Q:<HDOP> <SMS Text> Val:<Event Value>

Example:

2016/04/11 12:00:00 Lon:51.12258 Lat: 25.7461 Q:0.6 Digital Input 1 Val:1

6. CHANGE LOG

Nr.	Date	New version number	Comments
1	2018.02.08	1	Document created.
2	2018.08.31	1.2	Added Ultra Deep Sleep value of Sleep Mode property (ID 200) in Permanent I/O elements table.