FLEET MAINTENANCE SCHEDULES (DELIVERY)

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Solution description

Delivery service is a business where efficiency is everything. Customers expect their goods to be delivered in time and meeting these expectations is a must if the company wants to make a solid profit. Anything what causes delays should be minimized or eliminated. Facilitated by GPS devices, timely vehicle maintenance can greatly reduce the number of irregularities and, thus, help the business grow.

We glad that you decide to test our "Fleet Maintenance Schedules (Delivery)" solution.

Here you will find how to prepare and to test this solution.

What you need for a solution?

- Teltonika FM device which is compatible with this use case and have OBD connection and can read OBDII data. Recommended devices: FMB001, FMC001, FMM001, FMB003, FMB002. Also, it is possible to use FMP100 via Bluetooth® function but it requires Bluetooth® OBDII dongle.

- The SIM card in order to get data to your server.
- FOTA to remotely send the configuration to the device.
- Teltonika Configurator to set up FM device correctly for the solution.

Installation

Connecting the device to the vehicle:

- Before connecting the device to the OBDII socket, make sure that ≥3A fuse is present on OBD connector power supply.
- Find OBDII connector in your vehicle (Figure 1.) if you need more accurate location please visit [Location of OBD plug](#).

Figure 1. Most common OMBDII connector locations

Configuration

1. Prerequisites:

1.1. Read through [First start guide](#)

1.2. Understanding of possible [Sleep modes](#).

2. Configuring Fleet Maintenance Schedules:

Parameter ID - Parameter name

Trip settings:

- 11800 - Scenario priority (0 - Disable, 1 - Low, 2 - High, 3 - Panic).

- 11801 - Eventual settings (0 - Disable, 1 - Enable), if disabled - trip settings will come with periodical data.

- 11802 - Mode (0 - Continuous, 1 Between Records). If Between Records option is selected distance will be counted until any record is made. Then odometer will be reset to zero and start counting until next record is made. When it is set to Continuous, Trip distance is going to be counted continuously (from Trip start to Trip end) and written to I/O Trip Odometer value field. When Trip is over and the next Trip begins, Trip Odometer value is reset to zero.
- 11803 - Start Speed (km/h). This parameter is needed if you want to start the trip on specific speed, If start speed selected 0 the trip only will work then ignition is on.
- 11804 - Ignition OFF timeout (s) is the timeout value to detect Trip end once the Ignition (configured ignition source) is off.
- 7031 - ID of SMS recipient.

- 8031 - SMS Text.

- 11806 - Odometer Calculation Source (0 - GNSS, 1 - OBD).
- 11807 - current Odometer Value (km). Odometer data will be counted from provided value.

Ignition source will be used to determine ignition of vehicle.

Possible ignition sources:

- **DIN 1** (Digital Input 1) - if *DIN1* is 1 - ignition is ON; if *DIN1* value is 0 - ignition is OFF;
- **Power Voltage** - if voltage is between High Voltage Lever and Low Voltage Level (below *Ignition Settings* options) - ignition is ON; if voltage is higher than High Voltage Lever or lower than Low Voltage Level - ignition is OFF.
- **Engine RPM** - if *RPM* from OBD II or CAN is higher than 0 - ignition is ON; if *RPM* from OBD II or CAN is equal to 0 - ignition is OFF;
- **Accelerometer** - if movement sensor detects movement - ignition is ON; if movement is not detected - ignition is OFF;

More than one ignition source can be selected at the same moment. When there are 2 or more sources selected, at least one condition has to be met to change Ignition status.

Example: DIN1 and Accelerometer are selected as the Ignition source. When the device detects movement, Ignition status will change to 1, regardless that DIN1 value is 0. Users can select movement start and movement stop delay time - those parameters are used when the accelerometer is selected as an ignition source. Ignition status is used in power management and the following functionalities: Eco/Green Driving, Excessive Idling, Fuel Consumption, Over Speeding, Towing Detection and Trip.

Ignition Source:

- 101 - Eventual settings (1 - DIN 1, 2 - Accelerometer, 4 - Power Voltage, 8 - Engine RPM).

- 104 - Hight Voltage (MIN - 0, MAX - 30000).
- 105 - Low Voltage (MIN - 0, MAX - 29999).

Quick start: From default configuration to Fleet Maintenance Schedules in one SMS:

" setparam 11800:1;11801:0;101:4;104:30000;105:12000"

Note: Before SMS text, two space symbols should be inserted if no SMS username or password was set in SMS \ Call settings.

After configuration device start parameters now we go to configure OBD II elements.

In the photo below (this is example case) you see where you must go to configurate main parameter that you need to have from device.

In OBD II window you see a lot of I/O elements to configure the device properly you will need to know which parameters can be read from the vehicle using our OBD trackers. To know what parameters can be read please visit How to check available OBDII data.

Number Of DTC		None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Engine Load	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Coolant Temperature	°C	None	Low	High	Panic	-40	215	Crash	Yes	No	On Change	⌄
Short Fuel Trim	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Fuel Pressure	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Intake MAP	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Engine RPM	rpm	None	Low	High	Panic	0	16384	Crash	Yes	No	Monitoring	⌄
Vehicle Speed	km/h	None	Low	High	Panic	0	255	Crash	Yes	No	Monitoring	⌄
Timing Advance	°	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Intake Air Temperature	°C	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
MAF	g/sec	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Throttle Position	%	None	Low	High	Panic	0	100	Crash	Yes	No	Monitoring	⌄
Run Time Since Engine Start	s	None	Low	High	Panic	0	65535	Crash	Yes	No	Monitoring	⌄
Distance Traveled MIL On	km	None	Low	High	Panic	0	65535	Crash	Yes	No	Monitoring	⌄
Relative Fuel Rail Pressure	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Direct Fuel Rail Pressure	kPa	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
Commanded EGR	%	None	Low	High	Panic	0	0	Crash	Yes	No	Monitoring	⌄
EGR Error	%	None	Low	High	Panic	-100	100	Crash	Yes	No	On Change	⌄
Fuel Level	%	None	Low	High	Panic	0	100	Crash	Yes	No	On Change	⌄

Parsing information

1.Prerequisites:

1.1. Open TCP/UDP port

1.2. Go to Java parser first start guide

2.Parsing example:

Unparsed received data in hexadecimal stream

00000000000004d608130000017738b113a8000efcea74209c63c200b60096050010000c05ef01f0011505c800
450105b50008b600074230fB6c430f3d44006b02f10000601a1000038753000
000017738b1241790000efceb6e
209c63d05b50008b600074230
ff430f3d44006b020000601a100003875300002900017738b11f600001f0011505

| AVL Data Packet Part	HEX Code Part
Zero Bytes	00 00 00 00
Data Field Length	00 00 04 d6
Codec ID	08 (Codec 8)
Number of Data 1 (Number of Total Records)	13
Timestamp	00 00 01 77 38 b1 13 a8 (Mon Jan 25 08:37:46 UTC 2021)
Priority	00
Longitude	00 01 77 38

Latitude	b1 13 a8 00
Altitude	0e fc
Angle	ea 74
Satellites	20
Speed	9c 63
N of Total ID	12
N1 of One Byte IO	09
1'st IO ID	EF (AVL ID: 239, Name: Ignition)
1'st IO Value	01
2'nd IO ID	F0 (AVL ID: 240, Name: Movement)
2'nd IO Value	01
3'rd IO ID	15 (AVL ID: 21, Name: GSM Signal)
3'rd IO Value	05
4'th IO ID	50 (AVL ID: 200, Name: Sleep Mode)
4'th IO Value	00
5'th IO ID	45 (AVL ID: 69, Name: GNSS Status)
5'th IO Value	01
N2 of Two Byte IO	5
1'st IO ID	B5 (AVL ID: 181, Name: GNSS PDOP)
1'st IO Value	8
2'nd IO ID	B6 (AVL ID: 32, Name: Coolant Temperature)
2'nd IO Value	61
3'rd IO ID	42 (AVL ID: 66, Name: External Voltage)
3'rd IO Value	30 FC
4'th IO ID	43 (AVL ID: 67,Name: Battery Voltage)
4'th IO Value	0F 3D
5'th IO ID	24 (AVL ID: 36, Name: Engine RPM)
5'th IO Value	06 A2
N4 of Four Byte IO	02
1'st IO ID	29 (AVL ID: 41, Name: Throttle Position)
1'st IO Value	5E
2'nd IO ID	(AVL ID: 16, Name: Total Odometer)
2'nd IO Value	03 87 53
CRC-16	00 00 73 2E

Demonstration in platform

TAVL: Open TAVL → select client → select Street Map → select device → choose the date from which to which to show the records → push advanced → push show button and then you will see in left down corner all information.
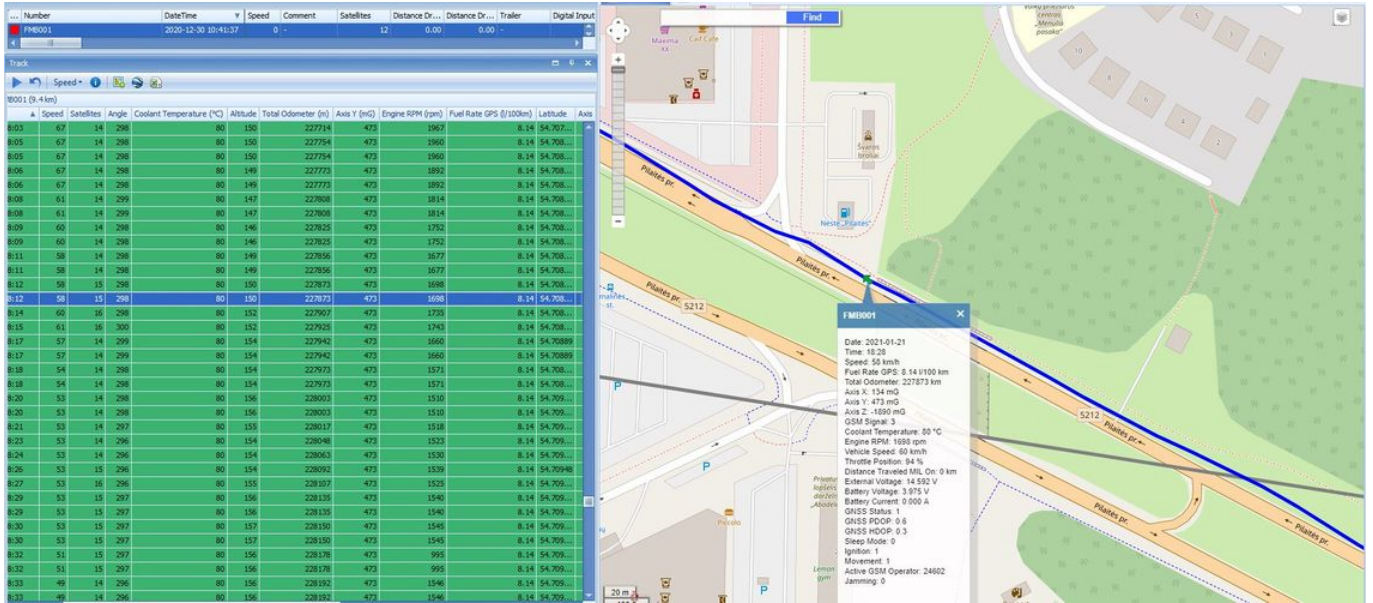
WIALON: Open WIALON → open messages → push unit (select your device) → choose the date from which to which to show the records → select message (data messages) → push execute button and you will see all information.