Configurable navigation filtering

Introduction

Due to natural GNSS position drift or bad signal quality, the device may generate inaccurate coordinates This may result in inaccurate movement trajectories and incorrect reports. The configurable navigation filtering functionality consists of stationary and active filtering and can be configured according to user needs.

Stationary navigation filtering

The stationary navigation filter functionality allows to solve the inaccurate coordinates issue by discarding coordinates while the vehicle is not moving.

Active navigation filtering

The active navigation filter functionality discards inaccurate coordinates by evaluating the vehicle's movement speed. Active navigation filtering compares the GPS distance between the last two received coordinates and the maximum possible distance that is calculated by the device. If the GPS distance is greater than the calculated maximum possible distance, then the latest GPS coordinate is discarded.

Compatibility

This functionality is compatible with the following FM devices with the latest firmware version:
- FM-Tco4 HCV
- FM-Tco4 LCV
- FM-Pro4
- FM-Eco4
- FM-Eco4 S
- FM-Plug4

You can get the latest firmware and configurator from our documentation website: doc.ruptela.lt

Legal notice

Document change log

Date	Version	Change details
2019-01-25	1.0	Initial draft.
2019-03-05	1.1	Added active navigation filtering functionality.
2019-07-12	1.2	Added active navigation filtering functionality to FM-Eco4.

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Configuration

Follow these steps to configure the navigation filtering functionality:

Start	1. Open the FM device configurator and select your device. 2. Click the **GPS navigation filtering Customize** button in the **Data collection** section. A new **Navigation filtering** window will open.

Stationary navigation filtering	3. Tick the **Stationary navigation filter** checkbox to enable the stationary filter functionality. (**Engine** *Ignition(DIN4)* or *Custom* must be selected in the Data collection section).
	4. Set the **Switch ON conditions** which indicate conditions when filtering enables. One following parameter is available:
	   ● **Delay** – for how long the engine must be turned off for the filter to be enabled. The default value is 600 seconds, the input range is from 0 to 3600 seconds.
	5. Set the **Switch OFF conditions** which disable filtering when the conditions of the following parameters are met:
	   ● **Speed** – the minimum speed value. The **Speed duration** condition must also be met. The default value is 40 km/h, the input range is from 0 to 240 km/h.
	   ● **Speed duration** – for how long the speed of the vehicle is greater than or equal to the **Speed** value. The default value is 5 seconds, the input range is from 0 to 3600 seconds.
	   ● **Movement duration** – the minimum movement duration of the vehicle. The filter is disabled if the condition is met independently of the **Speed** and **Speed duration** conditions. The default value is 240 seconds, the input range is from 0 to 3600 seconds.
	   ● The **High priority event** drop-down list determines if high priority events disable the filter. The default value is *Enabled*, which turns off the filter when a high priority event occurs. Selecting *Disabled* will not turn off the filter if a high priority event occurs.
	6. This Note provides information in which profiles the functionality is enabled. The functionality will be enabled in a specific profile if *Ignition(DIN4)* or *Custom* is selected as the **Engine** source in that profile.

Active navigation filtering	7. Tick the **Active navigation filter** checkbox to enable the active filter functionality. Any of the **Engine** options can be selected. 8. One **Active navigation filter** parameter is available: ● **Allowed acceleration** – used in the calculation of the maximum possible distance. The default value is 19.6 m/s^2, the input range is from 9.8 to 60 m/s^2.
Finish	9. After configuring the functionality, click the **Close** button to close the **Navigation filter** window and send the configuration to the device.

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