Teseo III and Teseo modules data logging

Quick Training Guide

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Introduction

- Teseo III – Binary Image and Teseo Modules embed also the Data-Logging sub system
- Data-Logging can be used to track/record a path
- Data-Logging subsystem has a set of specific NMEA commands and messages to operate

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Create a log

A log is created to specify:

- Configuration
- Log type
- Lowest speed, lowest rate and lowest distance to record a new sample in the log

```
$PSTMLOGCREATE,<cfg>,<min-rate>,<min-speed>,<min-position>,<logmask>*<checksum><cr><lf>
```

Configuration:
- Enable Circular-buffer
- Alarm buffer-full

Lowest rate, lowest speed and lowest distance to record a new sample in the log

Log-type

Start, stop and delete a log

- A log can be started, stopped and deleted by the host with the following commands:

```
$PSTMLOGSTART*<checksum><cr><lf>
```

```
$PSTMLOGSTOP*<checksum><cr><lf>
```

```
$PSTMLOGERASE*<checksum><cr><lf>
```

Query the data-logging state

Host can query the datalogging subsystem state with the command:

```
$PSTMLOGREQSTATUS*<checksum><cr><lf>
```

Teseo III replies with the message:

```
$PSTMLOGSTATUS,<time-first-entry>,<data-first-entry>,<time-last-entry>,<data-last-entry>,<nr-used-entries>,<buffer-status>,<free-entries>*<checksum><cr><lf>
```

Where it reports:

- Time and date of the first and last sample*
- Number of used and free entries
- Buffer status

* The first entry is marked internally and it has to be skipped

Query the log data

- Host can query the log with the command:

```
$PSTMLOGREQQUERY,<start-timestamp>,<start-datestamp>,<numentry>*<checksum><cr><lf>
```

- Teseo III replies with one message per sample:

```
$PSTMLOGQUERY,<status-bitmap>,<logask>,<timestamp>,<datestamp>,<altitude>,<odometer>,<geo>,
<quality>,<qualidx>,<fix>,<speed>*<checksum><cr><lf>
```

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Putting all together…

Using the Teseo-Suite, the Host can send the commands and check the Teseo III message responses.

```
HOST > $PSTMLOGCREATE,1,1,0,0,1

T3   < $PSTMLOGCREATEOK*5E

HOST > $PSTMLOGSTART

T3   < $PSTMLOGSTARTOK*1A

HOST > $PSTMLOGSTOP

T3   < $PSTMLOGSTOPOK*42

HOST > $PSTMLOGREQSTATUS

T3   < $PSTMLOGSTATUS,084126,20181128,084146,20181128,21,0,43627*67

HOST > $PSTMLOGREQQUERY,084127,20181128,20

T3   < $PSTMLOGQUERY,1,1,084126,20181128,3,2,1,37.441792,15.060400,0.0,0.0,0.0*0c

T3   < $PSTMLOGQUERY,3,1,084146,20181128,3,2,1,37.441792,15.060400,0.0,0.0,0.0*09

HOST > $PSTMLOGERASE

T3   < $PSTMLOGERASEOK*1A
```

Take care of…

The first field in the $PSTMLOGQUERY is a bitmap which specifies:

- 2b00: No more data, and the data in the message is invalid
- 2b01: more data available, and the data in the message is valid
- 2b11: No more data available, and the data in the message is valid

```
T3    < $PSTMLOGQUERY,3,1,084127,20181128,3,2,1,37.441792,15.060400,0.0,0.0,0.0*0c
```

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Documents & related resources

All documents are available on: www.st.com

- Teseo III: Webpage
  - Datasheet of all PNs;
- Teseo Modules: Webpage
  - Datasheet
  - User Manuals
- Teseo-Suite: Webpage
  - Datasheet
  - Training materials
  - Install program