Teseo III and Teseo GNSS modules: Geofencing subsystem

Quick Training Guide
January 2020
Contents

1. Introduction
2. Geofence in Polling mode
3. Geofence in Async mode
4. Documents & related resources
Contents

1 Introduction
2 Geofence in Polling mode
3 Geofence in Async mode
4 Documents & related resources
Teseo III GNSS chips and modules also embed a Geofence subsystem able to notify the host if the current position falls inside/outside a set of pre-programmed circles.

- The Geofence subsystem supports
  - Up to 8 configurable circles (4 circle configurable in the firmware)
  - Polling and/or asynchronous notification

- The Geofence subsystem can be programmed using the NMEA command API
## Contents

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>2</td>
<td>Geofence in Polling mode</td>
</tr>
<tr>
<td>3</td>
<td>Geofence in Async mode</td>
</tr>
<tr>
<td>4</td>
<td>Documents &amp; related resources</td>
</tr>
</tbody>
</table>
Configure a circle:
$PSTMGEOFENCECFG,<id>,<en>,<tol>,<lat>,<lon>,<rad>
$PSTMGEOFENCECFG,0,1,1,37.441699,15.0602,150

Check the Geofence status:
$PSTMGEOFENCEREQ
$PSTMGEOFENCEREQ

Replay Teseo III:
$PSTMGEOFENCESTATUS,<timestamp>,<datestamp>,<status_1>,...,<status_x>$PSTMGEOFENCESTATUS,092007,20200110,3,0,0,0,0,0,0,0,0

Circle–status meaning:
0: Status unknown: Circle disabled or No PVT solution available (i.e: during power-on)
1: PVT solution outside of the circle
2: PVT solution outside of the circle boundary
3: PVT solution inside of the circle
Contents

1 Introduction
2 Geofence in Polling mode
3 Geofence in Async mode
4 Documents & related resources
Prepare the Geofence Async Mode

1. Configuring the firmware enabling the async $PSTMGEOFENCE message in the message-list (only once)

$PSTMSETPAR,1228,80000,1
$PSTMSAVEPAR
$PSTMSRR
Geofence runtime async mode

1. Configure a circle:
   $PSTMGEOFENCECFG,<id>,<en>,<tol>,<lat>,<lon>,<rad>
   $PSTMGEOFENCECFG,0,1,1,37.441699,15.0602,150

2. When PVT solution updates a circle-status (i.e.: PVT solution enter/exit from a circle), Teseo III will send the message:
   $PSTMGEOFENCE,144553,20200109,0,37.441703,15.05990,140.0,10.7,10.2,3*1E

Take care that the $PSTMGEOFENCE is sent only once on circle-status-update
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>2</td>
<td>Geofence in Polling mode</td>
</tr>
<tr>
<td>3</td>
<td>Geofence in Async mode</td>
</tr>
<tr>
<td>4</td>
<td>Documents &amp; related resources</td>
</tr>
</tbody>
</table>
Documents & Related Resources
Available on st.com

- **Teseo III**: Webpage
  - Datasheets

- **Teseo Modules**: Webpage
  - Datasheets

- **Teseo-Suite**: Webpage
  - Datasheet
  - Install program
  - User manual and Training material