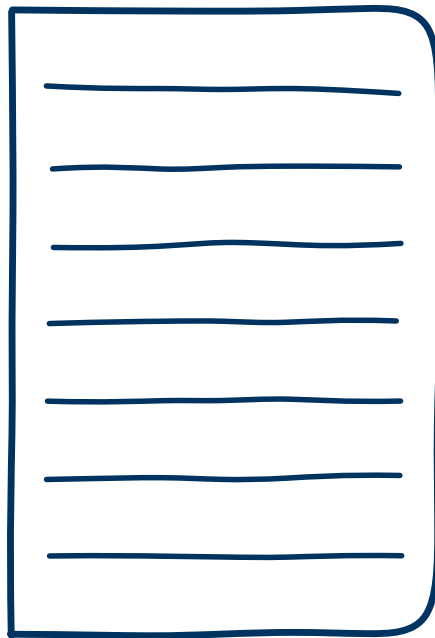


LightGuard GSM Revision 3

Specification

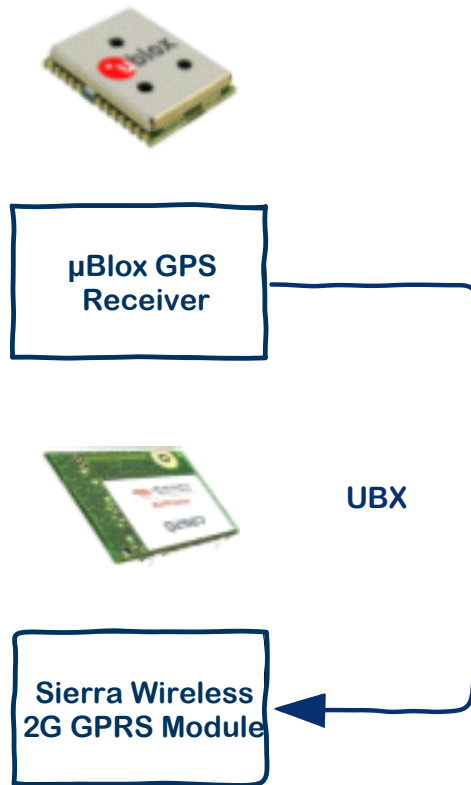


Specification

- To be integrated in several products
- Modbus communication to HD
- HTTP based communication to a server
- sessions triggered by HD events or PUSH
- GPS position monitoring
- astronomic clock
- Cuxhaven calendar
- hassle free

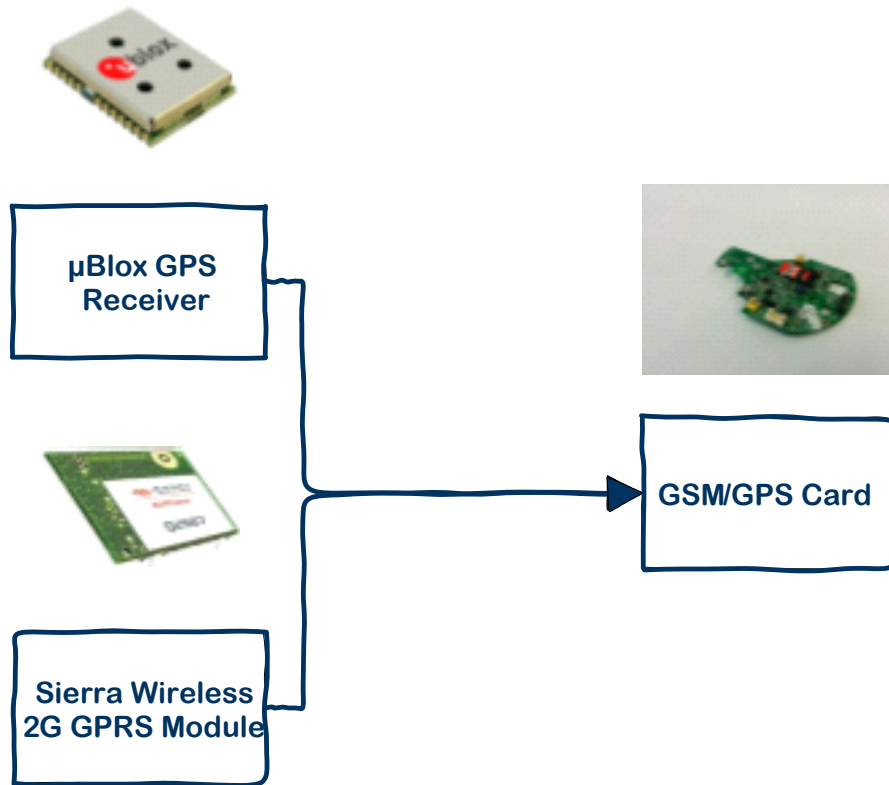
Which Device Should I Use For
Development?





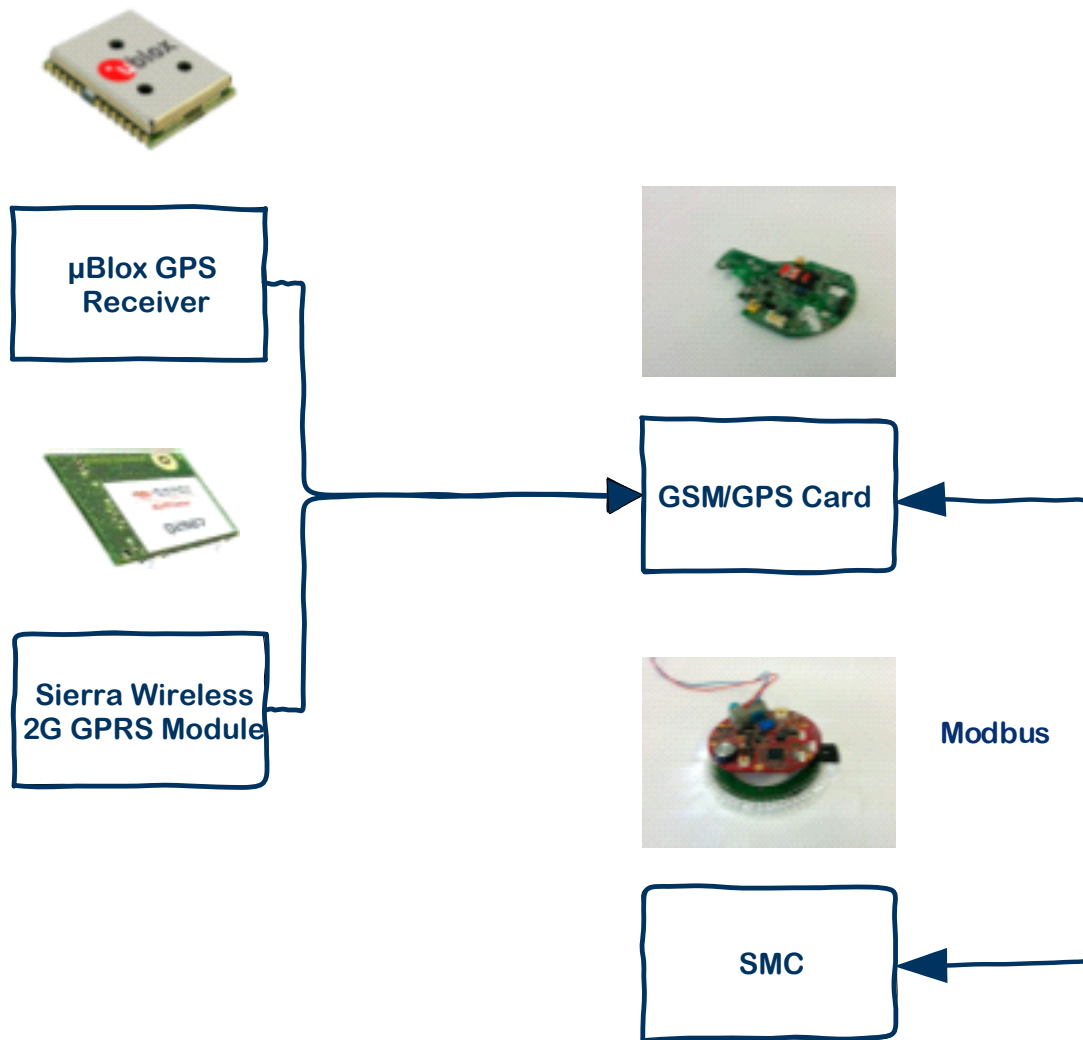
UBX Protocol

- UTC Timestamp
- Position Latitude & Longitude
- Navigation Solution
- Reading Interval: depends on configuration



GSM/GPS card enables

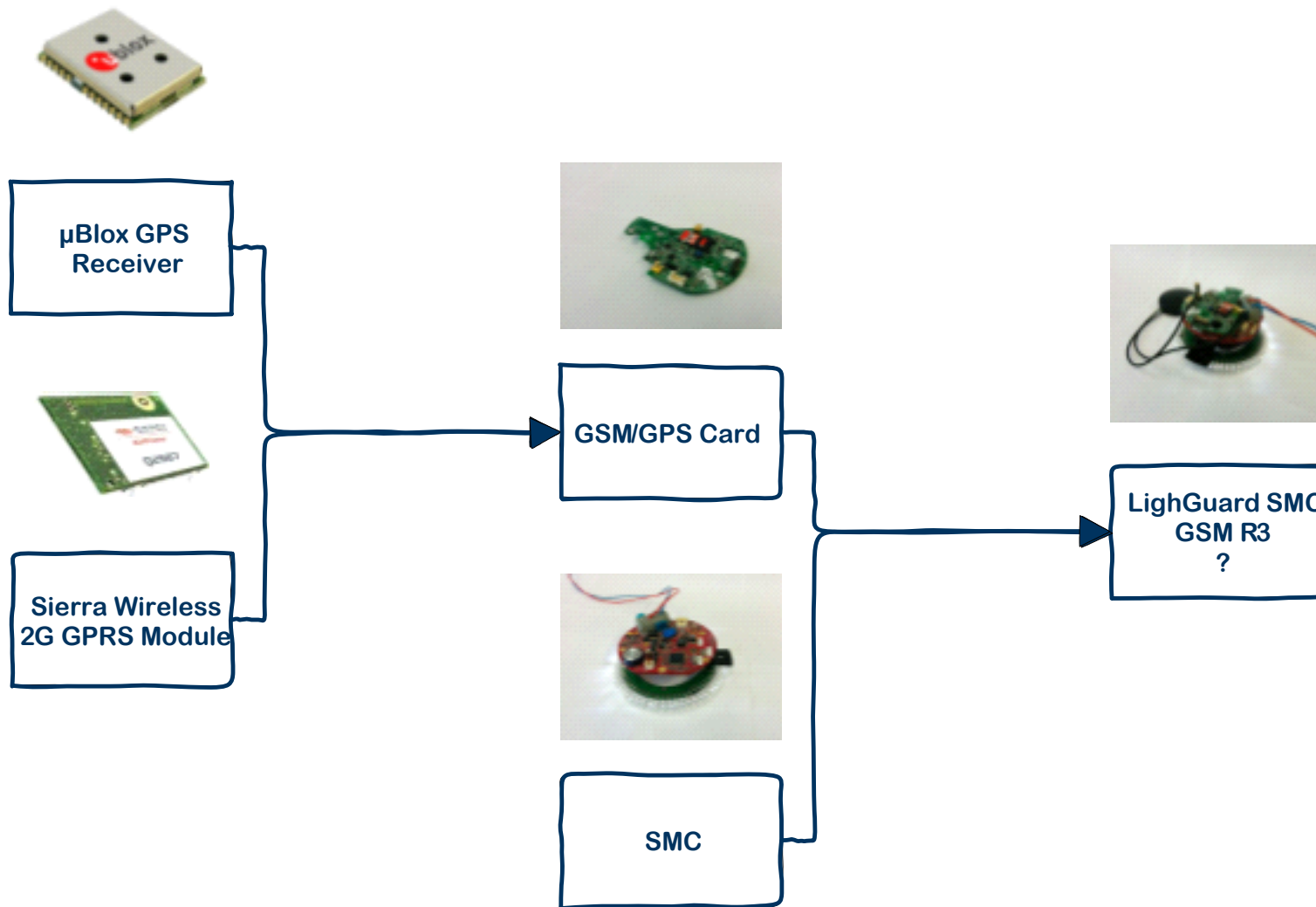
- Astronomic Clock
- Cuxhaven Calendar
- Position Monitoring



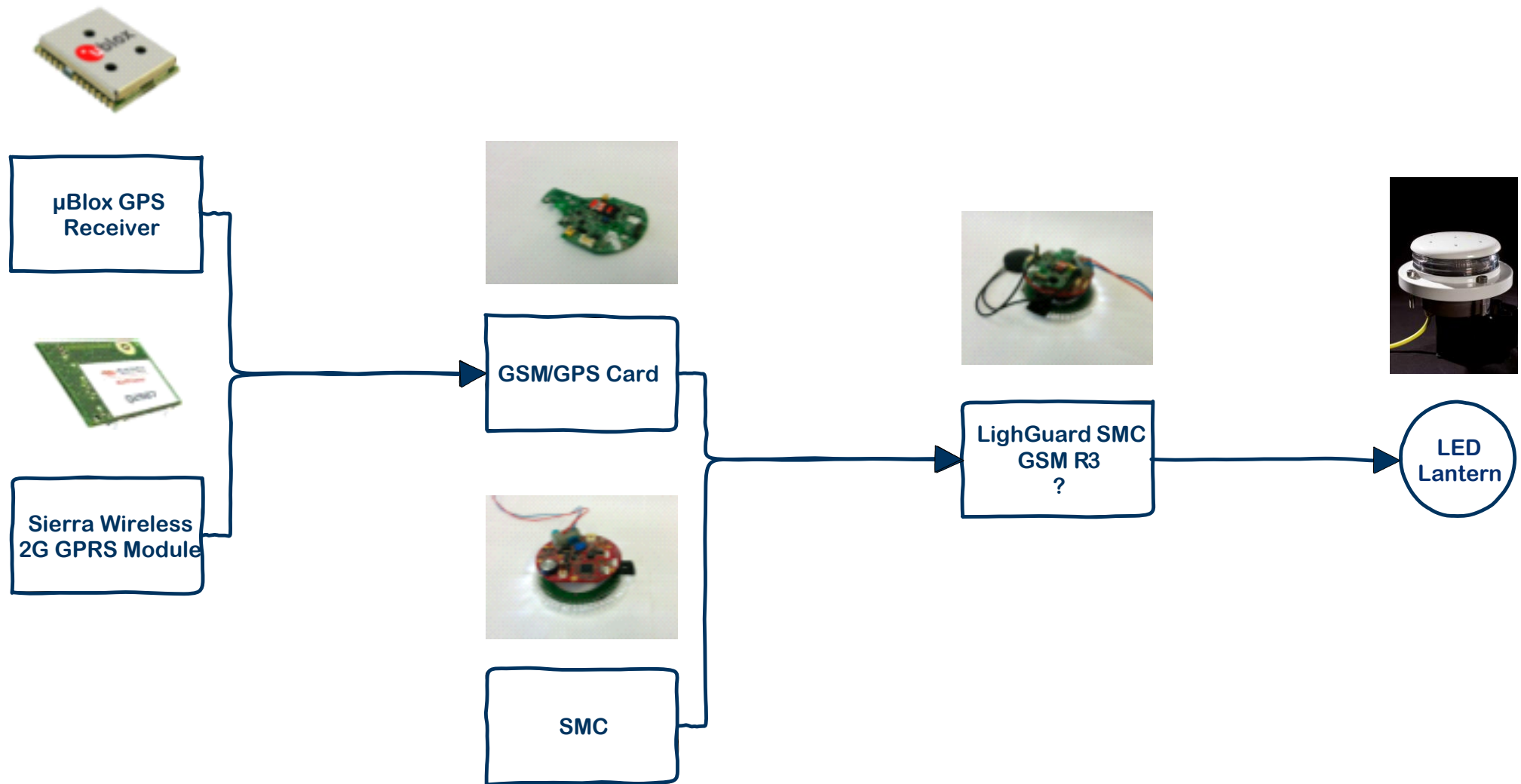
Modbus Protocol

- Status data (RAM)
- Configuration data (EEPROM)
- Events flags
- Reading interval: 10 min

LightGuard GSM R3 – Behind The Scenes



LightGuard GSM R3 – Behind The Scenes

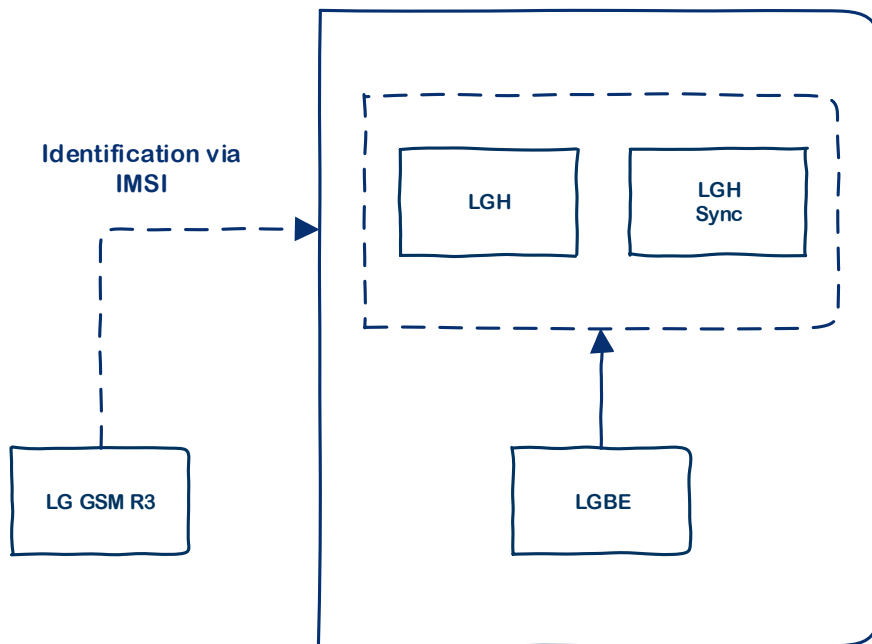




LED Lantern

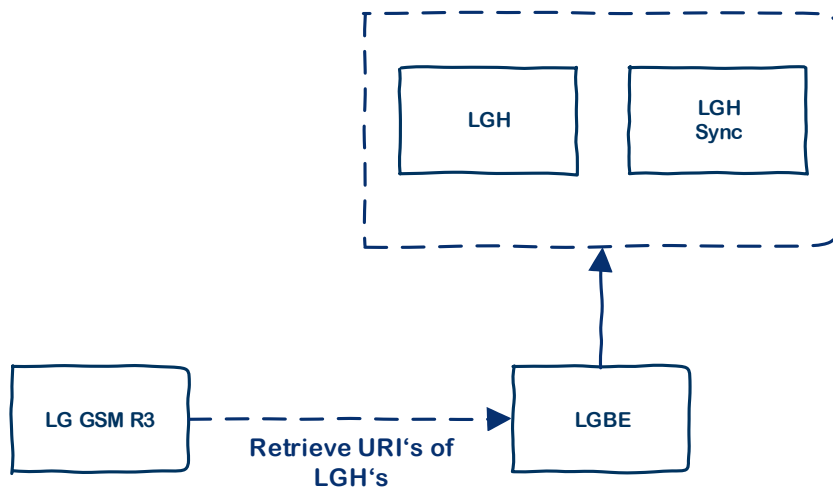
- Integrated Flasher with Photocell
- GPS Receiver
- GSM/GPRS Modem
- Astronomic Clock
- Cuxhaven Calendar

The Thing Between LGM and LG GSM R3 – Identification



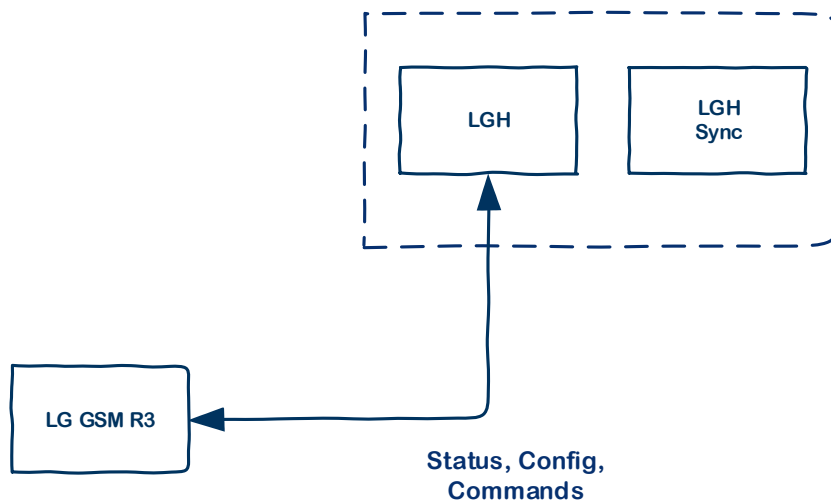
Each session requires a login procedure. LG GSM R3 distinctive mark is the unique SIM IMSI.

The Thing Between LGM and LG GSM R3 – First Contact



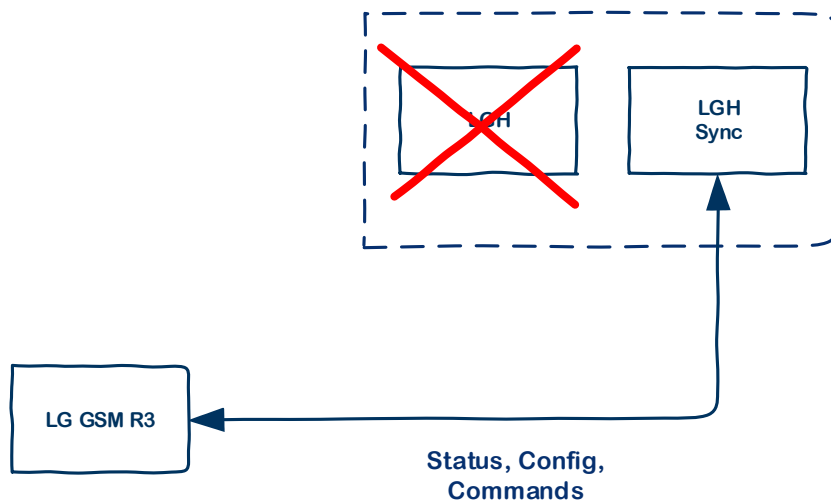
After Power-on-Reset LG GSM R3 will retrieve URI's of dedicated Hubs.

The Thing Between LGM and LG GSM R3 – Communication



Status, Configuration and Commands
exchanged between “Master” LGH
and
LG GSM R3

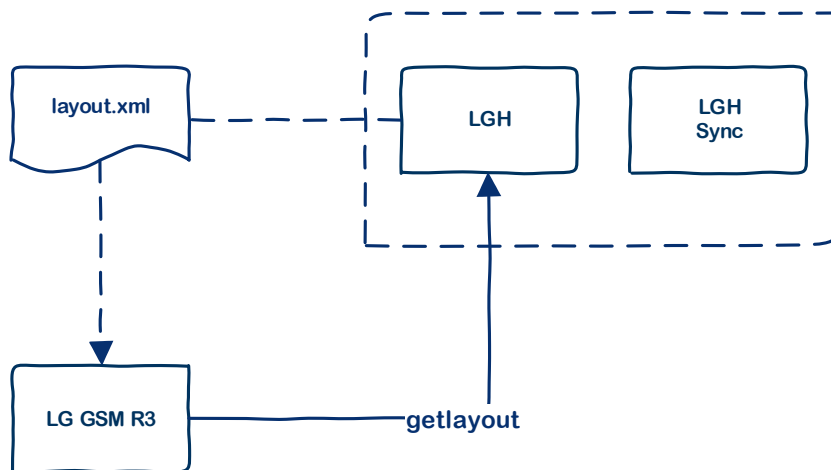
The Thing Between LGM and LG GSM R3 – One Fails



LG GSM R3 will automatically switch
to
LGH Sync if “Master” fails.

The Thing Between LGM and LG GSM R3 – Data Layout

#1



~~Station data is defined by a layout file~~

To be honest: For the time being
layout.xml is hardcoded in firmware.

The Thing Between LGM and LG GSM R3 – Data Layout

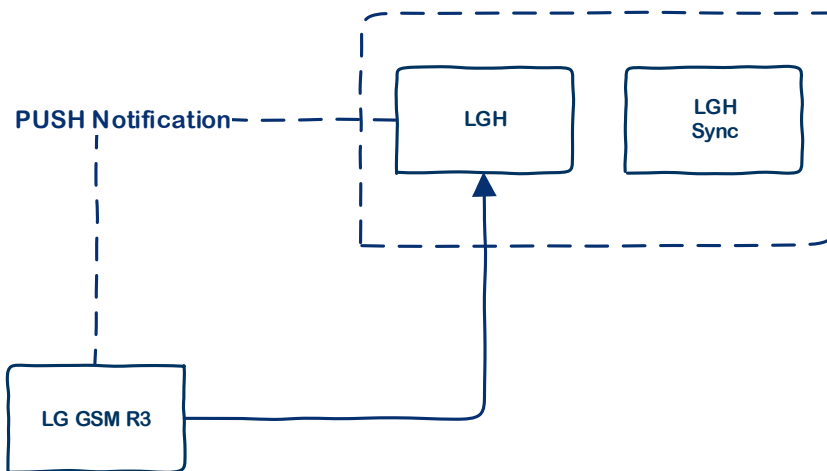
#2

layout.xml

```
<LAYOUT_HD>  
  
<Item ... "STA_BEACFAIL" ... />  
<Item ... "STA_BEACMODE" ... />  
<Item ... "STA_LOWBATT" ... />  
<Item ...  
  
<Item ... "CFG_BEACMODE" ... />  
<Item ... "CFG_INTENSITY" ... />  
<Item ... "CFG_DISTFIX" ... />  
<Item ...  
  
<Item ... "CMD_POLL" ... />  
<Item ... "CMD_TEST" ... />  
<Item ... "CMD_FIX" ... />  
<Item ...  
  
</LAYOUT_HD>
```

- Status data
- Configuration data
- Commands

The Thing Between LGM and LG GSM R3 – Constraint

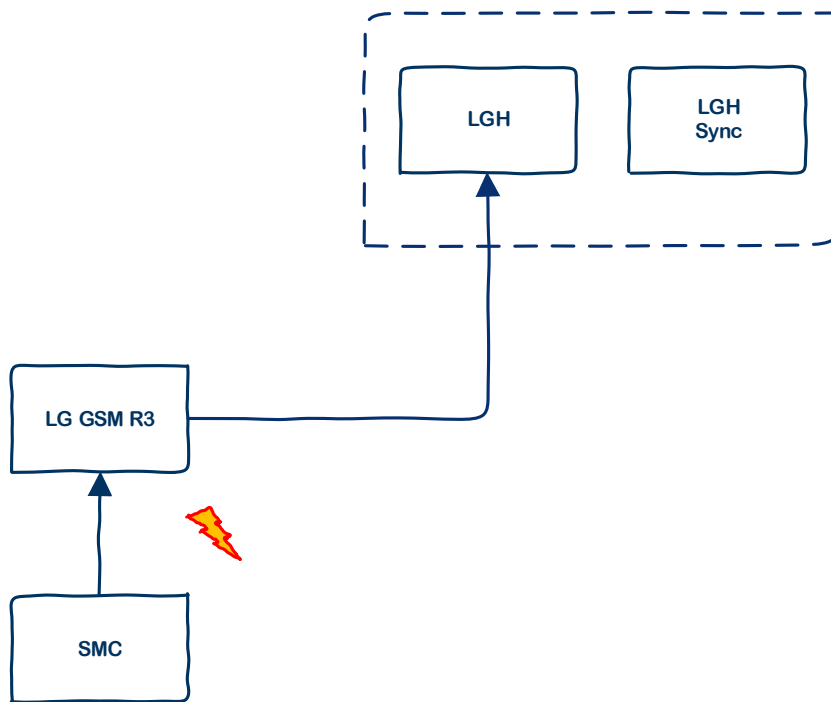


A session is always initiated by the LG GSM R3, because:

- GPRS stack consumes too much power
- No fixed IP Address

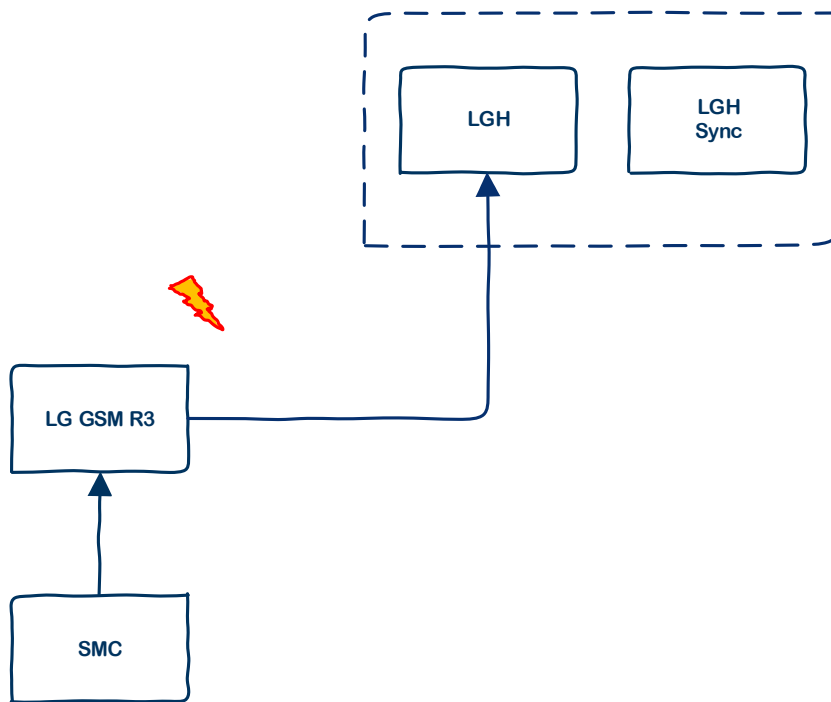
We need a PUSH!

The Thing Between LGM and LG GSM R3 – HD Events



- Beacon Day
- Beacon Night
- Beacon Fail
- Low Battery
- Aux Input
- Configuration changed
- Impact detected

The Thing Between LGM and LG GSM R3 – LG Events



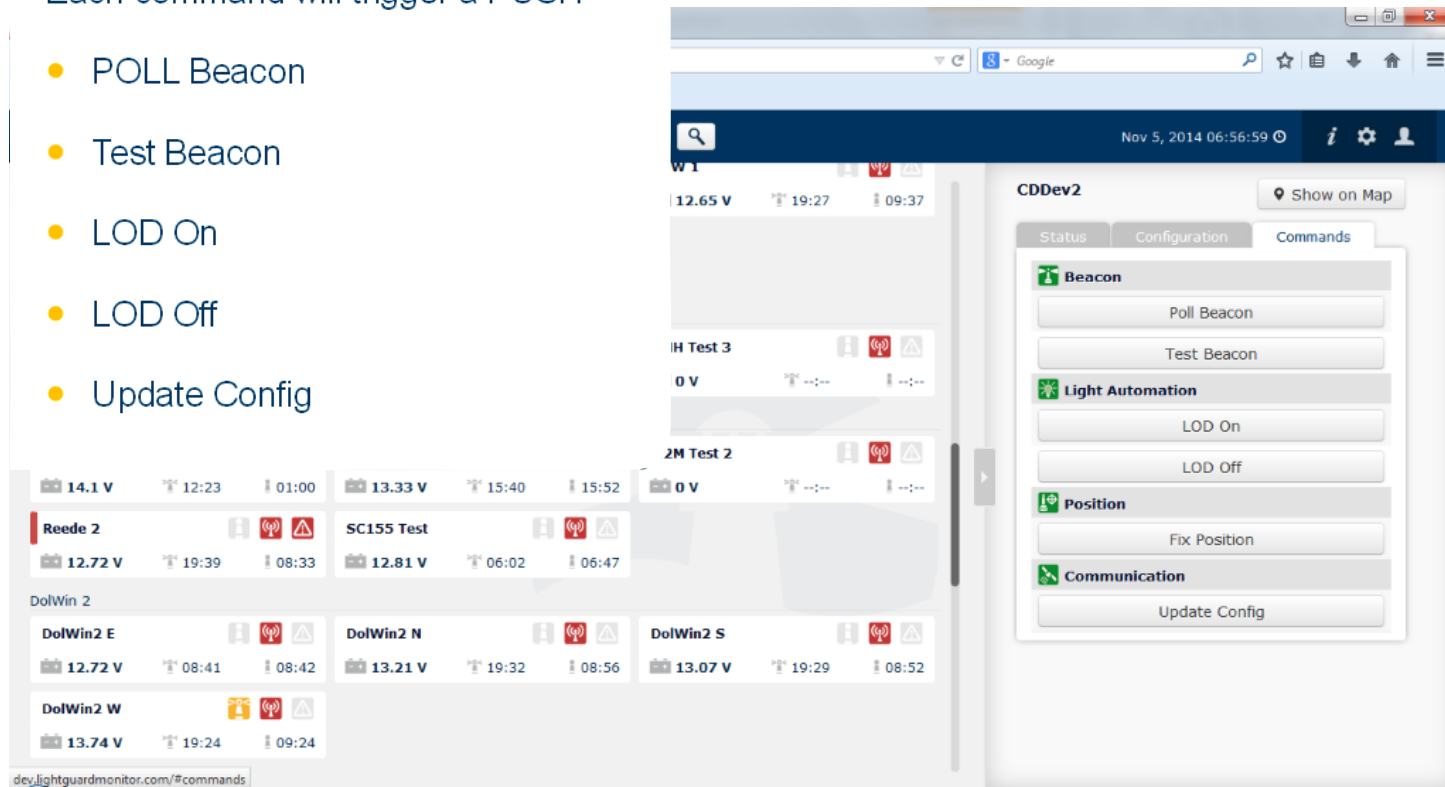
- GPS Fail
- Off-Location
- Interval Report
- Power-Up

The Thing Between LGM and LG GSM R3 – Commands

#1

Each command will trigger a PUSH

- POLL Beacon
- Test Beacon
- LOD On
- LOD Off
- Update Config

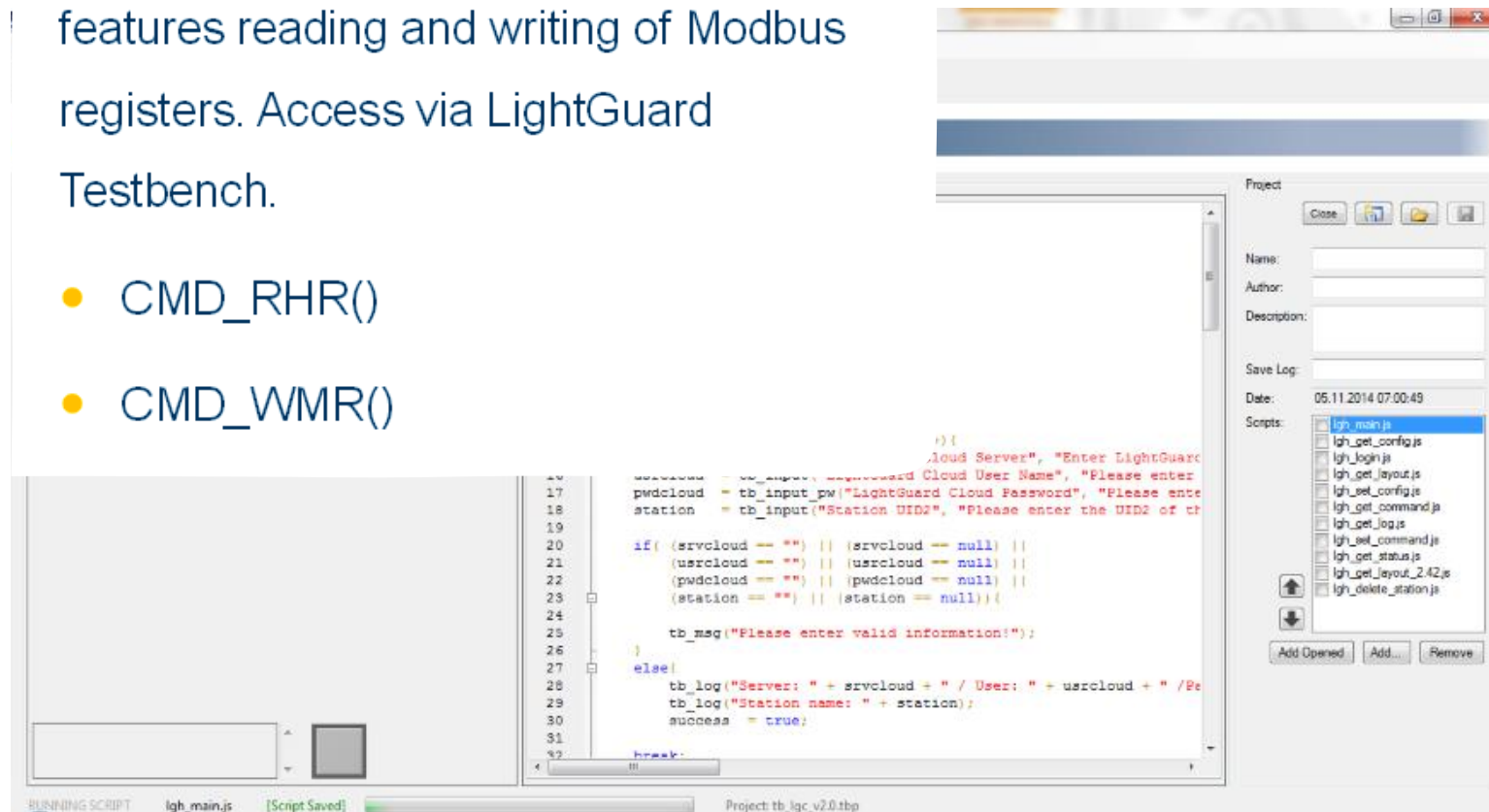


The Thing Between LGM and LG GSM R3 – Commands

#2

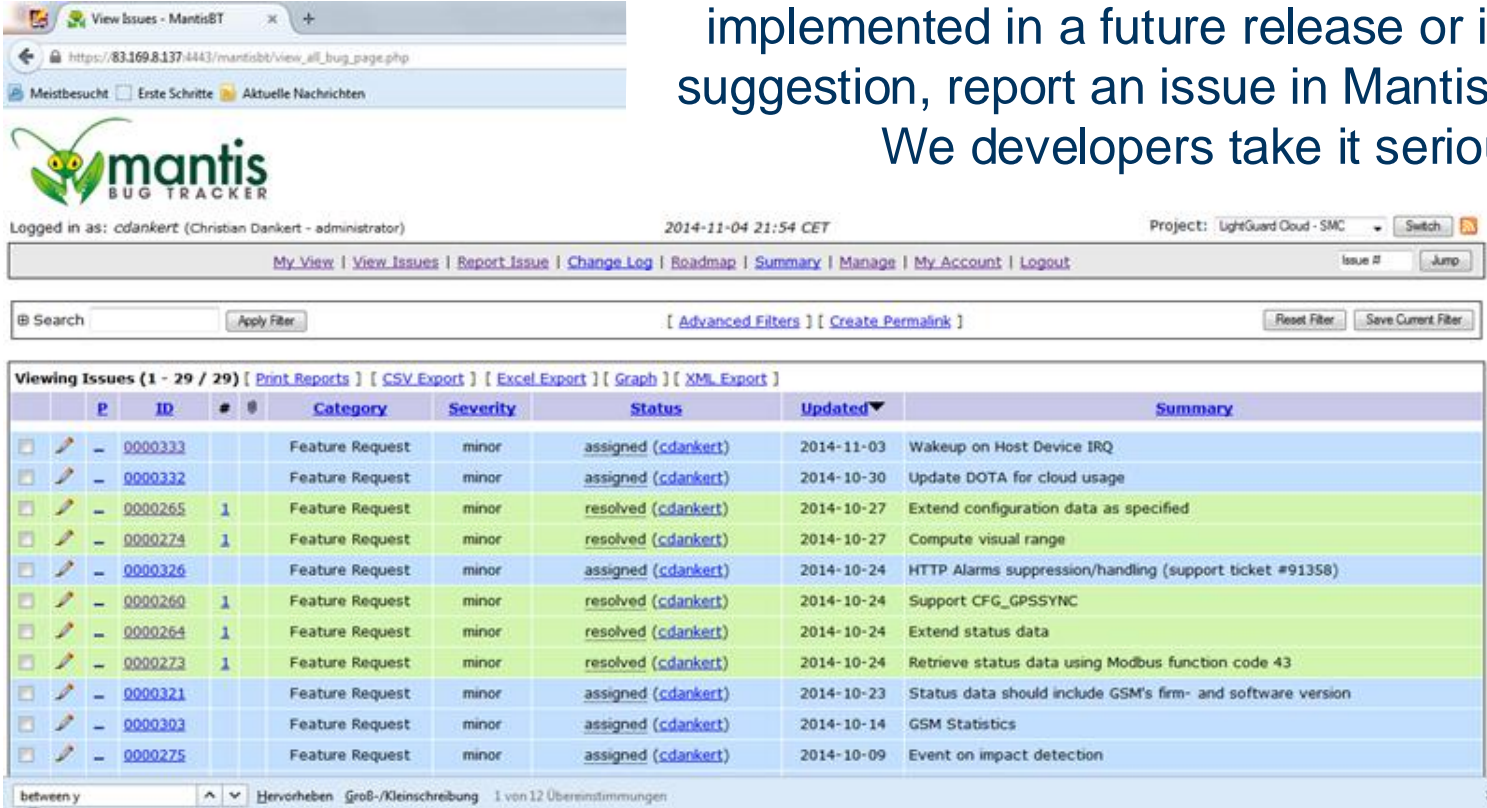
For investigation purposes LG GSM R3 features reading and writing of Modbus registers. Access via LightGuard Testbench.

- CMD_RHR()
- CMD_WMR()



Bug Tracking - Mantis is not a Bucket

If you found a bug, want a feature to be implemented in a future release or if you have a suggestion, report an issue in Mantis Bug Tracker. We developers take it seriously!



The screenshot displays the Mantis Bug Tracker web interface. At the top, the browser address bar shows the URL https://83.169.8.137:4443/mantisbt/view_all_bug_page.php. The Mantis logo is visible on the left. The user is logged in as 'cdankert (Christian Dankert - administrator)' on '2014-11-04 21:54 CET'. The project is set to 'LightGuard Cloud - SMC'. A navigation bar includes links like 'My View', 'View Issues', 'Report Issue', 'Change Log', 'Roadmap', 'Summary', 'Manage', 'My Account', and 'Logout'. Below this is a search bar and filter options. The main section, 'Viewing Issues (1 - 29 / 29)', contains a table of feature requests.

	P	ID	#	Category	Severity	Status	Updated	Summary
<input type="checkbox"/>	-	0000333		Feature Request	minor	assigned (cdankert)	2014-11-03	Wakeup on Host Device IRQ
<input type="checkbox"/>	-	0000332		Feature Request	minor	assigned (cdankert)	2014-10-30	Update DOTA for cloud usage
<input type="checkbox"/>	-	0000265	1	Feature Request	minor	resolved (cdankert)	2014-10-27	Extend configuration data as specified
<input type="checkbox"/>	-	0000274	1	Feature Request	minor	resolved (cdankert)	2014-10-27	Compute visual range
<input type="checkbox"/>	-	0000326		Feature Request	minor	assigned (cdankert)	2014-10-24	HTTP Alarms suppression/handling (support ticket #91358)
<input type="checkbox"/>	-	0000260	1	Feature Request	minor	resolved (cdankert)	2014-10-24	Support CFG_GPSSYNC
<input type="checkbox"/>	-	0000264	1	Feature Request	minor	resolved (cdankert)	2014-10-24	Extend status data
<input type="checkbox"/>	-	0000273	1	Feature Request	minor	resolved (cdankert)	2014-10-24	Retrieve status data using Modbus function code 43
<input type="checkbox"/>	-	0000321		Feature Request	minor	assigned (cdankert)	2014-10-23	Status data should include GSM's firm- and software version
<input type="checkbox"/>	-	0000303		Feature Request	minor	assigned (cdankert)	2014-10-14	GSM Statistics
<input type="checkbox"/>	-	0000275		Feature Request	minor	assigned (cdankert)	2014-10-09	Event on impact detection

At the bottom, there are pagination controls showing 'between y' and 'Hervorheben Groß-/Kleinschreibung 1 von 12 Übereinstimmungen'.

- The End –
Thank You For Listening!