

## FAQ Maintenance Guideline from GeoDAS

### 1. Introduction

- This procedure describes a typical monthly check of a GeoSIG system. It will give some basic information about the state of recorder and sensor.

### 2. Required Tools

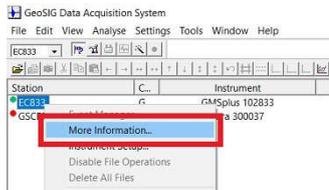
- Recorder and Sensor you want to check, running and connected to network
- Access to GeoDAS server (computer with GeoDAS the recorder is connecting to)

### 3. Check for existing Procedures

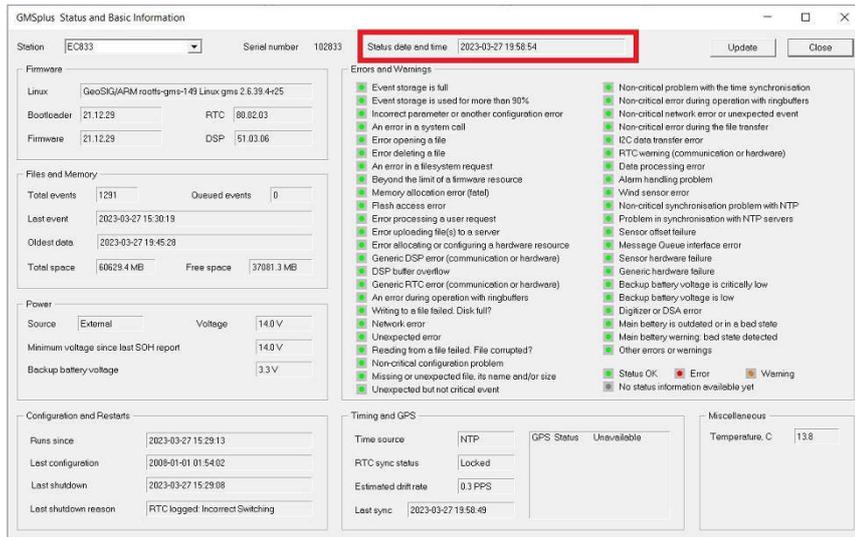
- Please check if there is a project-specific procedure for your system to follow instead. Especially if your system is tied to an alarm system as the execution of the test pulse described in this procedure may cause an alarm.

### 4. Access the latest Status Information

- In GeoDAS window **Stations: General Information**, right-click on the station and choose **More Information...**



- Make sure the field **Status date and time** shows a recent date



- If it is outdated, you can request new information from GeoDAS window **Stations: General Information**, right-click on the station and choose **Instrument Control...** -> **Send a Request** -> **GETSOH** -> **[Send]**



### 5. Check Errors and Warnings

- Check the field **Errors and Warnings** and make sure no errors are present (all bullets green)

Station: EC833 Serial number: 102833 Status date end time: 2023-03-27 19:58:54

**Errors and Warnings**

- Event storage is full
- Event storage is used for more than 90%
- Incorrect parameter or another configuration error
- An error in a system call
- Error opening a file
- Error deleting a file
- An error in a filesystem request
- Beyond the limit of a firmware resource
- Memory allocation error (fatal)
- Flash access error
- Error processing a user request
- Error uploading file(s) to a server
- Error allocating or configuring a hardware resource
- Generic DSP error (communication or hardware)
- DSP buffer overflow
- Generic RTC error (communication or hardware)
- An error during operation with ringbuffers
- Writing to a file failed. Disk full!
- Network error
- Unexpected error
- Reading from a file failed. File corrupted?
- Non-critical configuration problem
- Missing or unexpected file, its name end/or size
- Unexpected but not critical event
- Non-critical problem with the time synchronisation
- Non-critical error during operation with ringbuffers
- Non-critical network error or unexpected event
- Non-critical error during the file transfer
- ICD data transfer error
- RTC warning (communication or hardware)
- Date processing error
- Alarm handling problem
- Wind sensor error
- Non-critical synchronisation problem with NTP
- Problem in synchronisation with NTP servers
- Sensor offset failure
- Message Queue interface error
- Sensor hardware failure
- Generic hardware failure
- Backup battery voltage is critically low
- Backup battery voltage is low
- Digitizer or DSA error
- Main battery is outdated or in a bad state
- Main battery warning: bad state detected
- Other errors or warnings

Legend: Status OK (green), Error (red), Warning (yellow), No status information available yet (grey)

## 6. Check Battery Voltages

- Check the field **Power**
- If the recorder is powered from AC (Source External), **Voltage** should at least show **13.5V**
- If your recorder (only GMS-xx, GMSplus and CR-6plus) has a backup battery, the **Backup battery voltage** should be at least **3.0V**

Station: EC833 Serial number: 102833 Status date end time: 2023-03-27 19:58:54

**Power**

Source: External Voltage: 14.0 V

Minimum voltage since last SOH report: 14.0 V

Backup battery voltage: 3.3 V

- Main battery should be replaced every 3 years (See Warnings and Safety in User Manual)
- Backup battery should be replaced every 5 years (See Warnings and Safety in User Manual)
- To set battery installation date :  
In GeoDAS window **Stations: General Information**, right-click on the station and choose **Instrument Control... -> Send a Request -> SETBATDATE yyyy-mm-dd -> [Send]**  
or from the webinterface under **Status and Maintenance -> Maintenance**  
or through the serial console in **Test and Configuration Menu -> T - Battery installation dates**

## 7. Check Time Synchronisation

- Check the field **Timing and GPS**
- **Time source** should show **NTP** or **GPS** (whenever possible, an external time source such as NTP or GPS should be used)
- **RTC sync status** should show **Locked**

Station: EC833 Serial number: 102833 Status date end time: 2023-03-27 19:58:54

**Timing and GPS**

Time source: NTP GPS Status: Unavailable

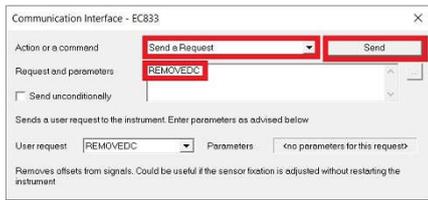
RTC sync status: Locked

Estimated drift rate: 0.3 PPS

Last sync: 2023-03-27 19:58:49

## 8. Remove offset

- In GeoDAS window **Stations: General Information**, right-click on the station and choose **Instrument Control... -> Send a Request -> REMOVEDC -> [Send]**



### 9. Request Test Pulse

- In GeoDAS window **Stations: General Information**, right-click on the station and choose **Instrument Control... -> Send a Request -> TSTSENSOR 1 -> [Send]**



- A minised file with the recorded pulse (file prefix CAL\_) will be uploaded to the **Data** folder of your station in GeoDAS (C:\GeoDAS\_DATA\Data\)

Name	Date modified	Type	Size
CAL_102833_20230327_153019_Trigger1.msd	27.03.2023 17:30	GeoDAS Document	75 KB

### 10. Check Test Pulse

- The shape of the test pulse is depending on the sensor type. A reference pulse recorded at the factory is shipped for each sensor on the usb key, the file can be found in the folder Calibration\Test\_files\_Sensors (file prefix TP\_ with the SN of the sensor). It is also recommended to record a test pulse after installation and keep it with later records for comparison.

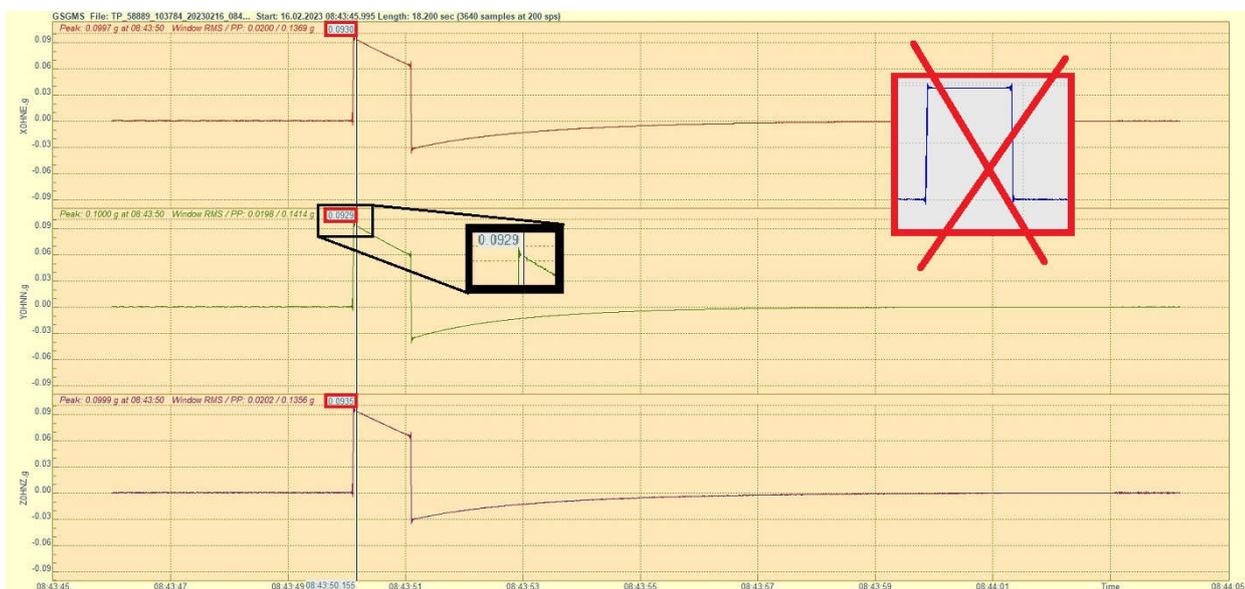
#### 10.1 Test pulse of AC-7x

- Double-click the file to open it in GeoDAS
- Click into the yellow part of the window to make the cursor appear
- Move the cursor to the flat part of the pulse
- Check that the value of the flat part for each axis is within the range of 0.1125g-0.1375g



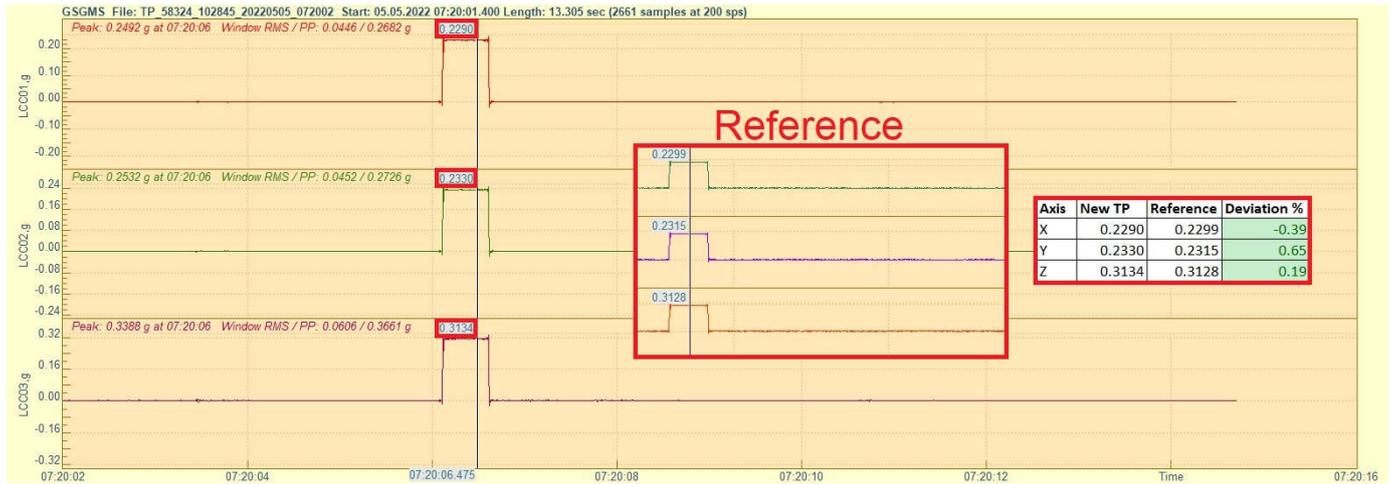
#### 10.2 Test pulse of AC-2x

- Double-click the file to open it in GeoDAS
- Click into the yellow part of the window to make the cursor appear
- Move the cursor right after the peak, the point that forms the beginning of a straight line with some slope
- Check that the value right after the peak for each axis is within the range of 0.09g-0.11g
- Visually check that the angle of the slope is similar on all axis (compare with a reference pulse file if unsure)



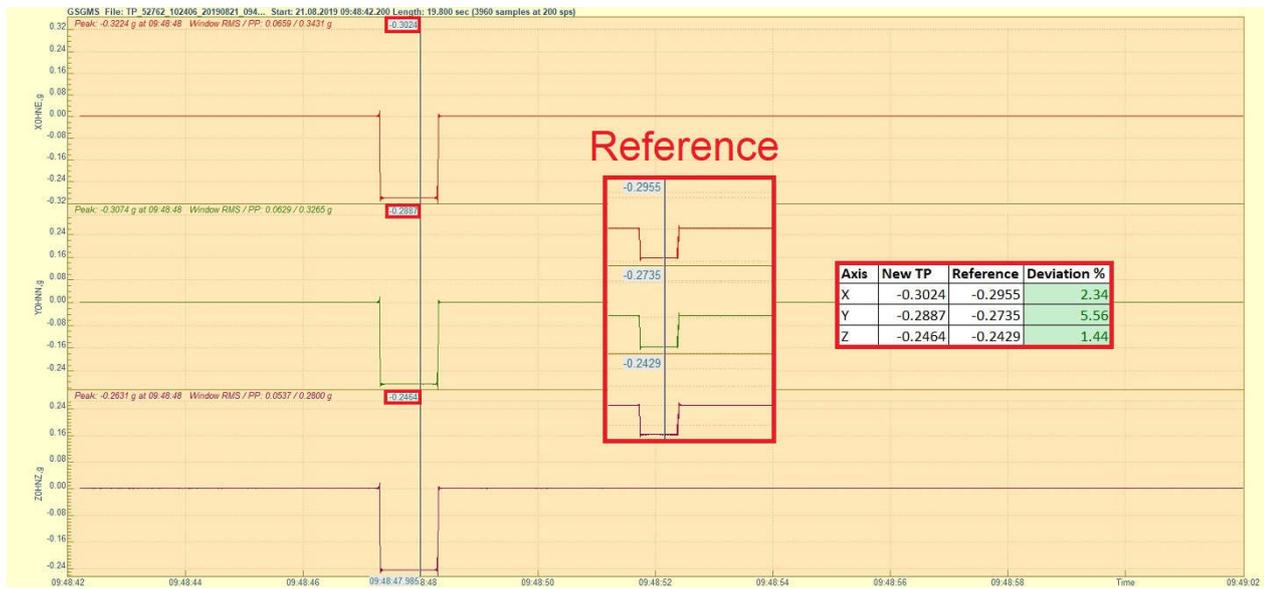
### 10.3 Test pulse of AC-4x

- Double-click the file to open it in GeoDAS
- Click into the yellow part of the window to make the cursor appear
- Move the cursor to the flat part of the pulse, x- and y-axis should show a similar value, the z-axis should show a higher value
- Open a reference file of the same sensor and check that the flat part for each axis on the newly recorded pulse does not deviate more than +/-10%



### 10.4 Test pulse of AC-6x

- Double-click the file to open it in GeoDAS
- Click into the yellow part of the window to make the cursor appear
- Move the cursor to the flat part of the pulse, depending on the sensor generation, the pulse may be negative or positive
- Open a reference file of the same sensor and check that the flat part for each axis on the newly recorded pulse does not deviate more than +/-10%



### 10.5 Test pulse of VE-1x

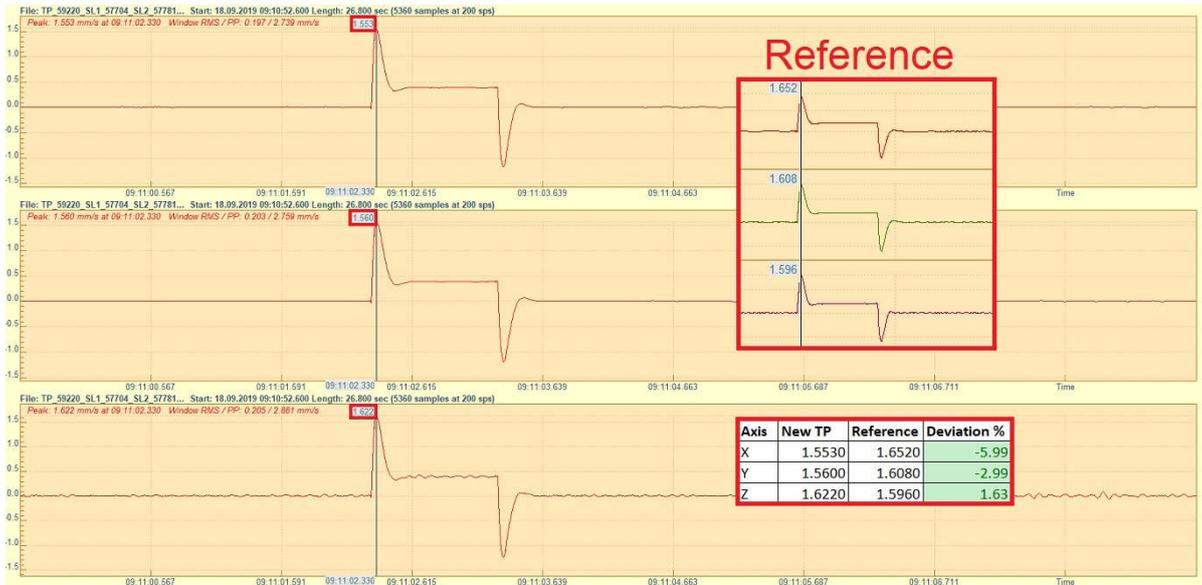
- Double-click the file to open it in GeoDAS
- Click into the yellow part of the window to make the cursor appear
- Check that the pulse is with similar shape as shown in the picture below
- Move the cursor to the peak of the positive pulse to read the value for each axis
- Open a reference file of the same sensor and check that the peak for each axis on the newly recorded pulse does not deviate more than +/-10%



### 10.6 Test pulse of VE-2x

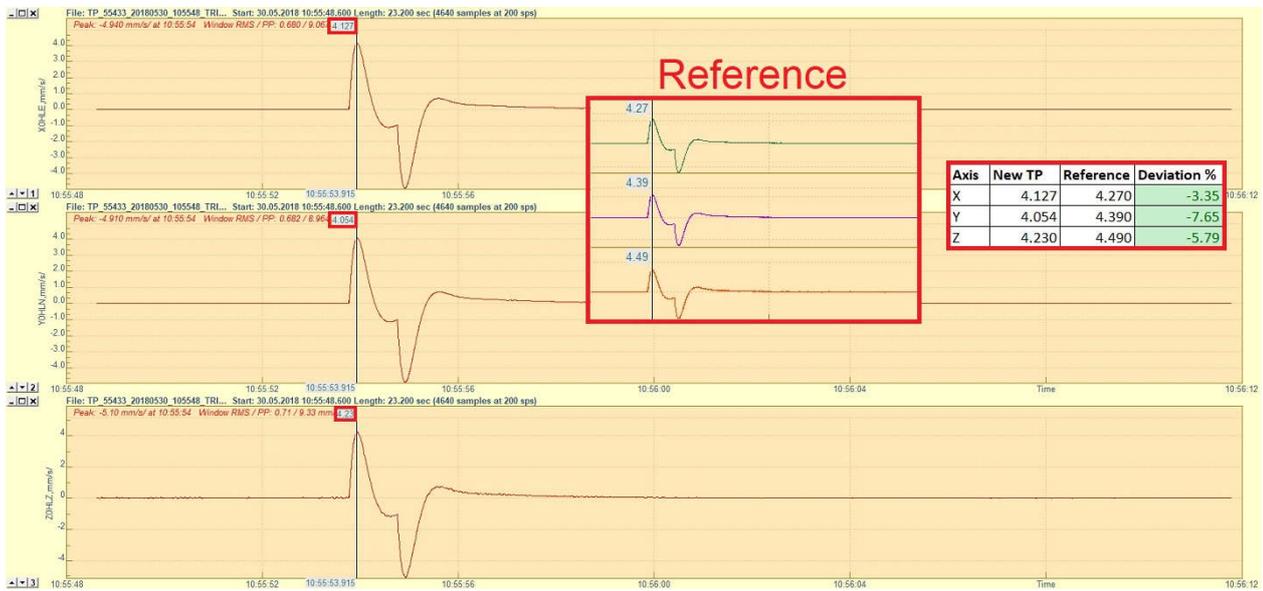
- Double-click the file to open it in GeoDAS
- Click into the yellow part of the window to make the cursor appear
- Check that the pulse is with similar shape as shown in the picture below
- Move the cursor to the peak of the positive pulse to read the value for each axis

- Open a reference file of the same sensor and check that the peak for each axis on the newly recorded pulse does not deviate more than +/-10%



### 10.7 Test pulse of VE-5x-SP

- Double-click the file to open it in GeoDAS
- Click into the yellow part of the window to make the cursor appear
- Check that the pulse is with similar shape as shown in the picture below
- Move the cursor to the peak of the positive pulse to read the value for each axis
- Open a reference file of the same sensor and check that the peak for each axis on the newly recorded pulse does not deviate more than +/-10%



### 10.8 Test pulse of VE-5x-BB

- Double-click the file to open it in GeoDAS
- Click into the yellow part of the window to make the cursor appear
- Check that the pulse is with similar shape as shown in the picture below
- Move the cursor to the peak of the positive pulse to read the value for each axis
- Open a reference file of the same sensor and check that the peak for each axis on the newly recorded pulse does not deviate more than +/-10%

