# Sputnik 6.13 release note

Please note that Sputnik 6.13 is fully bootload compatible with Sputnik 6.1 – 6.12 releases.
Sputnik 6.13 contains changes to the BMCU, SUB and PC Software. Sputnik 6.13 firmware should be used exclusively on a system, do not mix other firmware/software versions with 6.13.
The PC Tool "Diagnostic software" is normally supplied as a node locked PC application. Alternatively the PC Tool is supplied on a license USB dongle and can only be started with this dongle connected to the computers USB port.

In case of any questions about the upgrading procedure, please do not hesitate to contact a Lithium Balance technician before attempting to upgrade the firmware.
The firmware version numbers for this release will be:

| Unit: | Firmware version: | Boot loader version: |
|-------|-------------------|----------------------|
| BMCU | 20000.0A.06.c.013 | 7 |
| SUB | 20000.0A.06.c.013 | 2 |
| LMU | 20000.0A.06.c.013 | 2 |
| PC Tool | 20000.6.13.0 | - |

s-BMS firmware changes in this release:

| BMS FOCUS | CORE BENEFIT | TECHNICAL DESCRIPTION |
|-----------|--------------|------------------------|
| Performance | Remaining Energy | Remaining Energy calculation is corrected, improved and available via CAN |
| Safety | LMU Over Temperature | Action is taken when not only all LMUs exceed temperature limits, but also when any single LMU measures over temperature. |
| Usability | Customizable CAN HeartBeat | CANopen heart beat time interval is configurable via CAN. CANopen NMT cmd = 2 added for stopped according to standard |
| Usability | Scalable window size of DataStorage and Odometer | Window size in Diagnostic Software for DataStorage and Odometer are now resizeable. |
| Usability | Block bootload window while Reading is performing. | It is not possible to start a bootload while the Diagnostic Software does read operation. |
| Usability | Warning window: Remember to save your configuration file before bootloading. | A warning window pops up when user attempts to start bootloading operation. |
| Usability | Intelligent short circuit detection reset | Configurable auto-reset of short circuit error if the current is below the short circuit trigger level for more than 10 sec. A following new short circuit detection will raise the error flag again. |
| Battery Life | Improved cell voltage misreading error | Added filter, time constant and voltage reading tolerances, to avoid false "cell voltage misreading" error at transients state (step/impulse current up/down). |
| Bug | Discharge indication when Charge & discharge Enab in v6.11 and v6.12 | Charge mode is prior to Discharge mode. System can start up in discharge mode by default, and enabling both charge and discharge inputs activates charge mode. |
| Performance | Fast Charge with high current. Reduced possible oscillations. | Added incremental current step size to charge current request. Charge current request via CAN now will increase the current step wise until configured current level is reached. Both time constant and step size of this step wise request are configurable. |
| Usability | Close RS232 port when port not used | The BMS RS232 interface used for communication with the Diagnostic PC tool is now disabled when not in use. |
| Bug | Charger current regulation miscalculation | Fixed numerical error where CAN message with current request realizes sudden unexpected drops to 0A. |
| Usability | Warning window pops up in PC Software, and does autocorrection for "cell regulating voltage" settings. | Values for cell regulating voltage level must be below charge complete window level. If user mistakenly type such a value that corresponds with charge complete window level or higher than cell target voltage, a warning message pops-up and cell regulation voltage will be auto-corrected. |

**On behalf of the R&D and support team at LiTHIUM BALANCE**