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# **Wheelchair Builder 4.0-1**

## Release Notes

## Contents

Wheelchair Builder 4.0-1 .....	1
1 Wheelchair Builder .....	7
1.1 Release 4.0.0.0 .....	7
1.2 Changes between release 4.0.0.0 and 4.0.0.1 .....	7
1.2.1 Improvements .....	7
1.3 Changes between release 4.0.0.1 and 4.0.0.2 .....	7
1.3.1 Bugs .....	7
1.4 Changes between release 4.0.0.2 and 4.0.0.3 .....	7
1.4.1 Bugs .....	7
1.4.2 Improvements .....	7
1.5 Changes between release 4.0.0.3 and 4.0.0.4 .....	7
1.5.1 Improvements .....	7
1.6 Changes between release 4.0.0.4 and 4.0.0.5 .....	7
1.6.1 Bugs .....	7
1.7 Changes between release 4.0.0.5 and 4.0.0.6 .....	8
1.7.1 Improvements .....	8
1.8 Changes between release 4.0.0.6 and 4.0.0.7 .....	8
1.8.1 Improvements .....	8
1.9 Changes between release 4.0.0.7 and 4.0.0.8 .....	8
1.9.1 Improvements .....	8
1.9.2 Bugs .....	8
1.10 Changes between release 4.0.0.8 and 4.0.0.9 .....	8
1.10.1 Improvements .....	8
1.11 Changes between release 4.0.0.9 and 4.0.0.10 .....	9
1.11.1 Improvements .....	9
1.12 Changes between release 4.0.0.10 and 4.0.1.0 .....	9
1.12.1 Improvements .....	9
1.12.2 Bugs .....	9
1.13 Changes between release 4.0.1.0 and 4.0.2.0 .....	9
1.13.1 Bugs .....	9
1.14 Changes between release 4.0.2.0 and 4.0.3.0 .....	9
1.14.1 Bugs .....	9
1.14.2 Improvements .....	9
1.15 Changes between release 4.0.3.0 and 4.0.4.0 .....	9
1.15.1 Improvements .....	9

1.16	Changes between release 4.0.4.0 and 4.0.5.0 .....	10
1.16.1	Improvements.....	10
1.17	Changes between release 4.0.5.0 and 4.0.6.0 .....	10
1.17.1	Bugs .....	10
1.18	Changes between release 4.0.6.0 and 4.0.7.0 .....	10
1.18.1	Improvements.....	10
1.19	Changes between release 4.0.7.0 and 4.0.8.0 .....	10
1.19.1	Bugs .....	10
1.19.2	Improvements.....	10
1.20	Changes between release 4.0.8.0 and 4.0.9.0 .....	10
1.20.1	Bugs .....	10
1.20.2	Improvements.....	10
1.21	Changes between release 4.0.9.0 and 4.0.10.0 .....	11
1.21.1	Bugs .....	11
1.22	Changes between release 4.0.10.0 and 4.0.11.0 .....	11
1.22.1	Bugs .....	11
1.22.2	Improvements.....	11
1.23	Changes between release 4.0.11.0 and 4.0.12.0 .....	11
1.23.1	Bugs .....	11
1.24	Changes between release 4.0.12.0 and 4.0.13.0 .....	11
1.24.1	Bugs .....	11
1.24.2	Improvements.....	11
1.25	Changes between release 4.0.13.0 and 4.0.14.0 .....	11
1.25.1	Bugs .....	11
1.26	Changes between release 4.0.14.0 and 4.0.15.0 .....	12
1.26.1	Bugs .....	12
1.26.2	Improvements.....	12
1.27	Changes between release 4.0.15.0 and 4.0.16.0 .....	12
1.27.1	Bugs .....	12
1.28	Changes between release 4.0.16.0 and 4.0.17.0 .....	12
1.28.1	Bugs .....	12
1.28.2	Improvements.....	12
1.29	Changes between release 4.0.17.0 and 4.0.18.0 .....	12
1.29.1	Improvements.....	12
1.30	Changes between release 4.0.18.0 and 4.0.19.0 .....	13
1.30.1	Bugs .....	13

1.30.2	Improvements.....	13
1.31	Changes between release 4.0.19.0 and 4.0.20.0 .....	13
1.31.1	Improvements.....	13
1.32	Changes between release 4.0.20.0 and 4.0.21.0 .....	14
1.32.1	Improvements.....	14
1.33	Changes between release 4.0.21.0 and 4.0.22.0 .....	14
1.33.1	Bugs .....	14
1.33.2	Improvements.....	14
1.34	Changes between release 4.0.22.0 and 4.0.23.0 .....	14
1.34.1	Improvements.....	14
1.35	Changes between release 4.0.23.0 and 4.0.24.0 .....	15
1.35.1	Bugs .....	15
1.35.2	Improvements.....	15
1.36	Changes between release 4.0.24.0 and 4.0.25.0 .....	15
1.36.1	Bugs .....	15
1.36.2	Improvements.....	15
1.37	Changes between release 4.0.25.0 and 4.0.26.0 .....	16
1.37.1	Bugs .....	16
1.37.2	Improvements.....	16
1.38	Changes between release 4.0.26.0 and 4.0.27.0 .....	16
1.38.1	Bugs .....	16
1.38.2	Improvements.....	16
1.39	Changes between release 4.0.27.0 and 4.0.28.0 .....	17
1.39.1	Bugs .....	17
1.39.2	Improvements.....	17
1.40	Changes between release 4.0.28.0 and 4.0.29.0 .....	17
1.40.1	Bugs .....	17
1.40.2	Improvements.....	17
1.41	Changes between release 4.0.29.0 and 4.0.30.0 .....	17
1.41.1	Bugs .....	17
1.42	Changes between release 4.0.30.0 and 4.0.31.0 .....	18
1.42.1	Bugs .....	18
1.42.2	Improvements.....	18
1.43	Changes between release 4.0.31.0 and 4.0.32.0 .....	19
1.43.1	Improvements.....	19
1.44	Changes between release 4.0.32.0 and 4.0.33.0 .....	19

1.44.1	Improvements.....	19
1.45	Changes between release 4.0.33.0 and 4.0.34.0 .....	19
1.45.1	Bugs .....	19
1.45.2	Improvements.....	19
1.46	Changes between release 4.0.34.0 and 4.0.35.0 .....	20
1.46.1	Bugs .....	20
1.46.2	Improvements.....	20
1.47	Changes between release 4.0.35.0 and 4.0.36.0 .....	20
1.47.1	Bugs .....	20
1.48	Changes between release 4.0.36.0 and 4.0.37.0 .....	20
1.48.1	Bugs .....	20
1.48.2	Improvements.....	20
1.49	Changes between release 4.0.37.0 and 4.0.38.0 .....	21
1.49.1	Bugs .....	21
1.50	Changes between release 4.0.38.0 and 4.0.39.0 .....	21
1.50.1	Bugs .....	21
1.51	Changes between release 4.0.39.0 and 4.0.40.0 .....	21
1.51.1	Improvements.....	21
1.52	Changes between release 4.0.40.0 and 4.0.41.0 .....	21
1.52.1	Improvements.....	21
1.53	Changes between release 4.0.41.0 and 4.0.42.0 .....	21
1.53.1	Improvements.....	21
1.54	Changes between release 4.0.42.0 and 4.0.43.0 .....	21
1.54.1	Improvements.....	21
1.55	Changes between release 4.0.43.0 and 4.0.44.0 .....	22
1.55.1	Improvements.....	22
1.56	Changes between release 4.0.44.0 and 4.0.45.0 .....	22
1.56.1	Bugs .....	22
1.57	Changes between release 4.0.45.0 and 4.0.46.0 .....	22
1.57.1	Bugs .....	22
1.58	Changes between release 4.0.46.0 and 4.0.47.0 .....	22
1.58.1	Improvements.....	22
1.59	Changes between release 4.0.47.0 and 4.0.48.0 .....	22
1.59.1	Bugs .....	22
1.60	Changes between release 4.0.48.0 and 4.0.49.0 .....	23
1.60.1	Improvements.....	23

1.60.2	Bugs .....	23
1.61	Changes between release 4.0.49.0 and 4.0.50.0 .....	23
1.61.1	Improvements.....	23
1.62	Changes between release 4.0.50.0 and 4.1.1.0 .....	23
1.62.1	Improvements.....	23
1.63	Changes between release 4.1.1.0 and 4.1.2.0 .....	23
1.63.1	Bugs .....	23
1.63.2	Improvements.....	23
1.64	Changes between release 4.1.2.0 and 4.1.3.0 .....	23
1.64.1	Improvements.....	23
1.65	Changes between release 4.1.3.0 and 4.1.4.0 .....	23
1.66	Changes between releases 4.1.4.0 and 4.1.5.0 .....	23
1.67	Changes between release 4.1.4.0 and 4.1.5.0 .....	24
1.67.1	Improvements.....	24

## 1 Wheelchair Builder

### 1.1 Release 4.0.0.0

First development release.

### 1.2 Changes between release 4.0.0.0 and 4.0.0.1

#### 1.2.1 Improvements

- Added the setting that determines if serial numbers can be changed.
- Added a settings file to have global settings next to user settings.

### 1.3 Changes between release 4.0.0.1 and 4.0.0.2

#### 1.3.1 Bugs

- There was no button to rescue a general module.

### 1.4 Changes between release 4.0.0.2 and 4.0.0.3

#### 1.4.1 Bugs

- Reading live settings resulted in an exception because the Control property of the entries that were not shown due to view level restrictions were null.
- Documents corresponding to the opened config file were not shown.

#### 1.4.2 Improvements

- Allow scrolling on settings.
- Changed the way the settings tabs UI is updated so the last selected tab is still shown.

### 1.5 Changes between release 4.0.0.3 and 4.0.0.4

#### 1.5.1 Improvements

- Improved the rescue firmware progress bar.

### 1.6 Changes between release 4.0.0.4 and 4.0.0.5

#### 1.6.1 Bugs

- Changed the way to look for chassis type, seat type and latched drive in configuration files by searching for the proper ID attribute.

## 1.7 Changes between release 4.0.0.5 and 4.0.0.6

### 1.7.1 Improvements

- The password entry is now hidden.
- Added a new LINAK item in the tables file.
- Disabled automatic starting of the quickstep guide, because it was shown on every startup of a new version.
- The config summary file is now located locally in the AppData folder.
- When correcting nodes after the icsdef file has been handled, the current situation is added to the log file after every verification of the wheelchair.

## 1.8 Changes between release 4.0.0.6 and 4.0.0.7

### 1.8.1 Improvements

- User levels 4 and 5 are remembered for next startup, but levels 1, 2 and 3 are always temporary during the current session.

## 1.9 Changes between release 4.0.0.7 and 4.0.0.8

### 1.9.1 Improvements

- Better description in the connectivity form to explain that the window just needs to be closed after selecting the port.
- Updated the form to update the user level.
- Implemented copying of default tables.

### 1.9.2 Bugs

- Default tables were not shown properly.
- The stored config file in the history entries was not yet written after writing the settings and parameters.
- The configuration summary file was looking for "\_v" for the version number of the file, while sometimes the name contains a space instead of an underscore.  
Changed the name of the configuration summary file, so that it is created again.

## 1.10 Changes between release 4.0.0.8 and 4.0.0.9

### 1.10.1 Improvements

- Included a license file.
- Log file is sent when closing Wheelchair Builder.
- Log files and corrected config files are now saved in application data directory.



## 1.11 Changes between release 4.0.0.9 and 4.0.0.10

### 1.11.1 Improvements

- Included the EmailHandler, LogHandler, LicenseHandler and SerialnumberHandler into the UserInterfaceHandler.
- A new log file is started when the current log file reaches 100kb so that logging does not slow down the application.
- Improved architecture.

## 1.12 Changes between release 4.0.0.10 and 4.0.1.0

### 1.12.1 Improvements

- Architectural changes.

### 1.12.2 Bugs

- Some labels in the settings tab were not wide enough.

## 1.13 Changes between release 4.0.1.0 and 4.0.2.0

### 1.13.1 Bugs

- Exception when reading from ICS due to the history entries, after architectural changes.
- Updating the system was not completed after a verify and rescue execution.

## 1.14 Changes between release 4.0.2.0 and 4.0.3.0

### 1.14.1 Bugs

- Exception when a parameter is not defined in the tablesV2.xml file.
- TablesV2.xml file was not up to date.

### 1.14.2 Improvements

- Wheelchair Programmer support with exit codes.
- Updated log handling.
- Section values are no longer editable if the defined value is not part of the options.
- Removed the quickstart guide shown setting.

## 1.15 Changes between release 4.0.3.0 and 4.0.4.0

### 1.15.1 Improvements

- FTDI loading issues on laptops without FTDI drivers installed.

## 1.16 Changes between release 4.0.4.0 and 4.0.5.0

### 1.16.1 Improvements

- Updated restart implementation.

## 1.17 Changes between release 4.0.5.0 and 4.0.6.0

### 1.17.1 Bugs

- FTD2XX.dll was not found if the access was denied, even if it was present, so needed to remove the "No FTDI drivers" message.

## 1.18 Changes between release 4.0.6.0 and 4.0.7.0

### 1.18.1 Improvements

- Implemented a different way of verifying that the FTD2XX.dll file is present in the system32 folder.

## 1.19 Changes between release 4.0.7.0 and 4.0.8.0

### 1.19.1 Bugs

- The port settings were not saved when changing the setting to show all ports.
- Incorrect value for validating if FTD2XX.dll exists in the system32 folder.  
Added logging to get more info on the directory and file.

### 1.19.2 Improvements

- Updated to framework 4.5.

## 1.20 Changes between release 4.0.8.0 and 4.0.9.0

### 1.20.1 Bugs

- Stuck in endless restart loop if the system was reconfiguring.

### 1.20.2 Improvements

- Still incorrect value for validating if FTD2XX.dll exists in the system32 folder.  
Removed check and caught closing of RnetInterface in case no drivers are installed.
- Added tool tips.

## 1.21 Changes between release 4.0.9.0 and 4.0.10.0

### 1.21.1 Bugs

- Calibration of a DigPot did not work because parameter HallSensorCalibrationA was not defined and this was required by the application.

## 1.22 Changes between release 4.0.10.0 and 4.0.11.0

### 1.22.1 Bugs

- Table cells were not according to their individual view and edit levels.

### 1.22.2 Improvements

- Initialization progress form shows progress of counting files.

## 1.23 Changes between release 4.0.11.0 and 4.0.12.0

### 1.23.1 Bugs

- Notes in tables were not displayed.
- The settings in the "vertical" element for F5 configuration files were not read or written, since the "seattype" element was expected instead of "vertical" element.

## 1.24 Changes between release 4.0.12.0 and 4.0.13.0

### 1.24.1 Bugs

- Notes of selection values were not displayed.
- Sometimes the ID was defined for a whole row of a table and there was a exception when trying to read those because the row of a table did not have a value that could be parsed to an int.

### 1.24.2 Improvements

- Added tooltips for the name labels in the settings tab.
- Support for SE, US and local directories depending on executable location.

## 1.25 Changes between release 4.0.13.0 and 4.0.14.0

### 1.25.1 Bugs

- If saving a config file failed, the wrong action was executed.

## 1.26 Changes between release 4.0.14.0 and 4.0.15.0

### 1.26.1 Bugs

- Rescuing master failed when selecting a COM port was required first.
- LINParameters were not handled correctly.

### 1.26.2 Improvements

- Fixed UI memory leaks.

## 1.27 Changes between release 4.0.15.0 and 4.0.16.0

### 1.27.1 Bugs

- The master was not downgraded when the required firmware revision was smaller than 3323.

## 1.28 Changes between release 4.0.16.0 and 4.0.17.0

### 1.28.1 Bugs

- The JSM icons were not properly written.
- Some commands used a too long package.

### 1.28.2 Improvements

- It is no longer allowed to define a node serialnumber that is already used for another node.

## 1.29 Changes between release 4.0.17.0 and 4.0.18.0

### 1.29.1 Improvements

- All nodes are verified as well, even if the master is not up to date yet.
- The system is only automatically restarted twice during verification.
- The user is asked if a backup of the configuration file is required after writing the settings and parameters to the system.
- No unit is displayed if the value of the setting or parameter is empty.
- The quick guide panels had a hand cursor.
- Added visual feedback while reading live values.

## 1.30 Changes between release 4.0.18.0 and 4.0.19.0

### 1.30.1 Bugs

- Null reference exception on FunctionNode when opening an incompatible configuration file.
- If there were no settings to write, the wrong failed action was executed.
- While reading live status, an incorrect reference was used to the node being read.
- A restart was required when writing settings to ICS, otherwise the node table seemed empty.
- The sectors to erase were incomplete when programming the master.
- Linak and DigPot actuators were not properly programmed. Programming nodes is now properly done according to node type ID.
- Not all sectors were erased when programming the extended master module.
- Infinite check connection loop when the USB cable was disconnected after being opened.

### 1.30.2 Improvements

- Fixed UI memory leaks.
- Removed the question when clicking the reset icon in the top bar.
- RnetSerialHandler uses now the general SerialPortHandler.
- Changed the status of the master into 3 columns.
- Updated the master and mode programming methods.
- Using string.format to create strings.

## 1.31 Changes between release 4.0.19.0 and 4.0.20.0

### 1.31.1 Improvements

- Implemented English, French and Swedish translations of the settings view.
- Tooltips on right click only when setting TouchScreen is active.

## 1.32 Changes between release 4.0.20.0 and 4.0.21.0

### 1.32.1 Improvements

- Automatic writing of settings when required.
- Automatic updating of system after loading the master rescue firmware.
- When verifying the system, any firmware that is ok according to the configuration file, but has a newer revision available, will be shown in light green.
- Convert a ics3cfg file directly to a tlv file in the tlv tab.
- Added a checkbox in the status tab to update the master and all nodes to the latest revision during update of the system, even if no update is required according to the configuration tool.
- Wheelchair Builder can now also run from a USB stick if you have the same structure on the USB stick as if you would be required to have when running it from your C drive.
- Now the min and max attributes of the numeric values are applied in the settings tab.

## 1.33 Changes between release 4.0.21.0 and 4.0.22.0

### 1.33.1 Bugs

- Tooltips of the tab buttons in the settings tab were lost when resizing the application.

### 1.33.2 Improvements

- Low buttons now also have adjustable font size.
- A warning will be shown to first read from ICS after opening a configuration file, when you are about to change configuration settings or write to ICS and you have not read from ICS yet.
- No restart required when changing the language.

## 1.34 Changes between release 4.0.22.0 and 4.0.23.0

### 1.34.1 Improvements

- Changed the settings UseLatestRevisionWhenUpdating, AllowMasterDowngrade and AllowNodeDowngrade to MasterUpdateOption and NodeUpdateOption.
- Implemented Dutch and Swedish translations.

### 1.35 Changes between release 4.0.23.0 and 4.0.24.0

#### 1.35.1 Bugs

- A delay needed to be implemented after asking to select a port, when no port was defined and the user wanted to communicate with the system.
- The tooltips in the status tab were not updated when changing language.
- A lot of labels were still logged in active language.

#### 1.35.2 Improvements

- Implemented French translations.
- Properly restarting and verifying of the system after calibrating a node.
- Changed the tooltips of the 'close' icon of some sub forms to 'Cancel'.
- Implemented the underline setting to show that a label in the start, settings and status tab can be clicked on.
- Updated the Master information in the status tab.
- Replaced the 'updated' label with the actual version of the firmware after programming.

### 1.36 Changes between release 4.0.24.0 and 4.0.25.0

#### 1.36.1 Bugs

- Changed which matching config file and more recent config file is shown.

#### 1.36.2 Improvements

- Implemented firmware release package functionality.
- Added default config file summaries for C, J and Q.

## 1.37 Changes between release 4.0.25.0 and 4.0.26.0

### 1.37.1 Bugs

- When opening a config file, the live values that were written in the config file were shown. Now they are shown as "-" until live values are actually read.
- Only the new Wheelchair Programmer argument format was supported, now also the old Wheelchair Programmer argument format.
- Infinite write and verify loop when only needing to verify the master.
- Scales were incorrect when it was a double other than 1.
- Settings could not be written if seat type or chassis type were read as 0xFF.
- New rescue firmware.

### 1.37.2 Improvements

- Scanning backup folder for config files as well when running from C.
- Added button to find and open a backup config file from the server.
- Multiple sub files can now be selected or dropped.
- Serial number 0 is no longer allowed for the master and nodes when verifying the system. If so, the user is forced to enter a new serial number greater than 0.

## 1.38 Changes between release 4.0.26.0 and 4.0.27.0

### 1.38.1 Bugs

- The F5 configuration file had a different section called "Corpus" which was ignored while reading and writing. Now all section except "Info", "SystemSettings" and "WheelchairDefinition" are handled.
- When manually selecting sub files, they were not ordered in sequence yet.
- Exception when clicking on the matching configuration file, but it was deleted by the user.
- A restart was required after updating the master and writing the settings, when automatically updating after rescuing the master.
- The serial number failed to write after updating the master.

### 1.38.2 Improvements

- Added the French quick start guide.



### 1.39 Changes between release 4.0.27.0 and 4.0.28.0

#### 1.39.1 Bugs

- The function type ID's 103 from the WheelchairDefinition section were not read and written.

#### 1.39.2 Improvements

- Quick write also after writing, not only after reading.
- No more message when a sub file did not have any entries that match the connected system.

### 1.40 Changes between release 4.0.28.0 and 4.0.29.0

#### 1.40.1 Bugs

- Writing failed when the counter of a history entry reached 1000.

#### 1.40.2 Improvements

- The ICS4 read command response now has an extra TLV entry with the result.

### 1.41 Changes between release 4.0.29.0 and 4.0.30.0

#### 1.41.1 Bugs

- Getting the version of the PermobilToolDll did not work when running from the Start menu.

## 1.42 Changes between release 4.0.30.0 and 4.0.31.0

### 1.42.1 Bugs

- The copy buttons in the settings tab were broken.
- The copy buttons in the settings tab were not shown as translated.
- Second line of buttons was not visible on biggest font.
- The settings were written before the master was updated during updating of the system.
- Communication failed for older firmware versions due to the missing inner checksum.
- Communication often failed at startup and first connection, now the master is reset and communicating is retried.
- Stop reading a string as soon as a null character is read, even if there is more text on the next stored config file entry.
- Virtually replace all spaces with underscores to find the matching file.
- Correcting <!-- ... --> in config files correctly now.
- Values that were 32000 and shown as '--' were not editable.
- Now you can also set the 32000 value representing '--' in the numeric input form.
- Verification of calibration MaximumPositionIsCalibrationPoint was incorrect due to missing 2s delay.
- Units were not displayed for values that were not editable.
- No backup found if not in the backup summary file. Now the server will actually be searched if no match found in the backup summary file.

### 1.42.2 Improvements

- No more automatic writing or updating when required during verifying of the system.
- No longer possible to read or write settings if the master firmware is not up to date according to the opened configuration file.
- Added application name and WB icon in the taskbar.
- Updated the matching and more recent configuration file selection.
- Now also showing systemsettings section in the configuration files.
- Now also including info and systemsettings in the configuration file for reading and writing.
- Updated the ConfigurationFilesC.xml file.
- Also recovering stored config file when rescuing the master.
- You could click on copy buttons while live values were being read.
- Added the German language and quick start guide.
- Updated the backup summary file.

### 1.43 Changes between release 4.0.31.0 and 4.0.32.0

#### 1.43.1 Improvements

- Using new PermobilTool DLL.

### 1.44 Changes between release 4.0.32.0 and 4.0.33.0

#### 1.44.1 Improvements

- New color logic for matching config files.
- Config files can now be saved anywhere.
- Settings labels are no longer enlarged when making the application bigger.
- The unit was not shown for current and default values in the tooltips of the settings.
- Saving as new config file, opens that new config file before continuing.
- Included the F5 serialnumber format in the global settings file.

### 1.45 Changes between release 4.0.33.0 and 4.0.34.0

#### 1.45.1 Bugs

- The Warnings\_Calibration was not translated.
- Calibration failed sometimes when doing stroke by actuator.
- An exception occurred when clicking on a label that requires communication after the port has been closed.
- Only the first switchbox and alternativ switchbox got their live value status read.

#### 1.45.2 Improvements

- Updated backup and configuration summary files.

## 1.46 Changes between release 4.0.34.0 and 4.0.35.0

### 1.46.1 Bugs

- The Warnings\_RescueOnlyThroughSerial was not translated.
- When opening and writing a sub file, the new values were written to ICS but not yet updated in the settings tab.
- The master did not respond after writing settings and resetting, in certain configuration with nodes missing. A delay up to 12,5s is now implemented.
- Negative node positions were not yet supported.
- There was a rounding issue with floating numbers when reading and writing settings.

### 1.46.2 Improvements

- Improved reading of settings and reloading of the settings tab.
- Some config files had values that did not match the available selections and were therefor not editable. Those are now shown in red and are now editable.
- Updated backup summary file and added US server path for backup finder.

## 1.47 Changes between release 4.0.35.0 and 4.0.36.0

### 1.47.1 Bugs

- Corrected some Dutch translations.
- Stabilizing position during calibration sometimes failed because the current was checked as well and needed to be stable withing 5 units. Now only the position is checked.

## 1.48 Changes between release 4.0.36.0 and 4.0.37.0

### 1.48.1 Bugs

- When changing the function and/or actuator type of a node, the terms 'function' and 'actuator type' were swapped.
- Opening a sub file with an xml error caused an unhandled exception.

### 1.48.2 Improvements

- The required firmware, model and UI versions are now shown in the tooltip of the settings tabbutton.

## **1.49 Changes between release 4.0.37.0 and 4.0.38.0**

### **1.49.1 Bugs**

- The update options for master and nodes that required the exact firmware as defined in the configuration file, was not implemented properly.

## **1.50 Changes between release 4.0.38.0 and 4.0.39.0**

### **1.50.1 Bugs**

- Increased the delay after resetting ICS to 25s, because sometimes it took more than 12,5s for "running" to be received.

## **1.51 Changes between release 4.0.39.0 and 4.0.40.0**

### **1.51.1 Improvements**

- The existing seat and chassis type are ignored when writing a config file, during writing of a def file.

## **1.52 Changes between release 4.0.40.0 and 4.0.41.0**

### **1.52.1 Improvements**

- Showing the red "Sensor failure" status of Linak nodes as orange "Calibration required" status instead, which will also be seen as ok by Wheelchair Programmer 4.0.10.0 through the exit code AllUpToDateButCalibrationRequired after manually closing Wheelchair Builder.

## **1.53 Changes between release 4.0.41.0 and 4.0.42.0**

### **1.53.1 Improvements**

- When providing Wheelchair Builder with an icsdef file through Wheelchair Programmer, the wheelchair serialnumber is retrieved from that file name instead of asked.

## **1.54 Changes between release 4.0.42.0 and 4.0.43.0**

### **1.54.1 Improvements**

- If Wheelchair Builder is opened through Wheelchair Programmer and the wheelchair could not be verified because of reconfiguration, the user has the option to retry after restarting the wheelchair manually.

## 1.55 Changes between release 4.0.43.0 and 4.0.44.0

### 1.55.1 Improvements

- A new parameter "ShowIcsDefFilesButton" defines if the button to open icsdef files is shown in the start tab.
- The node status "not installed" is now also accepted as ok when programming a icsdef file.
- When handling a icsdef file, the log file now also contains the version of Wheelchair Builder.
- If more than 1 backup zip file is found, the latest is used based on the index in the file name.
- Providing a serial number to Wheelchair Builder will make it search for the backup configuration file and open it.

## 1.56 Changes between release 4.0.44.0 and 4.0.45.0

### 1.56.1 Bugs

- When providing Wheelchair Builder with an icsdef file through Wheelchair Programmer, the wheelchair serialnumber was not retrieved properly from that file name, so was still required to be entered.

## 1.57 Changes between release 4.0.45.0 and 4.0.46.0

### 1.57.1 Bugs

- When opening Wheelchair Builder with an icsdef file, the master was not checked for correct firmware and URIB versions before closing and informing Wheelchair Programmer that all nodes were ok.

## 1.58 Changes between release 4.0.46.0 and 4.0.47.0

### 1.58.1 Improvements

- When a sub file defined in a def file is not valid for the chair or could not be written, Wheelchair Builder will show a message showing which file was incompatible or failed.

## 1.59 Changes between release 4.0.47.0 and 4.0.48.0

### 1.59.1 Bugs

- The system ID was not cleared after writing all sub files of an icsdef file.
- The system ID was not cleared when using the Restart ICS icon in the top bar.

## **1.60 Changes between release 4.0.48.0 and 4.0.49.0**

### **1.60.1 Improvements**

- The ICS-firmware does no longer need to be up to date to aloud configuration to be uploaded from the wheelchair.

### **1.60.2 Bugs**

- Missing Swedish and French translations added.

## **1.61 Changes between release 4.0.49.0 and 4.0.50.0**

### **1.61.1 Improvements**

- When the configuration file is not meant for the connected chair, the message will now also show the required seating and chassis type.

## **1.62 Changes between release 4.0.50.0 and 4.1.1.0**

### **1.62.1 Improvements**

- A warning will be showed if there are no matching files.
- Read old files will not longer force users to update to a newer file.
- Made the icsdef tab programming visible.
- Added support for RE406

## **1.63 Changes between release 4.1.1.0 and 4.1.2.0**

### **1.63.1 Bugs**

- Error handling was missing when saving config file

### **1.63.2 Improvements**

- Update PermobilToolDll version 1.52.0 included to support Facelifted chairs

## **1.64 Changes between release 4.1.2.0 and 4.1.3.0**

### **1.64.1 Improvements**

- Update PermobilToolDll version 1.53.0 included to re406 (NodeTypeId11) and better support for old configfiles
- Changes to support re406 (NodeTypeId11)

## **1.65 Changes between release 4.1.3.0 and 4.1.4.0**

- Changes have been made so NodeTypeNames not are case sensitive

## **1.66 Changes between releases 4.1.4.0 and 4.1.5.0**

- Updated PermobilToolDll version 1.55.0 include ChassiTypeIds for “new M”

## 1.67 Changes between release 4.1.4.0 and 4.1.5.0

### 1.67.1 Improvements

- Added support for new M series

## 1.68 Changes between release 4.1.5.0 and 4.1.6.0

### 1.68.1 Improvements

- Updated PermobilToolDll version 1.58.0 to include support for new LINAK actuators (NodeTypeID=12).
- Fixed the turning indicator to show correct when left and right is activated
- Changed the view when in maximum resolution on a laptop to show all 14 nodes in the status menu
- Added support for the ICS3 Master ARM processor.
- Added write firmware for ICS3 Master ARM.
- Added calibration support for Linak LA42.
- Updated calibration values to reflect Wheelchair Builder 3.
- Changed password for advanced users.
- Changed the possibility to update firmware on V-Smart actuator made prior to 2012.