History of BLHeli-Suite Revisions

Changes in 14.3.0.1:
General:
- BLHeli Rev14.3 Hex files integrated.
- Improved functionality with interfaces "E" and "6" to flash SiLabs and Atmel ESC with the Cleanflight "serial 1wire passthrough for BLHeli". Now only the active ESC (e.g. 3 in a tricopter config) are accessible and accessed while "Check".
  Attention: you need to flash the FC with the latest Cleanflight or Betaflight *.hex (or *.bin) compiled with "#define USE_SERIAL_1WIRE".

External serial Interfaces:
- Adapted ZTW Spider Pro 20A for standalone boxes.
- All interfaces and interface boxes should be updated to rev. 14.3.0.1.

Changes in 14.2.0.1:
General:
- Changed verify flash option for 4way-interface/C2 to mandatory.
- Removed unnecessary double verify when flashing over 4way-interface/SK Bootloader.

External serial Interfaces:
- Fixed bug: 4way-interface for BLHeli Bootloader flash procedure failed right after the start.
  All interfaces and interface boxes should be updated to rev. 14.2.0.1.

Changes in 14.2.0.0:
General:
- BLHeli Rev14.2 Hex files integrated.
- Fixed timing issue with interfaces "E" and "6" to flash SiLabs and Atmel ESC with the Cleanflight "serial 1wire passthrough for BLHeli".
  Attention: you need to flash the FC with the latest Cleanflight or Betaflight *.hex (or *.bin) compiled with "#define USE_SERIAL_1WIRE".
- MultipleESC function now allows optional exclusion of "Motor Direction" and "Min/Center/Max Throttle" from Master-Slave synchronization. Check or uncheck sync in menu "Options... Sync….). BLHeliSuite MultipleESC mode.pdf is now accessible from within help ("?") menu.
- Did some code cleanup (to be continued…).
- "Make interface" tab sheet: "Make Arduino General" is now called "Arduino 4way-interface".
- Added support for basic functionality under Linux/Wine (might be also OSX/Wine). Please see "..\Manuals\BLHeliSuiteWine.pdf".

External serial Interfaces:
- Fixed bug: PC Interface with 4way-interfaces could not flash (erase) factory locked SiLabs C8051F850 ESC (Flycolor Fairy).
- Adapted new ESC for BLHeli rev. 14.2 for standalone boxes.
- All interfaces and interface boxes should be updated to rev. 14.2.0.0.

Changes in 14.1.0.3:
General:
- ISP interface bug fixed: Could not read/write setup using ISP interface, while flashing worked.
- ISP interface: fixed panel visibility issues, occurred after switched to ISP from other interface.
- Fixed minor issue when comparing ESC flash against empty hex files.
- Updated SK Bootloader hex resources to the latest release https://github.com/sim-/tgy/commit/073c6c49df0cbb21af9906d37745f0edd2fa8fdc#diff-4a736271fac5fcf1578da644663b8596 ("Commits on Aug 25, 2015 „) . Also comments of the source file (SKBootloader.asm) are now updated.

Changes in 14.1.0.2:
General:
- Fixed bug: Need to manually "Erase Chip" when flashing factory locked SiLabs ESC using "**A** SiLabs C2 (Toolstick)" interface.

Changes in 14.1.0.1:
General:

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- Fix a bug in early 14.1.0.0, where not locked SK bootloader was unintentionally erased when trying to flash with AFRO or Turnigy USBLinker or ArduinoUSBLinker.

Changes in 14.1.0.0:
General:
- BLHeli Rev14.1 Hex files integrated.
- Fix: PWM output Dither value meanings where shown wrong
- Fix: somehow the feature for flashing Simonk got mangled.
- Added interfaces "E" and "6" to flash SiLabs and Atmel ESC with the Cleanflight "serial 1wire passthrough for BLHeli".
  Note 1: One needs to flash the appropriate Cleanflight Firmware. The passthrough mode is only available for a few boards yet.
  Note 2: The passthrough will only work with ESC that have the BLHeli bootloader installed. For optimal results, be sure to use only the latest Bootloader ("c") revision.
  For some kind of ESC eg. with pull down resistors at the input, additional pull up resistors might be required at the FC board outputs.
  (There is also a CLI mode for manually activate the passthrough mode, to deactivate/switch the FC must be manually rebooted. To use the CLI mode choose interface "C" or "1". The CLI mode is only recommended for special testing purposes.)
- Added a "Motor" tab for Cleanflight to easily check Motor directions and throttle calibration on the fly.
- Reworked almost completely the MultipleESC function, removed some issues and added a lot improvements around the MultipleESC handling especially: overriding of Motor direction only when one ESC is selected in Single Mode, introducing a copy and paste...

External serial interface boxes:
- Fix: XP7/12/18/25A and all PolarisTdr…A were settable as "damped light" (but are not capable).
- Fix: "Low V Limit" falsely showed up for MULTI ESC.
- Added PWM output Dither value meanings for boxes with >8k flash space.
- Reworked source code partially and optimized the size.
- Fix: "B_RBBXm88P8NoBeep" did not fit into flash space. Also added file size check before flash.
- The Robbe Box with Atmega88/not upgraded and beeper enabled is no longer restricted for SingleMode SilabsC2 (B_RBBXm88P8) to BLheli minimum Rev. 4.0 (instead of 5.0).
- Adapted changes for BLHeli rev. 14.1 for standalone boxes
- All Interface boxes should be reflashed to v14.1.0.0.

Changes in 14.0.0.3:
General:
- Added new SiLabs ESC layouts (Flycolor Fairy 6A and Favourite FVT Littlebee 20A).
- Added the ability to read and write hex files >64KB.

External serial Interfaces:
- Fixed : could not flash some Arduino Mega2560 boards (with updated Arduino bootloader). BLHeliSuite now uses always "-D" option (Disable auto erase for flash) when flashing any Arduino board with AVRDude, because the Arduino bootloader seems not to handle device erase command.
- Added new SiLabs ESC layouts (see above). Please reflash the 4-way Interfaces/Boxes as usual.

Changes in 14.0.0.2:
General:
- Fix: Recompiled BLHeli Rev14.0 Hex files (13.07.2015) integrated.

Changes in 14.0.0.1:
General:
- Fixed: could not read Setup with Atmel BLHeli bootloader with interface "1".

Changes in 14.0.0.0:
General:
- BLHeli Rev14.0 Hex files integrated.
- Fixed false error msg when writing to ESC using Disable BLHeli Revision check.
- Fixed automatic Atmel/SiLabs switching "C"<->"1".

- Added support for SiLabs C8051F850/53/60/63.

External serial 4-way Interfaces/Boxes:
- Adapted changes for BLHeli rev. 14.0.0.0
- Fixed timeout and abort function in PC interface situations with BLHeli- and SK-bootloader.
- Reflash the 4-way Interfaces/Boxes as usual.

Changes in 13.2.0.4:
General:
- Fixed issue: Selection of serial com port got very slow if Bluetooth devices were involved.

Changes in 13.2.0.3:
General:
- Added automatic online checking for updates of BLHeliSuite. If a newer version is found, user can download and view this (History) file and/or allow to open the download page in the web browser. This feature is enabled by default and can be disabled (menu "options"). Manually check for updates is also possible in menu "?".

External serial Interfaces:
- Fixed bug: cannot flash locked ESC in 4w-if SiLabs C2 mode.

Changes in 13.2.0.2:
General:
- Recompiled BLHeli SiLabs Rev13.2 Hex files integrated. Includes new bootloader (BootMsg "471**c**") with fix by Steffen for "No start" issue on valid Oneshot125 signal at power up; tested here with 500-900Hz update rate (2000µS-1111µS loop time). Caution: higher update rate than 900Hz will not work. BLHeli rev. 14 will possibly enable higher update rates.
  To use the new bootloader, it is necessary to reflash the ESC via a C2 Interface using BLHeliSuite 13.2.0.2.
- Changed Atmel BLHeli bootloader to rev 4 (BootMsg "471**c**"). Includes fix for "No start" issue on valid Oneshot125 signal at power up; tested here with 500-900Hz update rate (2000µS-1111µS loop time). Caution: higher update rate than 900Hz will not work.
  BLHeli rev. 14 will possibly enable higher update rates.
  Now Atmel BLHeli bootloader also fully supports "read flash" feature.
  To use the new bootloader, it is necessary to reflash the ESC via ISP using BLHeliSuite 13.2.0.2.
- The naming convention was changed from *BESC* to the much more commonly used term *ESC*. This might lead to slight confusions, but I hope on the long run, will serve increased clarity.
  The current BLHeliSuite is backward compatible and can read ini files with ESC settings written by older revisions, but older revision cannot read newer ini files. If needed, *ESC* can be change back to *BESC* in those files.
  Also the file for external ESC Layouts is now called ESC.cfg instead of Besc.cfg. If needed rename the files simply.
- Changed Atmel ISP flash dialog default selection to "update/reinstall" bootloader in order to obtain the bootloader actuality.
- Added verify BESC and automatic verify after flash for Atmel BLHeli bootloader.
- Added MD-RX62H hex files.
- Fixed bug in Memory view dialog, which did not allow saving files in non-comparative mode.
- Storing of com port settings similar for both BLHeli bootloader (com) interfaces.
- Added auto switch mode for 4w-if with BLHeli bootloader between SiLabs and Atmel and now also with SK bootloader.

External serial Interfaces:
- Fixed bug: PC Interface mode did not work with small standalone boxes (8K flash) (prefix "B_TAQX", "B_TDLX", "B_RBBX") SiLabs C2.
- Fixed wrong keyboard layout for TAQX box in13200.
- Update protocol to V6 for not switchable interfaces and v106 for full switchable Interfaces.
  Now "read flash" is supported for Atmel BLHeli bootloader through the interfaces.
  All Interfaces should be reflashed to v13.2.0.2.
- The Robbe Box with Atmega88/not upgraded and beeper enabled is now restricted for SingleMode SilabsC2 (B_RBBXm88P8) to BLheli minimum Rev. 5.0 (instead of 4.0).

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Changes in 13.2.0.0:
General:
- Leaving the beta state….
- Restructured menus and interface selection logic
  Simonk/stk500v2 bootloader is now called SK bootloader.
  AVRootloader is now called BLHeli bootloader.
- Fixed undo Eep_Pgm_Temp_Prot_Enable button did not show up.
- Added "Save Setup to EEprom" feature for Atmel ESC.
- Added support for SiLabs BLHeli bootloader.
- Added support for FVT USB Link tool for SiLabs and Atmel BLHeli bootloader.
  To use FVT stick with Atmel the BLHeli Bootloader must be flashed with BLHeliSuite 13.2 or later.
  New Atmel BLHeli bootloader connects at 19200 baud fixed. To connect the new bootloader with older BLHeliSuite, you need to select 19200 baud.
- Changed the connection speed for Atmel BLHeli bootloader in BLHeliSuite to 19200 baud fixed.
- Added auto switch mode for BLHeli bootloader between SiLabs and Atmel.
- Fixed bug: Motor Timing control not visible in Rev. 12-12.2.

Atmel flashing over USB Linker:
- Fixed bug in SK Bootloader (faulty chip erase).
- Fixed faulty chip erase behavior of the old SK Bootloader.
- Fixed issue: ESC with Simonk installed and having calibration data in EEprom failed to flash BLHeli in the first try (EEProm verify Error).
- Changed the connection speed for AFRO and Turnigy USB linker in BLHeliSuite to 9600 baud fixed.

External serial Interfaces:
- Complete restructuring: Serial interfaces selection is shown as "4w-if" = 4-way Interfaces. Means one interface switchable for 4 different interface modes.
  - SiLabs C2 (Toolstick substitution) mode
  - Atmel BLHeli bootloader mode
  - SiLabs BLHeli Bootloader mode
  - Atmel SK Bootloader mode
  All Boxes and interfaces should be updated!

Changes in 13.1.0.0 Beta:
General:
- BLHeli Rev13.1 Hex files integrated.
- Changes the way hex files are stored. Now all BLHeli files are stored in 2 separate library's.
- Fixed InitialDir behavior changed since Windows7.
- Internal changes in Fuses storage and handling.
- Optimized Screenshot procedure. Now initial folder is "BLHeliSuite\Screenshots"
- Fixed parameter translating bug. Parameters where not written, when user confirmed "…want to write current settings?" after flash.

Atmel flashing over ISP:
- Fixed GPF, when trying to keep an empty bootloader of an erased ESC.
- Now the ATmega Fuse editor is as separate expert tool available - independent from the flash process.

External serial Interfaces for SiLabs:
- Fixed bug in "Make Arduino General": could not connect to Arduino Mega (ATmega2560).

External serial Boxes for Atmel:
- Added new ESCs and lifted all Atmel Boxes revision numbers to v13.1.0.0. The standalone Interfaces for Atmel must be reflashed to work properly with BLHeli Rev 13.1.

Changes in 13.0.0.3 Beta:
General:
- Fixed bug in Shellexecute method for start forum links in the browser (Failed with "The file does not exist").

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Changes in 13.0.0.2 Beta:

Atmel flashing over ISP:
- Fix 2: Fuses could not be written when flashing a memory locked ESC.

External serial Interfaces/Boxes in general:
- Fix: False "Rev. Error" shown.
- Lifted all Interface/Boxes revision numbers to v13.0.0.2. At least the standalone Interfaces must be reflashed to work with BLHeli Rev 13 (optional for PC-only-Interfaces).

Changes in 13.0.0.1 Beta:
General:
- Changed "PWM Frequency" to "PWM Frequency/Damped" to let user easier find the Damped light feature setting.
- Started tidying up layout of the controls a bit (will be continued).
- Minor fixes as usual…

Atmel flashing over ISP:
- Fix: While flashing, the lock byte was used as found, what caused an error message, when trying to flash a memory locked ESC. A manual edit of the Lock bits with the Fuses Editor was necessary.
- Enabled the possibility to write separate EEprom files, so one can better flash Wii-ESC firmware config files.

Changes in 13.0.0.0 Beta:
General:
- BLHeli Rev13.0 Hex files integrated.
- Changed BLHeli revision check behavior : Application will now assume that parameter handling remains the same, until Main rev. number or EEProm layout number increases. In addition, revision check is now disabled when doing a flashing external files and it is possible to temporarily switch "Disable BLHeli Revision check" for parameter editing. This allows a looser handling of marginal changes in the firmware.
- Various minor fixed and improvements.

Atmel flashing over bootloader:
- From now on the flash memory will be completely erased, to avoid negative side effects when using BLHeli bootloader (AVRootloader).
  Background: SimonK firmware does jump at run time to a fixed SK-bootloader start address (0x1C00/#7168) and tries to check the presents of the bootloader (flash not empty = <0xFF). It may happen that 0x1C00 is occupied, if BLHeli MAIN was flashed before.
  BTW: while flashing with ISP, the whole flash memory is always erased completely (set to 0xFF).

- Added recompiled Atmel hex files of rev. 11.2-12.2 using new code which fixes the "unprogrammed bootloader fuse" issue. For most internal linked hex files, the fix could be applied, but unfortunately - because of lack of space - not for AFRO MULTI rev. 12.0-12.2. User will be warned appropriately with an extra warning, if trying to flash unfixed BLHeli <13.0 over SK bootloader.
  Background for "unprogrammed bootloader fuse" issue: Perhaps the bootloader was flashed before together with SimonK Firmware without setting the bootloader fuses, which cannot be verified. After a flash with BLHeli without enabled bootloader fuses, one would no longer be able to connect through the bootloader. Then a renewed flash via the ISP interface (with writing the appropriate fuses) must be done to override the fuses and clear the situation.
  In BLHeli Rev 13.0 already a different functionality is used to overcome this issue.

Atmel flashing over ISP:
- While flashing non BLHeli firmware, now the fuse bytes will be used as found while reading out. Only the bits for using of the bootloader will be changed.
  Only flashing BLHeli will override the fuses with the values shown in BESC.cfg.
- A newly added comprehensive Fuse-Editor for Atmega8-328 can be used to alter fuses individually. Critical security changes are blocked to prevent unwanted making the MCU un-programmable.

- User will be warned if clock related fuse changes could lead to un-programmable BESC.
  Background: SimonK supports BESC using internal rc-oscillator as clock source. So flashing those BESC with fuses set to use crystal/resonator oscillator as clock source would make them inaccessible after the next reset.
  Whereas BLHeli only supports crystal/resonator oscillator as clock source and will not work with clock source set to internal RC-oscillator.
  Also various warnings are implemented when using otherwise suspiciously inadequate fuse settings.
- New ISP interface bit clock handling, improves connections to Atmega with slow clock settings (e.g. when set to factory default internal RC-oscillator (e.g. replacement of MCU).

SiLabs external small serial standalone Boxes with servo plug:
- Fixed a very rare bug producing error message when full flashing SiLabs Turnigy Plush 10,12... (caused by echoes while using Atmega UART buffer structure with 1-Wire for sending and receiving data).

External serial Interfaces/Boxes in general:
- Adapted changes for BLHeli rev. 13.0.
- Lifted all Interface/Boxes revision numbers to v13.0.0.0. At least the standalone Interfaces must be reflashed to work with BLHeli Rev 13 (optional for PC-only-Interfaces).

Changes in 12.2.0.0 Beta:
General:
- BLHeli Rev12.2 Hex files integrated.
- Various minor fixed and improvements

Atmel ISP flashing:
- Changed BLHeli bootloader (AVRootloader) to wait as long as the signal input stays logical high. This improves connection handling with BLHeliSuite and/or standalone interface boxes. It also facilitates the planned implementation of a multiple BESC handling, as it already done for SiLabs based BESC.

Atmel external serial Interfaces/Boxes:
- Changed "1" and "1s" prefixed interface/box firmware to connect to the changed BLHeli bootloader (AVRootloader). Please update these boxes/interfaces to rev 12.1.0.2.

Changes in 12.1.0.1 Beta:
- Improved error messages for ArduinoUSBLinker handling.

Changes in 12.1.0.0 Beta:

General:
- BLHeli Rev12.1 Hex files integrated.
- Fixed: Checking for Acrobat Reader >= 11.0.07 for <Win8 did not work
- Fix for Multistar 45A was not recognized as damped enabled

Atmel ISP flashing:
- efuse is now shown like in AVRStudio (unused bits shown as defaulted to 1). E.g. for YEP-7A now is shown **0xFC** instead of **0x04**.

External serial Interfaces/Boxes in general:
- Changed serial protocol to Rev. 5. Now interface revision is shown as 5 digits (e.g. 12.1.0.1).
- Changed lib for Arduino LCD4884to LCD4884s.rar provided by DFRobot/SaintSmart. Reduces code size.

Small (non Arduino) standalone boxes:
- Added firmware for the small (non Arduino) standalone boxes to connect direct over Servo cable plug in with SK and BLHeli Bootloader. Also provided Bootloaders Rev 02 with reduced timeout (optional to ensure startup connect stability)
- fixed always reading hfuse as 0 at Atmega168.

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Changes in 12.0.0.3 Beta:

- Afro/Arduino/USBLinker Interface: several minor bug fixes.
- ATMEL Bootloader Interfaces: Several optimizations for reading and writing partial locked BESC's (like AFRO's).
- Optimized Dropped Drag and Drop handling for ini and hex /eep files for Windows 8 . Known Issue: Doesn't work, if BLHeliSuite and explorer are running with different admin rights.
- Modified BLHeli Atmel for working with partial locked BESC's .

Changes in 12.0.0.2 Beta:
- Minor bug fix: wrong value translation and default value for TAIL PWM Frequency was shown.
- Removed BLHeli Rev 12.0 TAIL Firmware.

Changes in 12.0.0.1 Beta:
External serial Interfaces/Boxes in general:
- Bugfix: Damped light enabled was twisted. Damped light was enabled for not damped capable ESC but disabled for damped capable ESC.

Changes in 12.0.0.0 Beta:

General:
- BLHeli Rev12 Hex files integrated.
- Checking for Acrobat Reader >= 11.0.07 ; no fix anymore needed. (info -> "Changes in 11.0.0.0")
- Increased start up speed a lot by using precompiled lists for internal Hex resources.
- Added *Undo* and *Default* buttons to *Misc* group ("Programming by TX", "Rearming every Start").

Improvements:
- Added direct support for „Afro USB ", "Turnigy USBLinker", "ArduinoUSBLinker" , and other sticks for stk500v2 bootloader. Reading and Writing the configuration is quite fast now. "ArduinoUSBLinker" is supported specially (as a separate menu item), what enables auto baudrate setting up to 921600 baud.
- Added "Verify flash Memory" for all AVR BESC's (even useful for SK BESC's).
- Added "Identify BESC" against external original hex file folders for all AVR BESC's (very useful for SK or unknown BESC's). External files as reference are supported as well.
- Improved AVRDude execution abort procedure.
- Replaced naming "AVR" with "Atmel" in the hope of getting more clearness into Brand selection. Also changed some titles of tabs and menus...
- Added support for flashing external SimonK hex files ("Flash Other") with all Atmel Interfaces (incl. 1-Wire Interface). SK files can be merged with 1-Wire bootloader (AVRootloader). Please stay with the naming conventions for the SK hex files.
- Added precompiled SK Bootloader files, which can be merged for every thinkable BLHeli and SK BESC (incl. YEP7A).   Remark: the most MAIN hex of BLheli Atmel Rev.12 for Atemega8 will not fit with SimonK Bootloader into left available space / TAIL and MULTI fit all. So for most MAIN hex the AVRootloader should be chosen.
- Added detailed Fuse handling with automatic setting (and optional manual) for various bootloader options for flashing with 6-Pin ISP Interfaces (like USBasp …).

Small BLHeliSuite Boxes (Robbe, Turnigy Aquastar and Dlux) and Atmega8:
- Integrated support for first time initial ISP 6-Pin flash with bootloader and firmware at once.

External serial Interfaces/Boxes in general:
- Standalone Boxes: Started to add support for BLHeli and SimonK Bootloader (AVRootloader and STK500v2) for Atmel based BESC's. Lifted all revision numbers to v12. At least the standalone Interfaces must be reflashed to work with BLHeli Rev 12 (optional for PC-Interfaces).

Bug fix Atmel:
- Changes the used AVRDude revision from 6.1 back to 5.11.1 , seems better support certain interfaces. (e.g. mySmartUSB Light had EEprom issues with 6.1) . Also 5.11.1 seems to be faster (e.g. with the stk500v2 bootloader sticks).

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Bug fix SiLabs Serial Interface mode for Multiple BESC:
- Fixed visibility issue of "Multiple BESC" indication/selection bar

ArduinoISP:
- Recognition of the target MCU signature added. The ArduinoISP now automatically switches for the ATmega8 to EEprom byte aligned access.
  Please be sure to reflash ArduinoISP using "Make ArduinoISP" (ArduinoISP04m5)!

Bug fix list of serial ports:
- COM1 was listed as COM1x if ports >= 10 where available in system.

Bug fix Read Setup from Ini file:
- Fixed missing SiLabs/Atmel recognition of the ini file data. Did not read Startup_Method, Startup_Rpm and Startup_Accel for for SiLabs based ini data.

Known Issues:
- Needs several seconds for initial scan (and after system device changes) of serial ports on systems with Bluetooth serial Interfaces.

Changes in 11.2.0.7:

Atmel:

Improvements:
- Added support for „Make" and setup of ArduinoUSBLinker including auto baud adjustment for using with the SK Bootloader.
- Added basic "Flash any file" in Expert mode on the "Setup" tab.
- Settings will now be saved for any AVRDude programmer individually.

Bug fix:
- Changed the connection procedure with AVRDude
- Changed writing to EEprom as block without gaps to avoid AVRDude issues.

Changes in 11.2.0.6:

Atmel:

Bug fix:
- No connection w/o error message when trying to make Arduino 1-Wire or ISP interface
- Minor fix in bootloader for ATmega168(PA) 8Mhz (not used yet).

Changes in 11.2.0.5:

Atmel:

Bug fix:
- Error Messages when changed ESC without restarting the suite
- Minor fixes here and there as well as several improvements
- Disabled alternative bootloader port PB4 for YEP 7A

Changes in 11.2.0.4:

Atmel:

Bug fix:
- Changed device recognition…

Changes in 11.2.0.3:

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Atmel:

Bug fix:
- AVRDude command line missed quotation marks when using Arduino or ArduinoISP. Failure on BLHeliSuite folder path containing spaces.

Changes in 11.2.0.2:

Atmel:

Bug fix:
- Several minor fixes.

Improvements:
- Added a wider range of different bootloaders to support new input pins and ATmega168.

AVR ISP Interfaces:
- Bugfix: ArduinoISP boards with Arduino-bootloader speed at 19200 baud did connect to the onboard MCU instead of the ESC MCU. ISP Interface speed now is set to 9600 baud. Please "Make ArduinoISP Programmer" for these boards again with BLHeliSuite 11.2.0.2.
- ArduinoISP now uses a special "Arduino.conf" for AVRDude to be able to connect to ATmega168 MCU (YEP 7A…)
- ISP flash now respects already installed bootloader and will allow to merge it into the new full flash. If the bootloader was locked it will be locked again.
- The flashed BLHeli bootloader (AVRootloader) now will be locked to prevent unintentional overrides.

Added BESC's:
- BlueSeries 12A
- RCTimer NFS 30A
- RCTimer 40A
- Afro 12A
- Afro 20A
- Afro 30A
- YEP 7A

Changes in 11.2.0.1:

Atmel:

Bug fix:
- Visibility error in confirm flash dialog window: No details are shown, if no further warnings.

Serial 1-Wire Interfaces:
- Added Support for STK500 bootloader (USBLink/Afro ESC). This may help to test BLHeli on the fly on ESC with already installed bootloader. The bootloader is not supported for initial Flash.

SiLabs:

BESC's:
- Removed Skywalker 12A (it uses Turnigy Plush 12A)

11.2.0.0: Initial Release of BLHeliSuite

BLHeli-Setup 11.2.0.1 is now renamed in BLHeliSuite and integrates all Procedures for flash and configuration of BLHeli Atmel ESC as well as it inherits the complete functionality of BLHeli-Setup 11.2.0.1 for SiLabs.

Atmel:

- BLHeli Atmel 11.2 Hex files integrated.

Interfaces:
- ISP-Interfaces over AVRDude for the initial flash with BLHeli using the 6-wire Atmel ISP interface.
- Usb/serial 1-Wire type interfaces are able to connect over the servo cable or a additional 2 pin plug . The required Bootloader (AVRootloader) will be written to the ESC with the initial flash with BLHeli over the ISP Interface.

BESC's:
- BlueSeries 20A
- BlueSeries 30A
- BlueSeries 40A
- HobbyKing UBEC 20A
- HobbyKing UBEC 30A
- HobbyKing UBEC 40A
- Supersimple 18
- Supersimple 20
- Supersimple 30
- Supersimple 40
- Multistar 15A
- Multistar 20A
- Multistar 30A
- Multistar 45A
- Sunrise HiMulti 20A
- Sunrise HiMulti 30A
- Sunrise HiMulti 40A

<u>*SiLabs:*</u>

Improvements:
- Added official support for external hex files in subfolder: ”\BLHeli_HexFiles\”.

BESC's:
- Align RCE-BL15P 15A
- Align RCE-BL15X 15A
- Align RCE-BL35P 35A
- Align RCE-BL35X 35A
- EAZY 3A v2
- Gaui GE-183 18A
- HiModel Cool 22A
- HiModel Cool 33A
- HiModel Cool 41A
- HobbyKing 10A
- HobbyKing 20A
- HobbyKing 35A
- HobbyKing 50A
- Flyfun 40A OPTO (FW: Turnigy Plush 40A)
- FVT SKYIII 30A
- Origin 10A (FW: XP-7A)
- Origin double (FW: XP-7A/DP-3A)
- Platinum Pro 30A
- Polaris Thunder 12A
- Polaris Thunder 20A
- Polaris Thunder 30A
- Polaris Thunder 40A
- Polaris Thunder 60A
- Polaris Thunder 80A
- Polaris Thunder 100A
- RCTimer 6A

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- Skywalker 12A
- Skywalker 20A
- Skywalker 40A
- Skywalker Quattro 20A (FW: 4 x Skywalker 20A ESC)
- SuperMicro 3.5A
- Tarot double 30A
- Turnigy DP 3A
- Turnigy AE 20A
- Turnigy AE 25A
- Turnigy AE 30A
- Turnigy AE 45A
- Turnigy KForce 40A
- Turnigy KForce 70A HV
- Turnigy KForce 120A HV
- Turnigy K-Force 120A HV v2
- Turnigy Plush 6A
- Turnigy Plush 10A
- Turnigy Plush 12A
- Turnigy Plush 18A
- Turnigy Plush 25A
- Turnigy Plush 30A
- Turnigy Plush 40A
- Turnigy Plush 60A
- Turnigy Plush 80A
- Turnigy Plush Nfet 18A
- Turnigy Plush Nfet 25A
- Turnigy Plush Nfet 30A
- XP-3A
- XP-7A
- XP-12A
- XP-18A
- XP-25A
- XP-35A SW

Old BLHeli-Setup history

Changes in 11.2.0.1:

Bug fix:
- "Write Setup" was enabled even when there was no valid parameter set loaded.

Serial Interfaces:
- Added Firmware for Turnigy Delux Box with new keyboard layout (**L**eft - **U**p - **D**own - **R**ight). Old was L-U-R-D.
- Added bootloader hex files for all small ATmega boxes for future upgrade with ATMega168/328 MCU.

Changes in 11.2.0.0:

BLHeli 11.2 Hex files added.

Bug fix:
- Minor Bug in Parameter translation.

Serial Interfaces:
- Adapted new Beacon Delay values
- Raised all serial interface revision numbers to V112. Update is optional but recommended for correct beacon delay parameter display.
- The small Boxes now running out of space (Robbebox with beeper at least…. Next bigger update will need a MCU upgrade to 16Kbyte ATmega168…)

Changes in 11.1.0.1:

Bug fix:
- "Read Setup from ini file" did not work.

History of BLHeli-Suite Revisions

Changes in 11.1.0.0:

BLHeli 11.1 Hex files added

Bug fix:
- Toolstick Interface: Workaround for SiLabs Toolstick Interface hanging sometimes when disabled dll error dialogs. Known limitation: On connect error, 2 message dialogs show up (one from dll, one from application).
- Toolstick Interface: fixed exception when started with missing SiLabs.dll.
- Fixed: Governor Target calculator was not updated automatically after "Read Setup"

Improvements:
- Disable overlapping hint-window for Governor Target slider, when changing the value.
- Added an individual list of favorites, to optionally limit the listed BESCs, if a brand-new BESC will be flashed.
- SumatraPDF.exe is now supported as alternative PDF-Viewer. To use it instead of other PDF readers, please download the portable version from "http://blog.kowalczyk.info/software/sumatrapdf/download-free-pdf-viewer.html" and simply copy the single "SumatraPDF.exe" into the "BLHeli-Setup\Manuals" directory.
- Added check/warning for MCU unsuitable for the hex file, before flash.
- Added verification procedure for target BESC against the original hex file, to simplify corruption checking of the flash-memory.
- Added an option "save a Screenshot to file" for most of the application windows. (*.png or *.bmp).
- Added LED-like symbols to indicate **READ** and **WRITE** operations at the Interface/ BESC connection.
- A lot visible and invisible restructuring…

Added BESC's:
- FVT SKYIII 30A
- Skywalker 12A
- Turnigy KForce 70A HV
- Turnigy Plush Nfet 18A
- Turnigy Plush Nfet 25A
- Turnigy Plush Nfet 30A
- XP-35A SW

Serial Interfaces:
- Defused C2Data line checking to support unfavorable conditions on the C2D line.
  http://www.rcgroups.com/forums/showthread.php?t=1686498&page=48#post26922573
- Raised all serial interface revision numbers to V111. Update is optional but recommended for at least all standalone Interface boxes to support the new BESC …
  Update of the firmware may also help, if connection errors occur with the error message: "C2D line low.".

Changes in 11.0.0.0:

BLHeli 11.0 Hex files added and adapted parameter handling.

Bug fix:
- Supermicro 3.5A BESC was not recognized as damped mode enabled (UI only).
- UI did not inform correct on write error in seldom situation after connection got lost
- Fixed timing issue in Bootloader UI for 2-wire serial Interfaces
- Added workaround for starting Adobe Acrobat Reader XI in protected mode (sandbox) mode using ShellExecuteEx under Windows 8(1). Info: http://blogs.adobe.com/asset/2010/07/introducing-adobe-reader-protected-mode.html
- Various minor fixes of the UI.

Improvements:
- Added Parameter Import/transformation between all different Revisions (2.4 <-> 11).
- Added Simple Design option in UI.
- Added background colour option in UI.
- Added extended BESC info into popup window, dropped "at max. Xs Lipo" info. Please consider manufacturers data or "BLHeli supported SiLabs ESCs.pdf" for further info.
- Improvements in BESC recognition procedures.
- BLHeli Revision now will be written to Setup.ini files in addition.
- General improvements as well ….

Added BESC's:
- Tarot double 30A

Serial Interfaces:
- Fix in Pinout Documentation: Pinout Arduino UNO w. 1602 LCD Shield: D2<->D3 was twisted (only in Docu)
- Sorted the list of BLHeli parameters in the Firmware for to match the pdf manual
- Improved C2CK Line checking for Multi BESC interfaces, to deal with higher capacitive loads.
- Raised all serial interface revision numbers to V110. Please reflash at least all standalone Interface boxes …

Changes in 10.4.0.3:
Bug fix:
> Multi BESC Mode: Button "Check" updated disconnected ESC not correctly.
Improvements:

- "Enable Log" and "Expert mode" options are now independent.
- "Ignore" Button in Flash Assistant dialog is now called "Ignore the list, pick a file…." and is now visible in every mode (normal and "Expert").

Added BESC's:
- Turnigy K-Force 120A HV v2
- EAZY 3A v2

Toolstick Interface:
- SiLabs DLL changed from Version 4.10 to 4.21. The Stick firmware will be updated on first connect automatically from Rev. 3.1 to 3.4.

Serial Interfaces:
- Bug fix: Bug: GE-183 18A was handled as fully damped / Platinum Pro 30A was handled as not fully damped.
- Bug fix: Failed to flash Platinum Pro OPTO (MCU C8051F390)
- Updated serial protocol revision to V4 for all Interfaces.
- Raised all Interface Revision numbers to V105.
- Optimized Timing again (decreased speed a bit, solid timing)
- C2 Interface : Additional line state checking before connecting.

Changes in 10.4.0.0:
BLHeli 10.4 Hex files added.

Added BESC's:
- Gaui GE-183 18A
- Platinum Pro 30A
- Polaris Thunder 12A
- Polaris Thunder 20A
- Polaris Thunder 30A
- Polaris Thunder 40A
- Polaris Thunder 60A
- Polaris Thunder 80A
- Polaris Thunder 100A

Serial Interfaces:
Updated serial protocol revision to V3 for Multiple-BESC Interfaces.
Raised all Interface Revision numbers to V104.
Optimized Timing (increased speed/higher timeouts)

Changes in 10.3.0.1:

Fixed misalignment of controls when using windows magnifier.

Changes in 10.3.0.0:
BLHeli 10.3 Hex files added.

Added BESC's:
- Align RCE-BL15P
- HobbyKing 20A
- HobbyKing 35A
- HobbyKing 50A

Please reflash the Arduino/AT-Mega based serial programming boxes to "…103.hex".

Fixed: Eep_Pgm_BEC_Voltage_High failed to load from ini File.
Fixed: USB Toolstick detection failure when running on certain tablett pc's.

Changes in 10.2.0.1:
Cheated version of BLHeli 10.2 Hex.
Please relflash with this 10.2 Rev if You use Turnigy_AE, the Align RCE-BL35P or the newly added Align RC-BLn5X.
Also Please reflash the Arduino/AT-Mega based serial programming boxes (added Align RC-BLn5X).

Added BESC's:
- Align RCE-BL15X 15A
- Align RCE-BL35X 35A

Changes in 10.2.0.0:
BLHeli 10.2 Hex files added.

Added BESC's
- Align RCE-BL35P 35A
- HobbyKing 10A

Changes in 10.1.0.0:

History of BLHeli-Suite Revisions

BLHeli 10.1 Hex files added.

Motor Calculator:
Minor enhancement enables entering 3 digit Main Gear teeth easy.

Changes in 10.0.0.0:
BLHeli 10.0 Hex files added.
Adapted the additional parameters from BLHeli.

Added ESC's
- Turnigy KForce 40A
- Turnigy KForce 120A HV

Motor Calculator:
GOV target now shows also the target rpm in relation to the motor capabilities as percentage value.
Added new Combo-box for individual compensation factor (% Value) for Lipo voltage drop and Motor KV drop under load. Default is 81% (former procedure assumed 3.8V/s @90% KV drop ->81.43%).
Hassle free update of old Motor data included.

Flash Dialog reworked in parts. Now selection of fitting flash-file is even more comfortable.

Serial Interfaces handling:
Added the capability to flash BESC's in arrangements from 1 up to 8 BESC.

Serial Interfaces:
Integrated Multiple-BESC capabilities in the Arduino Interfaces and Boxes.
Updated serial protocol revision to V2 for Multiple-BESC Interfaces.
Raised all Interface Revision numbers to V10.
Added a Arduino Uno based box with a LCD4884 Shield.
Added an Atmega168 upgrade option to the small boxes (Robbe, TDLX, TAQX) to give room for Multiple-BESC capabilities. The small Box will handle up to 5 or 6 BESC's at once (Still Tests are needed).
Several changes in the serial Interface firmware to reduce size and efficiency.

BLHeli Manuals ("BLHeli programming by TX "/" Governor SiLabs High and Low.xls") are now included and accessed local for easier and faster handling. Because information about supported BESC may change more frequent, "BLHeli supported SiLabs ESCs" is not included, but will be downloaded on access through "BLHeli-Info" menu. (btw: if you store the file as "BLHeli supported SiLabs ESCs.pdf" in the Application path, it will be loaded from there).

All in all:
Some minor general improvements of the UI.
Some bug-fixes too, of course...

Changes in 9.4.0.0:
BLHeli 9.4 Hex files added.
Changed MCU memory recognition procedure again; now hopefully more bullet-proof.
Fixed a small bug in GOV target Motor calculator.
GOV target color now indicates
- → Headroom >15%   = green;
- → Headroom <15%   = blue
- → Headroom 0% = red
Some minor improvements in UI.

Changes in 9.3.0.3:
Fix only relevant for BESC C8051F312 MCU's (so eventually Turnigy 45AE, Turnigy Plush 40A (HW 40A Opto). The Lock byte could not be read out, so "Read Setup" stopped with "Invalid argument." Error.
The Firmware of the serial boxes now accept also DeviceID = 0x09.

Changes in 9.3.0.2:
Finally fixed in 9.3 reinvented bug: "Device cannot be opened" Exception in Toolstick Interface mode, when disconnected.

Changes in 9.3.0.1:
Try to fix in 9.3 reinvented bug: "Device cannot be opened" Exception in Toolstick Interface mode, when disconnected.

Changes in 9.3:
BLHeli 9.3 Hex files added.

Changed Ppm_Max_Throttle max. value to 255, Ppm_Min_Throttle max. value to 125.

Improved Desktop for the Parameters:
- Changed functional sort order of the parameters.
- Changed Outfit to a more modern style.
- Improved visual indication for Default and Undo buttons.
- Minor bug fix: parameter visuality in prior BLHeli versions.
Fixes:
- Improved Error handling when unplugging BESC while serial interface is connected to PC.

History of BLHeli-Suite Revisions

Updated Firmware for all the serial/usb Box interfaces.
- Improved Error handling when unplugging BESC while interface is connected to PC.
- Improved for smaller code size.
- Added Firmware for the serial/usb Box interface "Turnigy AquaStar Water Cooled ESC Program Box" (TAQX Box)

Changes in 9.2:
Exchanged BLHeli 9.0 against fixed 9.1 hex files.
Added Firmware for the serial/usb Box interfaces to ignore Bug in BLHeli 9.0.
(RBBX Box V6 / TDLX Box V3 / Arduino Uno w. Shield V3)
Added BLHeli 9.2 Hex files.
Adapted defaults for Beacon Delay.

Changes in 9.0.0.4:
Integrated Governor Range mode "low" into Governor Target head speed calculations.

Changes in 9.0.0.3:
Fixed: Any click on any "Default button" sets also "Startup Method" to default.
Fixed: Exception occur when delete all text from Motor-Setup-Name combobox.
Increased the window size a bit, so the scrollbars not always show when using "non classic Windows style".

Changes in 9.0.0.2:
fixed: Eep_Pgm_Gov_Setup_Target not re-read from Ini-file
fixed: Gov_Gain Default-Indicators got mixed up in certain conditions.
Improved "Motor-Gear Setup" handling.

Changes in 9.0.0.1:
fixed: "Device cannot be opened" Exception in Toolstick Interface mode, when disconnected.

Changes in 9.0:
fixed: Startup_Power greyed out when Startup_Method=direct. (Thanks Steffen)
Some improvements for serial solutions.
Adaptation to BLHeli 9.0 including new revisions for the serial BLHeli-Setup-Boxes (RBBX,TDLX and Arduino UNO).
Added Bootloader for ATMega8 solution.

Changes in 8.0.0.2:
Improved handling of unflashed (partially locked) BESC

Changes in 8.0.0.1:
RBBX Firmware V3 included (size optimised)
Improved check for future BLHeli Revision.
Fixed a wrong error message after successful serial verify.
Minor improvements

Changes in 8.0:
Interface section reworked in all parts.
Includes now support for serial interfaces:
- A small BLHeliBox for field programming as dual mode Interface
- An AVR based stick (ARDUINO Nano) Interface
- A simple AVR chip (ATMEGA8) Interface

added ESC's
- RCTimer 6A
- Turnigy AE 45A
- Turnigy Plush 40A
- Turnigy Plush 60A
- Turnigy Plush 80A

Changes in 7.0.0.1 Beta::
added ESC's
- HiModel Cool 22A
- HiModel Cool 33A
- HiModel Cool 41AA

A lot work on details still under work...
Please be patient, as I'm restructuring the Toolstick interface section heavily...

Changes in 7.0 Beta:
A lot work on details still under work...

Changes in 6.11:
fixed: Toolstick interface was not disconnected after read.
Added several helpful links (to BLHeli Manuals (pdf)., source code...).

History of BLHeli-Suite Revisions

Changes in 6.1:
Added 6.1 hex files
Prepared for serial interface (Robbe-Box etc.)

Changes in 6.0:
fixed: Bug in Reading Ini-Files of Layout Rev >10

Changes in 5.0.2:
fixed: "Low voltage Limiter" was not shown for "MULTI"
Minor change: "Startup RPM" hints to "1=0.67 2=0.80"

Changes in 5.0.1:
fixed: While writing back the Setup, ESC layout and BLHeli ID strings where not aligned to 16 char. Did no have any side effect so far, but anyway a bug is a bug.
Setting Damped light mode to ESC >1s caused an error message. (thanks Steffen!).

Changes in 5.0:
A lot of minor improvements and clearance
Motor Setup reference Values are now stored in an Ini-file; bound to the ESC Name.

Start with work on internationalization.