| Date | PC APP software: | BOB Firmware: | Donlight Firmware: | Github hash |
|------------|--------------------------------|---------------|--------------------|--------------------------------------------------|
| 07/07/2022 | 1.3.2 +Gerderla nd detup | +1.00.06 | 2.0.0 | 9c5dd7e6e79d4a 42567d73da661b cd3da96c2c06 |



After spending 3hours with Richard at Gerderland and connecting the turning signals from the vehicle to an oscilloscope, we noticed this vehicle had a delay between turning signals of 9ms. As the BOB was set to tolerate delays up to 5ms between received turning signals the lights were glitching when the hazard was on.

13000003500_rev01_BOB_V01_00_05_hazardelaytoleranceUpto11ms is build on top of v01_00_04 with increased tolerance to delay in turning signals.

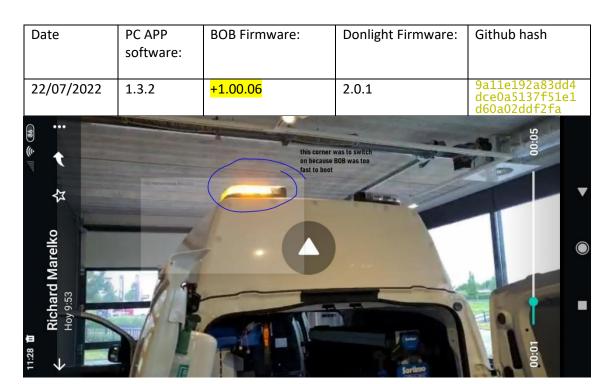
Also , Setup for gerderland vehicles was created.

| Date | PC APP software: | BOB Firmware | Donlight Firmware | e: Github hash |
|----------------|------------------|--------------|-------------------|-----------------------------------------------------------------------------------------------------|
| 13/07/202 2 | 1.3.2 | +1.00.04 | 2.0.1 | 0dc0fd53f8bab6 064ef1e388c6d3 fc15de7f900a |
| | | | | Y1:3.440V Y2:-960.0mV AY-4600V X1:-600.0us AX:98.00us PMAX:10.0094b S:-(4.96xV/s) |

After two weeks at Marelko debugging Ambulances we made the following changes:

- Created BOB 1.00.04 firmware, improvements in the clock were made reverting the bug present in 1.00.03 firmware.
- Updated all Batch3,batch4,batch5 firmwares, they don't turn off when the sync canbus is not received, this way even if the BOB fails they will continue functioning (not synchoniced and unable to switch off), they also reset its canbus if they feel something is wrong.

This setup was tested at Marelko and didn't show any error 13h uninterrumpted.



After a morning call with Richard, one ambulance's rear left corner was not switching on, this was caused by the BOB booting too fast.

This issue appeared with 1.00.04, as we improved the clock the booting process was finished faster.

I created the BOB firmware $v1_00_06$ which is built on top of $v1_00_05$ with 300ms delay instead of 250, the issue was reported fixed after Richard tested it during 6 minutes with no problem.

| Date | PC APP software: | BOB Firmware: | Donlight Firmware: | Github hash |
|------------|------------------|-------------------------------------------------------------------------------------|--------------------|--------------------------------------------------|
| 27/07/2022 | 1.3.3 | +1.01.01(ping) +Programming bob firmware(39rev0) +BlueProgrammer firmware(38rev0) | 2.0.2(ping) | c98619c3501752 e58b02ad9e8051 fafe462524e1 |

Both programmer firwares need to be updated to properly work with the pc app now.

Intense rework of the PC APP:

- Fixed bugs involving Batch3 firmware updates, fixed also bugs with the firmware update involving more than one module.
- Added scroll bar to accommodate many more donlight modules at the same time in the pc app.
- Fixed bug of duplicated discovery of modules.
- Added the open folder button to easily access the luxae_binaries folder from the pc app.
- USB file transfer between pc app and programmer now is chunked and more robust (blue programmer still has issues keeping up with large firmware transfers)
- Created and tested an autoupdate script to avoid having to download and unzip the pc app every time, just double click and the github windows CLI does the job (windows github cli needs to be installed in the pc)

BOB firmware:

- Bootloader now works with the pc app, also the BOB firmware was made compatible with the programmers and the pc app.
- 1.01.01 was Built on top of the 1.00.06.
- It has a more complex canbus funcionalities so it must be tested toroughly.

Donlight firmware:

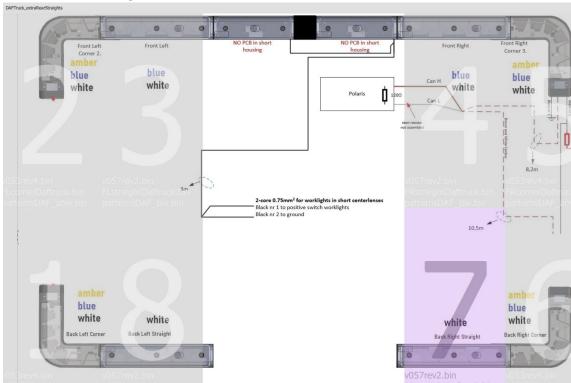
• Ping functionalities were added.

| Date | PC APP software: | BOB Firmware: | Donlight Firmware: | Github hash |
|------------|---------------------------------------------------|---------------|--------------------|--------------------------------------------------|
| 31/08/2022 | 1.3.3 + DAFTruck_ extraRearSt raights | 1.01.01(ping) | 2.0.2(ping) | 7511c39f002398 c8dcc40d9d5355 6dbd8c38a32d |

Pc APP:

After Wesley's request:

Added DAFTruck_extraRearStraights setup, <u>based</u> on DAFTruck_amberbluewhite setup with two extra white straights on the rear.



Donlight Changelog 12/12/2022

| Date | PC APP software: | BOB Firmware: | Donlight Firmware: | Github hash |
|------------|------------------------------------------------------------------|---------------|--------------------|--------------------------------------------------|
| 01/09/2022 | 1.3.3 + Config from straight modules on Sprinter6 setups changed | 1.01.01(ping) | 2.0.2(ping) | e2217c454e3b66 7f0351ef5eeccf 91c31908791e |

Pc APP:

After Wesley's noticed the INO2 enable/disable of the emergency lights was not working, I checked and somehow I missed a '*' character in the straight configs, updated and tested by wesley.

| Date | PC APP software: | BOB Firmware: | Donlight Firmware: | Github hash |
|------------|---------------------------------------------------------------------------------|---------------|--------------------|--------------------------------------------------|
| 10/10/2022 | 1.3.3 + Multiple config files updated, cointaining typo in Polaris canbus addr. | 1.01.01(ping) | 2.0.2(ping) | f0844f333ca651 35439bb0eb6315 2379dd5a80e3 |



After reviewing one by one this are the specific configs fixed that were deaf to polaris commands.

- Box-body MB Sprinter
 - o BLcorner
- sprinter6
 - o BLcorner
 - o FL55blue
 - o FR55blue
- sprinter6_fixedcolours
 - o BLcorner
 - o FL55blue
 - o FR55Blue
- sprinter6_fixedcolours_blue_white_fronts
 - o BLcorner
 - o FL55Blue
 - o FR55Blue
- sprinter6RearWithArrow
 - o BLcorner
- sprinter8_fixedcolours
 - o BLcorner
 - o BLstraight
- sprinter9
 - o FrontLeft
 - o FrontRight

| Date | PC APP software: | BOB Firmware: | Donlight Firmware: | Github hash |
|--------------------|----------------------------------|---------------|------------------------------------------------------------|--------------------------------------------------|
| 24/11/ <u>2022</u> | 2.0.0 +huge code refactor. | 1.01.01(ping) | +2.1.0(49daysfix) +Programming tool firmware(38rev2) | 187d2a35941fb8 e43b646577c7bf 346ba319771b |

Pc APP:

Code refactored and cleanup, pc app setup set to work with data streams other than USB, (Bluetooth for example)

Added self-recovery after USB/Bluetooth NACK packages, slows down data stream when needed.

PC app 2.0 is not compatible with previous Programmers (39rev0,38rev0) Canbus part remains the same.

Donlight Firmware:

Canbus bootloader for 53rev3 and 57rev1 (old donlights using the chip072) is updated to fit larger programs (expanded from 22KB to 32KB).

 This bootloader is included inside production_53rev3dummy(cornerBATCH3).bin production_57rev1dummy(straightBATCH3).bin

All firmware versions have been fixed and tested to overcome the 49 days rollover of the systick, systick gets initialized 10 seconds to rollover, if they don't stop lighting after 10 seconds of working they wont stop after 49 days either.

Added the firmware needed for the programming tool 38rev2

Donlight Changelog 12/12/2022

| Date | PC APP software: | BOB Firmware: | Donlight Firmware: | Github hash |
|--------------------|-----------------------------------------------|---------------|--------------------|--------------------------------------------------|
| 12/12/ <u>2022</u> | 2.0.0 +typo in Dakrip2.0's config files fixed | 1.01.01(ping) | +2.1.0(49daysfix) | a2daad001873f4 7b49b72a27d6be 4d8fa8b4db8d |

Pc APP:

Richard spotted an issue with working lights in DAkrip2.0 setup, due to a typo in the corners configuration.bin they were doing a arrow left when they should be doing white scene lights all, i also fixed the straights activating its worklights when front was activated instead of rear as they should.