

# v6 support group

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Problems, fixes and ideas about v6:

## No stiffness in joints.

- All pitches in legs are affected.
- Bhuman tried to reproduce this in choreograohe but was not successful.
- HTWK has a problem with standing up where the robot powered off completely.
  - Proposed fix: Stop naoqi + Extras

## unable to open camera device

- There is a magic script: "Usr/libexec/reset\_cameras.sh toggle" that resets the camera (the script will be added to the spl website).
- In most of the cases (according to NaoDevils) the script can be ran at startup (boot) and have a sleep after the script execution.
  - Bhuman stated you may need to execute this script everytime you start the naoqi

## Flipped top/bottom camera

- Bhuman somehow managed to have the cameras flipped. Only occured once however.
  - Proposed fix (not clear if this helps): Use the symbolic links for camera-top, camera-bottom
  - Nao Devils reports that does not work
  - The reset script helps, it removes the device and adds it again, works.

## lock files seems to be broken for v6

- Lock file sometimes is not removed when the software crashes (bhuman).
- Might be a problem with the operating system.

## camera stuff:

- first timestamp of camera is 0
- timestamp of camera is at the beginning of recording the pixels - on v5 it was at the end.
- have a look at the focus when falling down a lot
  - Might break the focus mechanism - htwk is worried
- camera value read seems to return 0 at the start (also true for registers)
  - program to check values: v4lctl or similar.
- auto exposure is not a bool! It does not what doh expect.
- setting registers - the second byte is never used when reading or writing a reg value - You need to wait some time (Bhuman: 100ms, HULKS: 500ms, Softbank : 1000ms) after a read instruction before you execute the get method. - Manual white balance can only be done via registers at the moment.
- cameras are supposed to be synchronized.
  - At least softbank said that. Might be the case that you have to set the registers correctly to have a master and a slave.
- camera angle and position seems to differ from the docs and v5

- Have a look at the binning options for the new camera. Reduces noise and some artifacts resulting from the Bayer pattern. Ask HULks if you want to see test images.

## real time broken on Lola.

- Lola seems to wait for some action to happen from our side.
- Try to return a package. The service seems to break when the "send/return" cycle is broken.
- We might get two packets at once as that is a stream. Larger buffer helps?

## MISC

- if you want to connect to the Lola socket after you disconnected, you need to wait some time.
- you can use pip on the robot.
- leds can be set all at once costing you nearly no resources.
- stiffness changes seem to be instant (took some time in v5).
  - Should enable us to use dynamic stiffness during walking.
- stiffness may be higher on the v6? Check for fall motions and stand.

## let the robot stand up after flashing it

- It calibrates itself (at least the gyro). Delete media internal ko/ok if it does not calibrate correctly. You also find interesting information there.

## hardware failures:

- "connection torso-hip is loose", "joint is moving in the housing, gear is fine". Use these phrases when sending in to SBR. They also seem to have short term solution: got glue.
- Arms breaking: "elbow mount broken". To reinforce: put tape around the arms.
- The bios battery can be exchanged by only removing the plastic cover of the head. Otherwise the joints won't cool down. You can also fake the hardware clock. (Script: Fake-hwclock)