

Video Measurement System

Cameras - GUI Buttons linking

• Issue 01: Resolving Inconsistent Device Names for USB Cameras with Persistent Udev Rules

- When using three cameras connected to a computer via video capture cards, the assigned device names (e.g., /dev/video0, /dev/video1, etc.) change upon each system restart. This causes issues with accessing the cameras using a consistent naming scheme such as in any GUI application.

- **Steps to Resolve the Issue**

- **1. Identify Camera Serial Numbers:**

- Use `udevadm` to identify the serial numbers of each video device.

```
udevadm info --name=/dev/video0 | grep ID_SERIAL_SHORT
```

```
udevadm info --name=/dev/video1 | grep ID_SERIAL_SHORT
```

```
udevadm info --name=/dev/video2 | grep ID_SERIAL_SHORT
```

- **2. Create Udev Rules File:**

- Create or edit the udev rules file to create symbolic links based on the serial numbers.

```
sudo gedit /etc/udev/rules.d/99-usb-cameras.rules
```

- Add the following content to the file, ensuring the `ATTR{index}="0"` to target the primary video node:

```
SUBSYSTEM="video4linux", ATTRS{serial}="5312198300396", ATTR{index}="0",
```

```
SYMLINK+="video_cam1"
```

```
SUBSYSTEM="video4linux", ATTRS{serial}="5312404600251", ATTR{index}="0",
```

```
SYMLINK+="video_cam2"
```

```
SUBSYSTEM="video4linux", ATTRS{serial}="5312279300053", ATTR{index}="0",
```

```
SYMLINK+="video_cam3"
```

- **3. Reload Udev Rules:**

- Reload the udev rules to apply the changes.

```
sudo udevadm control --reload-rules
```

```
sudo udevadm trigger
```

- **4. Verify Symbolic Links:**

- Check if the symbolic links have been correctly created.

```
ls -l /dev/video_cam*
```

- **5. Check Udevadm Info:**

- Verify that the symbolic links are pointing to the correct device nodes.

```
udevadm info --name=/dev/video_cam1
udevadm info --name=/dev/video_cam2
udevadm info --name=/dev/video_cam3
```

- **6. Test Camera Access:**

- Test accessing the cameras using the symbolic links with `ffplay` .

```
ffplay /dev/video_cam1
ffplay /dev/video_cam2
ffplay /dev/video_cam3
```

- **Troubleshooting Steps**

If the issue persists, follow these additional steps:

- **1. List Video Nodes:**

- List all video nodes and their attributes to confirm correct identification.

```
for i in /dev/video*; do echo $i; udevadm info --name=$i | grep ID_SERIAL_SHORT; done
```

- **2. Log Udev Events:**

- Monitor udev events to debug any issues with rule application.

```
sudo udevadm monitor --environment --udev
```

- **3. Restart System:**

- Restart the system to ensure all changes are properly applied.

```
sudo reboot
```

- By following these steps, you will create persistent and consistent symbolic links for your video capture devices, ensuring reliable access to your cameras across system reboots.

Issue 02: Closure of camera node once the calibration is completed successfully #Pend.TESol

- Whenever the calibration is completed successfully, the camera node is still running and needs to be closed manually.
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