libv4l

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- Introduction
- Future (from last years presentation)
- Emulated controls
- When to enable?
- Video processing
- Future

Introduction

- Fedora better webcam support feature: http://fedoraproject.org/wiki/Features/BetterWebcamSupport
- Get gspca into the mainline kernel
- Remove format conversion from gspca
- Applications don't handle the new formats
- Sollution: Write a conversion library
- And patch **ALL** applications to use it

The Future?

- Add emulated controls
- Better handle rotation
- Software image quality enhancements:
  - White balance
  - Normalize
- Software image quality enhancements have a separate measure / transform phase
- GET_WEBCAM_ATTR ioctl
- Emulated controls persistency

Emulated controls

- Persistent
- Shared
- Using shared memory:

  /dev/shm/libv4l-hans:usb-0000:00:1d.7-5:BisonCam NB Pro
- Disadvantage: settings are per user

When to enable ?

- Enabling emulated controls, forces libv4l to go through the conversion path, even when not converting.
- libv4l has a device table for devices which benefit from software video processing.
- Also enabled when the device will always need conversion.

Video Processing

- White balancing, simple make image gray on average algorithm
- Gamma correction
- Manipulate per component (RGB) component lookup tables, so once sort of processing is enabled, further processing is essentially free.
- Only works in RGB color space, requires YUV -> RGB -> YUV conversion in certain cases

The Future

- Add plugable processing algorithms, so that we can have driver specific algorithms
- Move quirk table to a config file ?
- Support for software auto focus ?
- Support for video input device sharing ?
- Get more out of tree drivers into the mainline, port mainline v4l1 drivers to v4l2

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