V4L2 on Steroids
The Request API

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Video 4 Linux 2
Media Controller
Problems
The Request API
Implementation
Next
Configure Formats
- Format, Crop, Compose

Set Controls
- 175 Standard Controls
- Many Custom Controls

Allocate Buffers
- 3 Memory Models
- DMA BUF

IDEAS ON BOARD

V4L2
V4L2

Userspace Application

V4L2 Driver

YUV

MPEG
V4L2 + Sub-devices
V4L2 + Sub-devices

V4L2 call (Set Format)

Bridge Driver

v4l2_subdev_call(video::s_fmt)

Decoder Driver

Configure the decoder scaler

Success ?
return

Failure ?
Configure the bridge scaler
V4L2 call (Set Format)

+ Set Control, Start/Stop Streaming, ...

Bridge Driver

v4l2_subdev_call(video::s_fmt)

Success ?
return

Failure ?
Configure the bridge scaler

Decoder Driver

Configure the decoder scaler

V4L2 + Sub-devices
V4L2 + Sub-devices

Diagram showing the connection between Userspace Application, Bridge Driver, and Decoder Driver, with two devices: /dev/video* and /dev/v4l-subdev*.
V4L2 + Sub-devices
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V4L2 + Sub-devices + Media Controller
Device Model
Media Device
Media Device
V4L2 On Steroids – The Request API
Problems
Problems
Video 4 Linux 2
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Implementation
Next
Requests
Requests
Requests
Requests
V4L2 On Steroids – The Request API

Video 4 Linux 2
Media Controller
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The Request API

Implementation

Next
Requests Lifetime Management

- ALLOC
- QUEUE
- DELETE
- Complete
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Entity Request Data
Video 4 Linux 2
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Next
Entity State
Entity State
Requests API
Meta-data
• Request API and proof-of-concept implementation
  https://lwn.net/Articles/668726/

• Git development branch
  http://git.linuxtv.org/pinchartl/media.git/log/?
h=drm/du/vsp1-kms/request
Contact

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? !
thx.