Universal Home API for Linux
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Arjen Klomp

System Architect
LogicaCMG Nederland B.V.
Kennedyplein 248
5611ZT Eindhoven
arjen.klomp@logicacmg.com
www.logicacmg.com

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- Who we are
- Goal of this project
- Work break down
- Implementation Architecture
- Status/Plans
- How to use UHAPI4Linux

History

Founded 1969
Floated on London Stock Exchange in 1983

Founded 1964
Floated on London & Amsterdam Stock Exchanges in 1995

Merged 30 December 2002

Listed on the London (FTSE 250 & techMARK 100)
& Amsterdam (Euronext) Stock Exchanges

LogicaCMG today

- a major international force in IT services and wireless telecoms with a leading position in Europe
- over 21,000 staff
- operating in 34 countries
- £1.6 billion revenues*
- a broad portfolio of offerings across key industry sectors
- more than 40 years of experience in IT services
- a worldwide client base of blue-chip organisations

* for the 12 months to 31 December 2004

Did you know that…

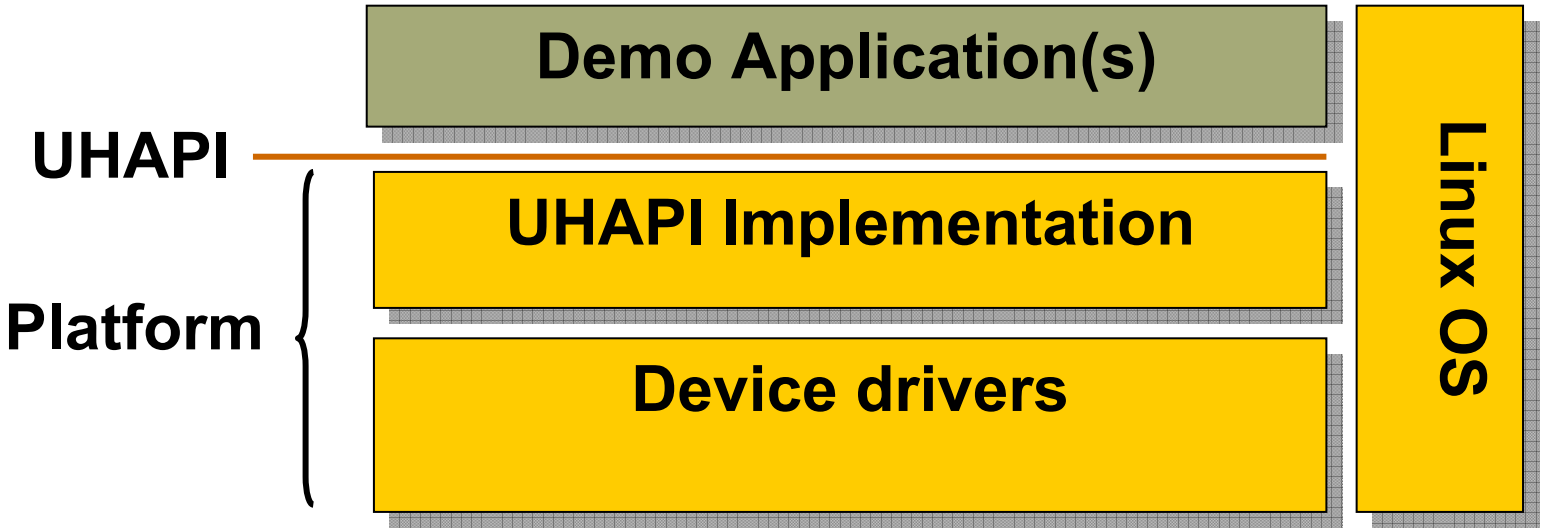
- LogicaCMG's financial software solutions enable the transfer of more than $5 trillion per day
- LogicaCMG's systems process two out of every three text messages sent in the world
- LogicaCMG has delivered one out of every four multimedia messaging centres installed by wireless service providers across the globe
- LogicaCMG's software supports a third of the world's satellites
- LogicaCMG's systems have been fundamental to the regulatory transformation of energy markets around the world
- LogicaCMG's HR outsourcing services process more than $100 billion of salaries globally each year
- LogicaCMG has around 2,000 SAP experts worldwide and is one of a small number of SAP Global Services Partners

Goal of the UHAPI4Linux project

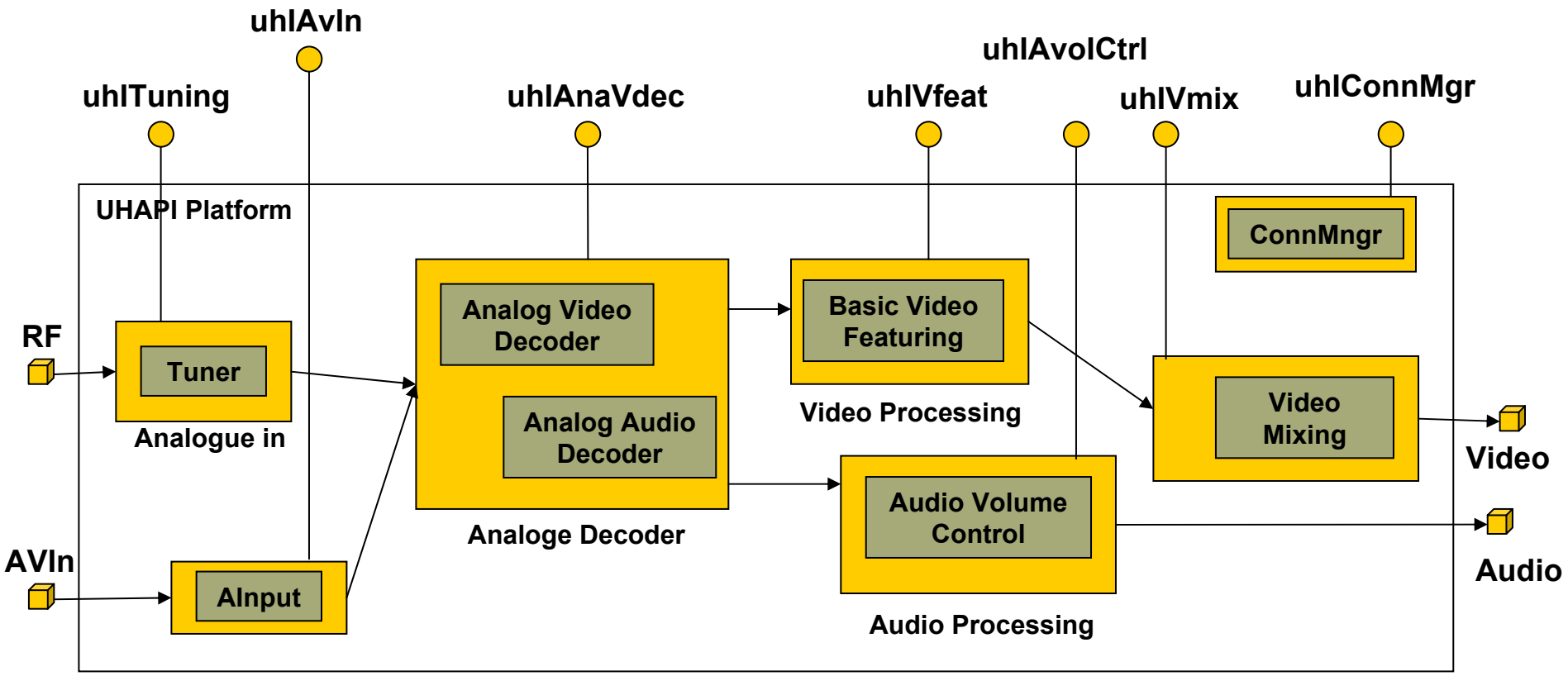
- Offer a common open Multimedia API for both PC and embedded
  - Contribute to the open source community an API that incorporates years of experience in digital/analogue A/V embedded products
  - Provide the environment, documentation and support for developing on UHAPI
  - Provide a basis to enhance and enrich the UHAPI Linux PC implementation ⇨Feel free to contribute!
- Provide development platform on PC for application software
  - Enable application developers to have a quick start with using UHAPI
- Can be a starting point for an embedded implementation

Work Break Down

- Two main areas of work
  - Platform that provides the UHAPI
  - Demo Application that provides complete system



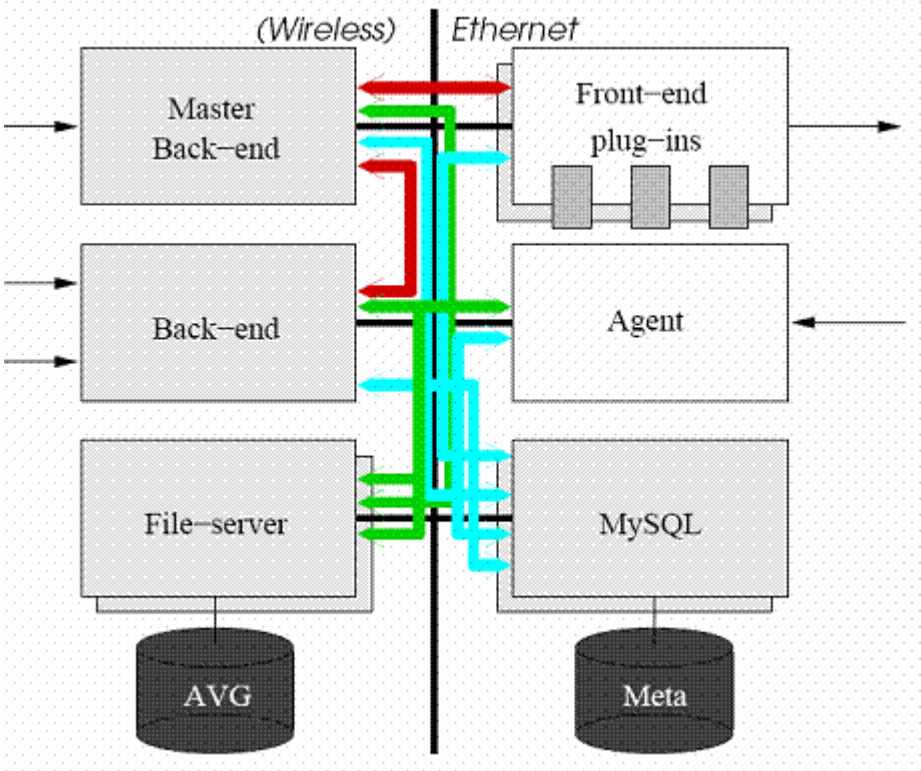
Work Break Down – UHAPI Platform



Step 1: Analoge video support

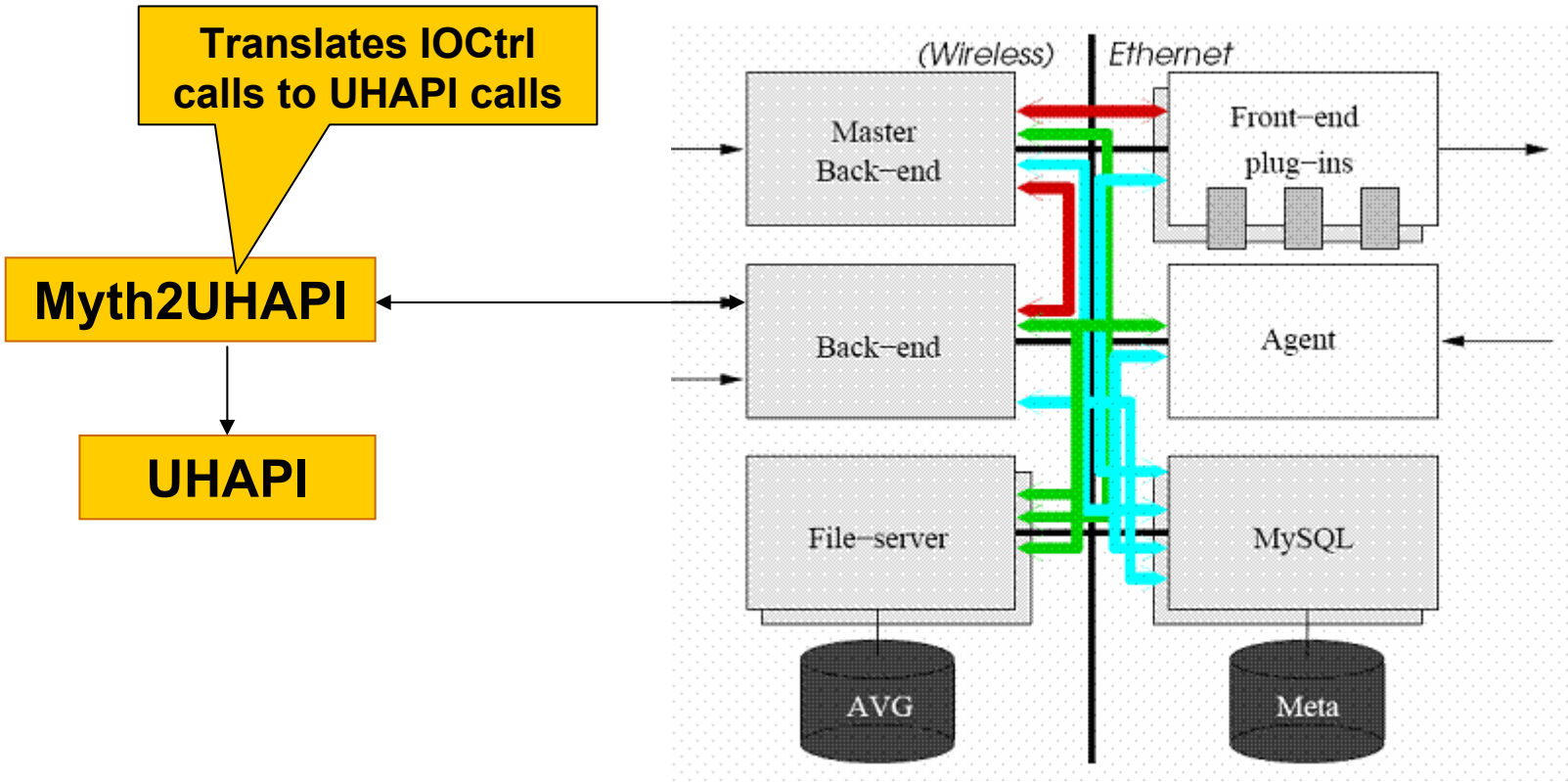
Work Break Down – Demo Application

- StreamDemo is provided for quick start and testing
- MythTV is chosen as the demo application
  - www.mythtv.org for background information
  - Rich set of features
  - Modular approach



Additions to MythTV

- Wrapper from Myth to UHAPI
  - Change as little as possible in MythTV



Universal Home API 1.0 contents

General documents (7) :

- API Specification Reader's Guide
- API Naming Conventions
- Error Handling
- Execution Architecture
- Notification
- Qualifiers Quick Reference
- API Evolution Rules

Type specifications (2) :

- Basic Types
- Global Types

API specifications (50) :

Front End Components (12)

- Analog Audio & Video Demodulation
- Analog AV Input
- Anti Aging
- Analog Audio Decoding
- Channel Decoding
- RF Amplification
- Out Of Band Tuning & Demodulation
- Signal Strength
- Tuning
- HdmiIn
- SPDIF-in
- VBI Slicing

Decoders/Encoders (5)

- ATSC Decoder
- Image Decoding
- SPDIF Decoding
- STC Decoding
- Transport Stream Demultiplexing

Video Processing Components (15)

- Ambient Level
- Analog Video Decoding
- Analog Video Encoding
- Analog Video Encryption
- Basic Video Featuring
- Black Bar Detection
- Color Transient Improvement
- Dynamic Noise Reduction
- Histogram Modification
- Noise Measurement
- Scan Rate Conversion
- Sharpness Enhancement
- Sharpness Measurement
- Video Color Enhancement
- Video Mixing

Audio Processing Components (10)

- Audio Automatic Volume Leveling
- Audio Bass Enhancements
- Audio Dynamic Range Control
- Audio Mixing
- Audio Noise Generation
- Audio Program Selection
- Audio Volume Control
- Equalizing
- Speaker Set /Headphones
- Output Configuration

Various (8)

- Analog AV Output
- SPDIF-out

- Connection Management
- Fatal Error Handling
- I am Alive
- Pin Objects
- Unknown
- URL Source

UHAPI 1.0 implementation roadmap

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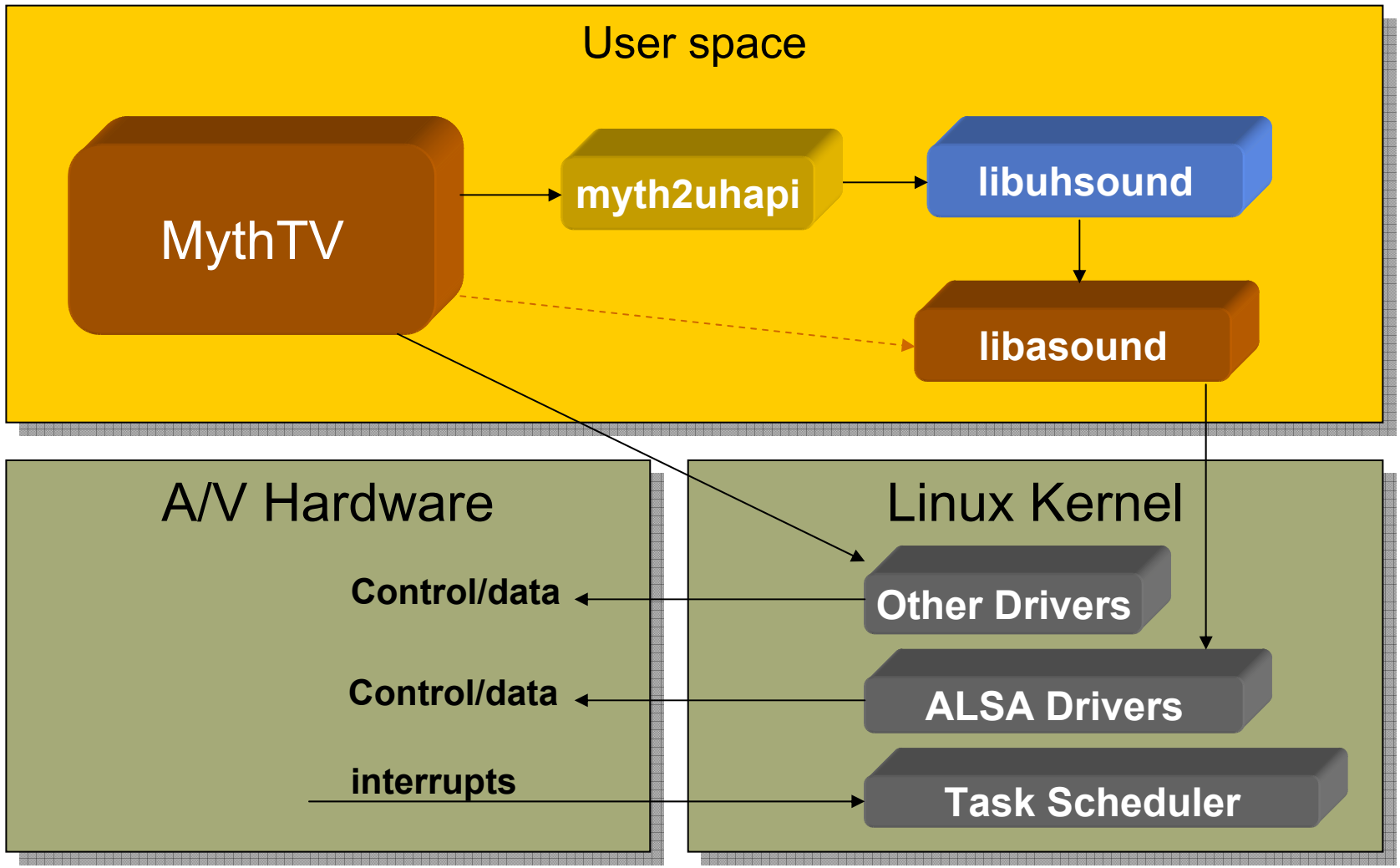
Which UHAPI Interfaces are implemented?

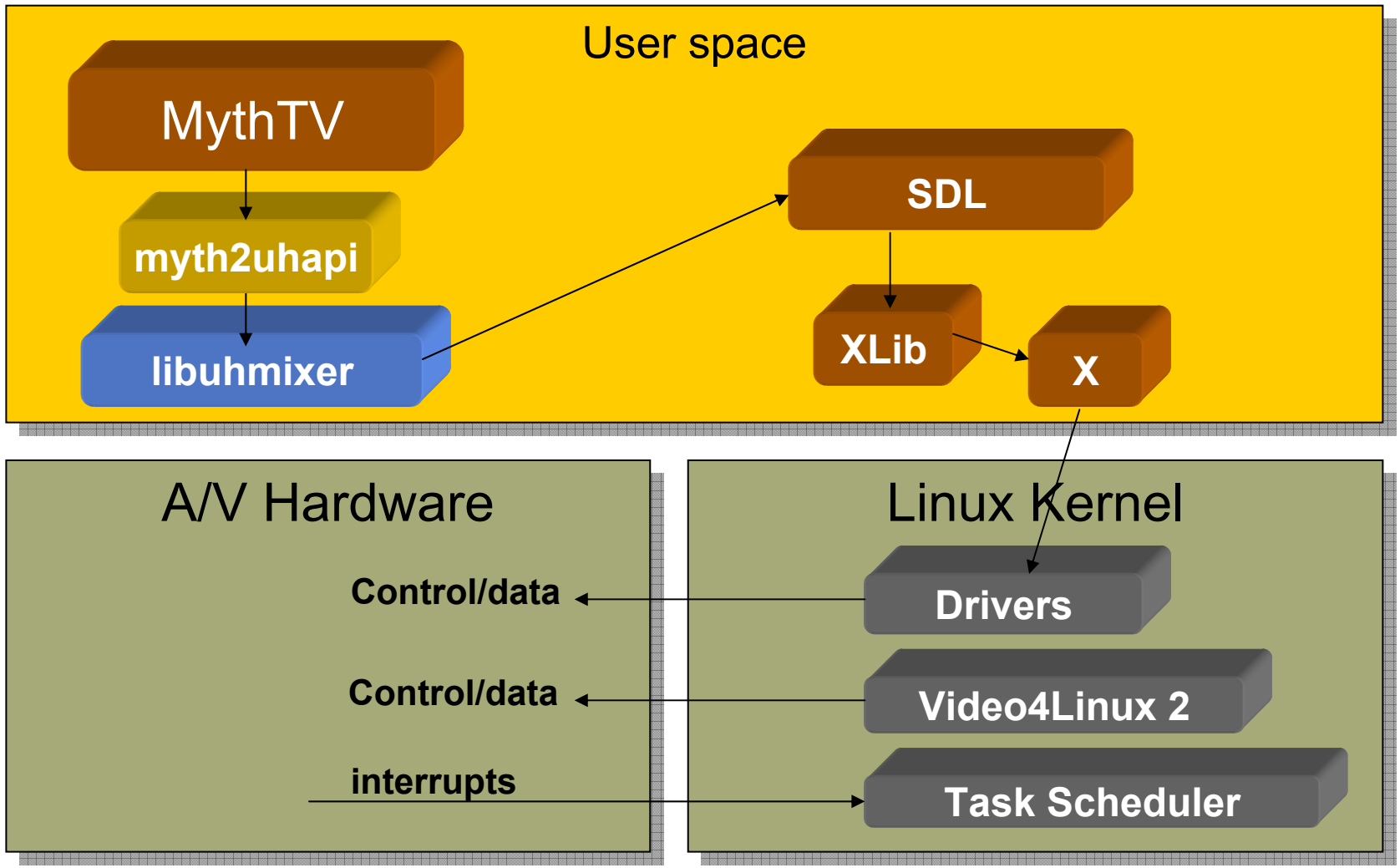
- Analogue Video Decoding
  - uhIAnaVdec
- Analogue AV Input
  - uhIAvIn
- Analogue Audio Volume Control
  - uhIAvolCtrl
- Connection Management
  - uhIConnMgr
- Image Decoding
  - uhIImageDec
- Tuning
  - uhITuning
- Basic Video Featuring
  - uhIVfeat
  - Brightness, Contrast, etc.
- Video Mixing
  - uhIVmix

Supported in the current implementation

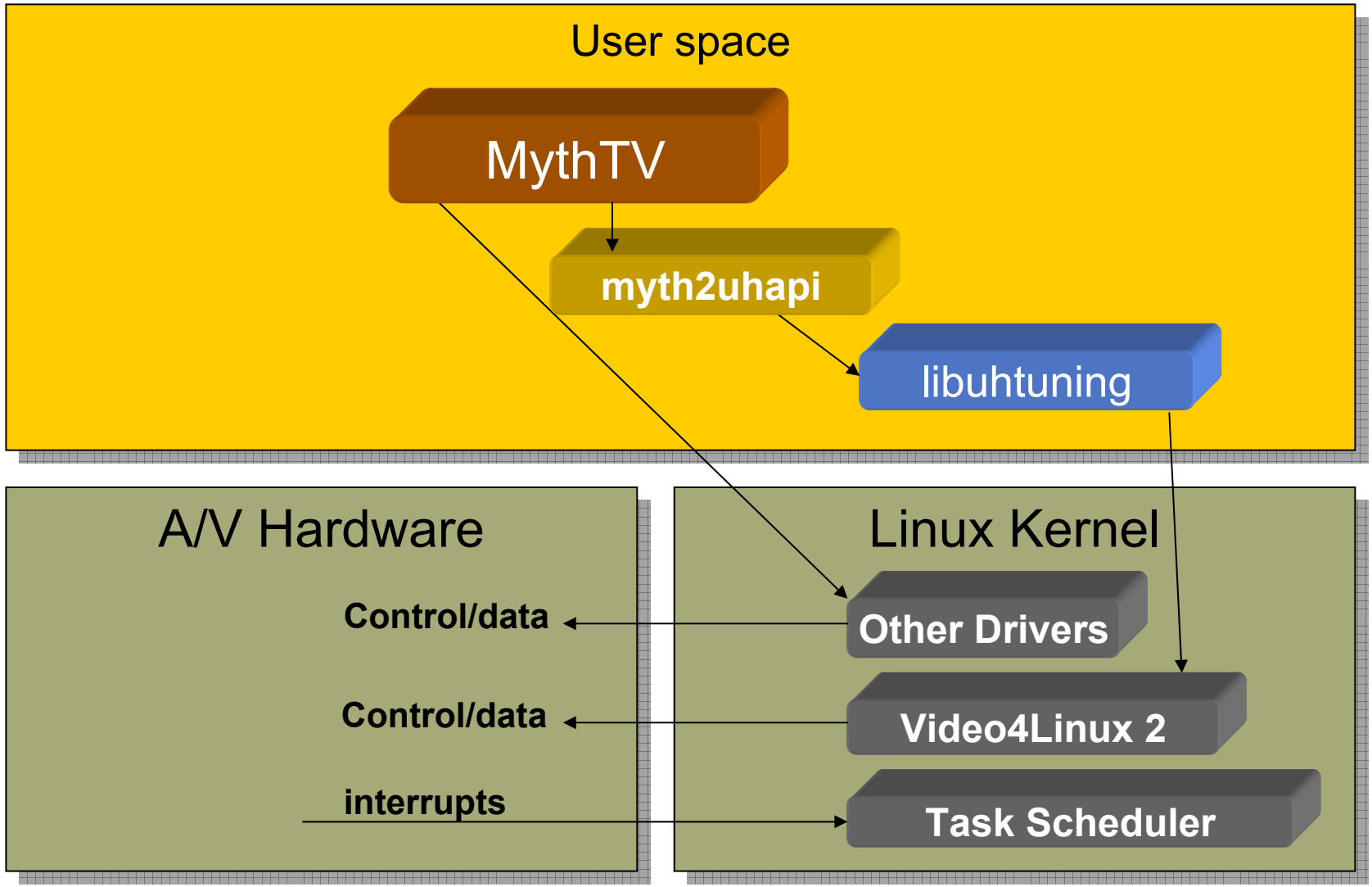
How does it fit into Linux?
Audio example



How does it fit into Linux?
Graphics example



How does it fit into Linux?
Tuning example



Status & Plans

- Enrich implementation with more interfaces from UHAPI Specification 1.0
  - Currently analogue audio/video
  - DVB support as next step
  - Roadmap is to be defined according to market needs
- Add with interfaces from next UHAPI Specification release
  - PVR functionality
- LogicaCMG will add specific functionality from our Unified Messaging solution uOne™
  - E.g. Voice mail, Video Services, uBiquitous messaging

How to get started?

- A standard PC with Hauppauge WinTV PCI-FM Tuner card (model 747)
  - Intel Pentium 4 – 2,8GHz, 533MHz FSB W/1MB Cache, 512MB (1 Dimm), 40GB (Serial ATA) 7200RPM, CD-RW/DVD Combo drive, integrated Intel Extreme Graphics 2
- Universal Home API Specification 1.0
  - www.uhapi.org
- Mandriva 2005 LE
  - www.mandriva.com
- MythTV 0.18.1
  - www.mythtv.org
- Extension to MythTV
  - Preperations for publication on SourceForge in progress
  - For questions, etc. mail to info.eindhoven@logicacmg.com
- Video4Linux 2
  - www.linuxtv.org
- UHAPI for Linux
  - Preperations for publication on SourceForge in progress
  - CELF Wiki pages www.celinuxforum.org/CelfPubWiki/AvgUhapiImpTaskForce

Demonstration

- Setup
  - Laptop providing the audio/video
  - Linux PC with external USB ATV Capture card

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