FeM C3 Streaming and Recording Setup Documentation

!!!! Under construction !!!!

Questions go to cccongress@fem.tu-ilmenau.de

Encoding Pipeline

Recording

- Recording using BlackMagic Decklink SDI cards, a capture tool and a ffmpeg chain
- Recording is done in fixed length segments for continous capturing (and not missing any lecture starts) without reaching file system limits

Marking

- custom FUSE file system providing virtual (no-copy) concat of segments
  - for RawDV: **fuse-vdv** (Code: http://subversion.fem.tu-ilmenau.de/repository/cccongress/trunk/tools/fuse-vdv/)
  - for MPEG-TS: **fuse-ts** (Code: http://subversion.fem.tu-ilmenau.de/repository/cccongress/trunk/tools/fuse-ts/)
- file system also provides **virtual kdenlive project file** for marking
  - on save, fuse-* parses new project file and extracts cut marks, remounts new concat file

Ticket Tracker

- Ticket tracker tracking the state of recording tickets (for each Fahrplan entry) and encoding tickets (for each format)
- PostgreSQL, PHP
- Code: http://git.fem.tu-ilmenau.de/?p=cccongress.git;a=summary

Encoding Cloud

- LiveCD image to boot multiple encoder instances
- Recording segments available via central storage box
- Encoding ticket processing with tracker connection (XML-RPC)
- Code: http://subversion.fem.tu-ilmenau.de/repository/cccongress/trunk/tools/job-control/

Streaming

Encoding

- each room one RTMP encoder
  - sdi card, capture tool, ffmpeg pipeline
  - multiple data sinks using enhanced tee → **supertee**
  - Code: http://hg.fem.tu-ilmenau.de/supertee/, http://subversion.fem.tu-ilmenau.de/repository/cccongress/trunk/tools/sdi-script/
- each room one WMV encoder
  - sdi card, windows media encoder 9
- each room one slide only encoder
  - sdi card, capture tool providing v4l2 device (video only), motion
  - Code: http://subversion.fem.tu-ilmenau.de/repository/cccongress/trunk/tools/bmd2v4l2/, http://www.lavrsen.dk/twiki/bin/view/Motion/WebHome
  - http://subversion.fem.tu-ilmenau.de/repository/cccongress/trunk/tools/slides-only-http-streaming/saal_encoder/slides , siehe REAME

Relay

- RTMP and HTTP Relay using Nginx
  - new RTMP relay module for nginx
  - Code: https://github.com/arut/nginx-rtmp-module
- WMV relay using Windows Server 200X with Media Services
- CDN Controll software and config files
  - http://subversion.fem.tu-ilmenau.de/websvn/wsvn/cccongress/trunk/tools/fem-cdn-mm/

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