Kodi Playback with Standard V4L2 Graphics Stack

Neil Armstrong & Koen Kooi

What is demonstrated

Hardware Information
- Geniatech DB4 based tablet
- Qualcomm® Snapdragon™ 410 series processor
- 1080p@30fps HD H.264, 720p H.265
- LibreComputer AML-S905X-CC
- Amlogic S905X SoC, up to 4k30 H.264, 4k60 H.265

What was improved

Full upstream implementation of:
- Hardware Accelerated Video Decoding (Mainly H.264) with the generic V4L2 Mem2Mem API
- Zero-copy rendering with DRM Atomic kernel Drivers
- DMA-BUF transferred from V4L2 to DRM
- FFmpeg V4L2 Mem2Mem integration with Kodi
- Kodi GBM Display for Atomic Direct to Plane rendering

Software Status:
- Current Kodi master
- FFmpeg v3.3.2 + Off-Tree patch for DMABUF
- Linux 4.18 + WiP patches for Amlogic (Video Decoder, DRM Overlay Plane, Audio Card)
- Wrapped up into LibreELEC distribution

Source code or detail technical information availability

Source Code:
- kernel.org
- https://github.com/xbmc/xbmc
- https://github.com/LibreELEC/LibreELEC.tv
- https://github.com/chewitt/LibreELEC.tv/tree/amlogic