



BUSINESS CASE STUDY

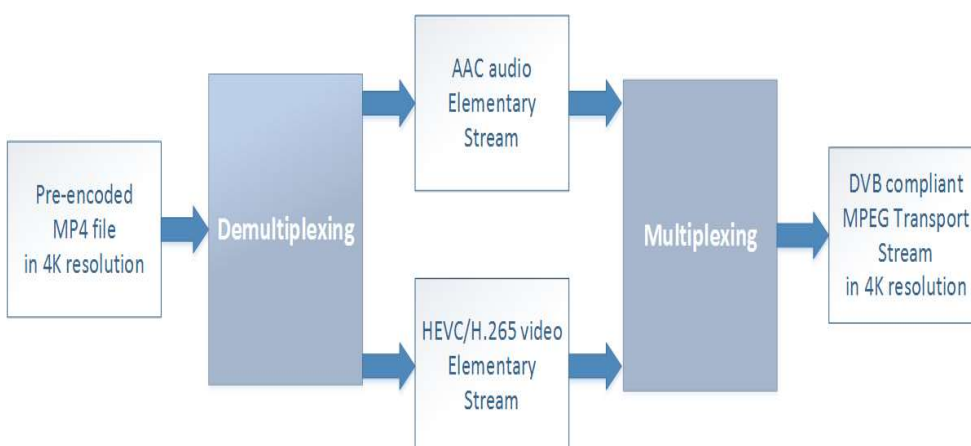
HEVC 4K Multiplex Automation for Pre-encoded MP4 files

A TV broadcasting company came up with the "crazy" idea of performing HEVC 4K broadcasting. So they started to research the possibilities and to look for a proper software solution to handle the necessary work.

HEVC 4K Broadcasting Requirements

The company have already got files with AAC audio and HEVC video encoding in 4K resolution, packaged in MP4 container. They have been planning to distribute this via DVB-T network. This meant they needed MPEG Transport Stream DVB compliant source. No transcoding was going to be performed, only proper packaging.

The company decided to go with a software-defined solution. The required solution should have been capable of processing MP4 files and creating UDP MPEG TS output without any transcoding - just to passthrough both streams (audio and video) and then mux them properly together.



MAJOR CHALLENGES:

- Broadcasting 4K content with minor adjustment of the existing workflow infrastructure.
- Remultiplexing the MP4 files into DVB compliant transport stream.
- Proper demultiplexing of already pre-encoded MP4 files in 4K resolution into Elementary Streams.
- Smooth remultiplexing of AAC audio and HEVC video files in 4K resolution into MPEG Transport Stream.
- Complete automation of demultiplexing and multiplexing processes in order to produce DVB compliant MPEG streams.
- Software-defined solution suitable for cloud installations.



HEVC 4K Broadcasting Solution

So the research brought the customer to our Media Muxer. The solution offers the desired functionality - remultiplexing of the MP4 files to DVB compliant transport streams that are ready for streaming.

The major challenge in this business case was joining the pre-encoded files smoothly. There might have been various problems due to the different bitrates of the streams, HEVC stream settings, gop structures and more. All of these could result in DVB receiver issues.

Another challenge was the automation of the processing of the input files. When files appeared in the watch folder the solution should automatically start demultiplexing them to audio and video files, then multiplexing both and creating single MPEG-2 TS file. Automatic deletion of elementary streams after successful demultiplex/multiplex and creation of log files was also required.

About Media Muxer:

Media Muxer is a powerful tool for file-based digital media multiplexing and demultiplexing.

The solution can be used for multiplexing of audio and video elementary stream files as well as for demultiplexing media files to audio, video, subtitle, teletext, user-data and other binary elementary stream files. The **Media Muxer** solution supports MPEG, MP4 and MXF as well as some of the most popular sub-format variations of these media formats for multiplexing and demultiplexing.

Our **Media Muxer** offers demultiplexing from MPEG, MP4, MXF and AVI file containers to elementary stream files. After loading of media file for demultiplexing it is possible to select only the required streams for demultiplexing. Both multiplexing and demultiplexing processing is performed faster than real-time.

More about our **Media Muxer** solution can be found on:
<http://www.jongbel.com/manual-analysis/media-muxer/>

ACHIEVED RESULTS:

- ✓ Fully automated MP4 de-multiplexing process, which extracts the AAC audio and HEVC/H.265 video elementary streams.
- ✓ Fully automated MPEG Transport Stream multiplexing process, which multiplexes AAC audio and HEVC/H.265 video into DVB compliant MPEG Transport Stream.
- ✓ Faster than real-time remultiplexing.
- ✓ PMT, Video, Audio and PCR PID configuration.
- ✓ Confirmation log generation of the processed files.

JONGATE

a JONGBEL MEDIA SOLUTIONS brand

E-Mail:

General inquiries: info@jongate.com

Support: support@jongate.com

Sales: sales@jongate.com

Phone:

+359 2 4444 700

+359 887 203 611

+359 886 133 803

Address:

11 Edison Str., 1111 Sofia, Bulgaria

Web:

www.jongate.com