Subtitle transcoding and playout

High-quality Cavena subtitling for broadcast and OTT TV delivery.

Agile subtitle transcoding and file-based playout provides high-quality subtitling for broadcast and OTT TV delivery to any client, on any screen size, and in any language, including Asian character sets.

Subtitle transcoding

Subtitle data is retrieved from an SDI signal or a transport stream (TS), and transcoded on the fly to one or more transmission formats depending on the distribution technology and local standards, e.g. terrestrial, DTH broadcast or OTT delivery.

DVB Teletext (EBU Teletext in a transport stream) is the standard input for many OTT platforms and can be converted to a range of formats and adjusted for multiple screen sizes and devices.

Transcoding image-based DVB subtitling to text-based DVB Teletext requires OCR transcoding, which is a capability of the Cavena Subtitle Transmission Unit (STU) and Agile Streambuilder. Using OCR engines in parallel with dynamic image processing, the image to text conversion including an accurate time code is done within frames.

DVB Teletext does not natively support Asian character sets, but thanks to the Cavena P31 format, Agile Content's subtitle transcoding supports a wide range of Asian languages in DVB Teletext.

File-based playout

File-based playout of subtitles requires a stored subtitle file with text and timecode, uploaded to a broadcast center and played out in alignment with the timecode of the video file.

Agile Content's file-based play-out insertion uses the Cavena Subtitle Transmission Unit (STU) to ensure accurate insertion of subtitles with the correct language, format, timing, and positioning into the broadcast feed. Integration with automation play-out systems guarantees the files are scheduled and played according to playlists.

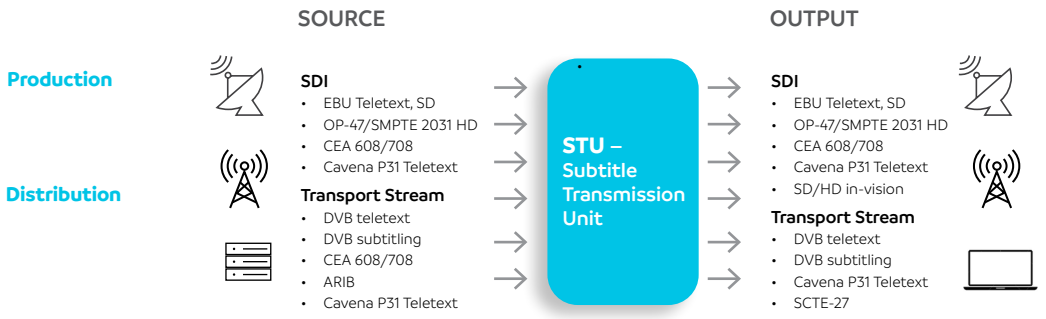
The STU can play out subtitles in one or more formats in parallel, such as DVB Bitmap and Teletext. Thanks to the STU's ability to support different timing for different output ports, each output is frame-accurate.

Playout is controlled by station Automation, and the Cavena system is integrated to most well-known manufacturers.

Features & benefits

- 30+ years of experience and integration.
- Subtitle file-based playout in broadcast environments, controllable by most automation systems.
- Integration of live subtitle input, including recording and time gain functions.
- Specialized text renderer for good-looking subtitles.
- Transcoding of any supported input format to any output format.
- Conversion of image-based formats to any text-based format using OCR, supporting 100+ languages including Asian languages.
- Multiple redundancy options for high availability.
- Enables subtitles for any ABR format (HLS, MPEG-DASH, MSS) for multiscreen OTT delivery.
- As part of Agile Processing, it facilitates quick and easy addition of high-quality subtitling to your TV services.

Subtitle transcoding



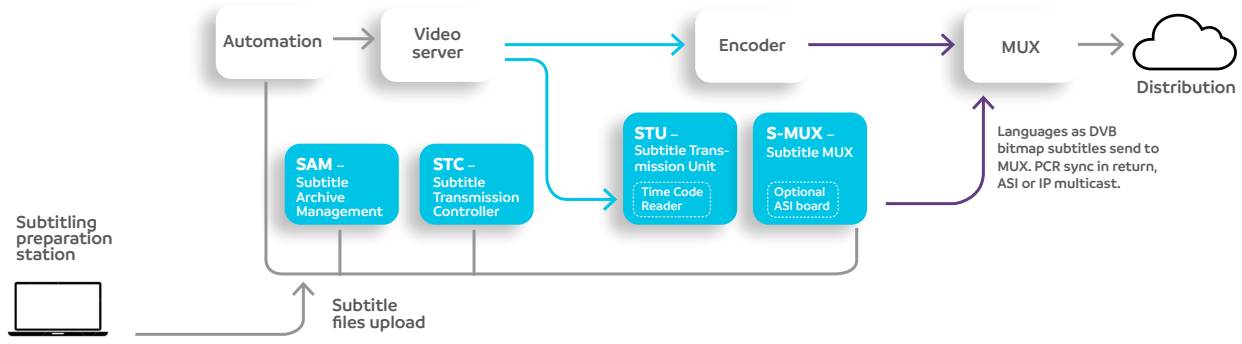
What it does

- Transcodes subtitle data on the fly from one format to another.
- Automated transcoding from image-based to text-based subtitling using OCR technology to prepare subtitles for multiscreen OTT delivery.
- Supports a wide range of SDI and TS input and output formats, see image above.
- Natively supports a wide range of Asian languages thanks to the Cavena P31 format.

How it works

1. The subtitles are retrieved from an SDI input or from a Transport Stream (TS) in various formats, see image above.
2. The subtitles are transcoded to the output format requested using the Subtitle Transmission Unit (STU)
3. Input and output formats are independent of each other

File-based playout



What it does

- Aligns the timecode of the subtitle with the timecode of the video (frame accurate IN and OUT time).
- Retrieves the video timecode from the SDI signal, SD or HD, or over IP
- Sends aligned subtitles in the formats required, such as DVB, Invision/burned-in, etc.
- Adds timecode to live subtitles when coming into the Subtitle Transmission Unit (STU), and the subtitles are then stored with timecode and ready for later re-runs.

How it works

1. Subtitle files stored in the Cavena-based Subtitle Archive Manager (SAM) are retrieved by the Subtitle Transmission Controller (STC) upon command from the broadcaster's automation system, often days in advance.
2. The subtitle files are sent to the Subtitle Transmission Unit (STU).
3. The STU is capable of playing out multiple language files per event in one or several formats, e.g. DVB Subtitling, burned in video or inserting EBU teletext in VBI or as OP-47 or SMPTE-2032 in VANC in HD.

Technical specifications

INPUT FORMATS
SDI
EBU Teletext, SD
OP-47/SMPTE 2031, HD
CEA 608/708
Cavena P31 Teletext
Transport stream
DVB Teletext (ETSI 300 472)
DVB Subtitling (ETSI 300 743)
EIA 608/708
ARIB
Cavena P31 Teletext

OUTPUT FORMATS
SDI
EBU Teletext, SD
OP-47/SMPTE 2031, HD
CEA 608/708
Cavena P31 Teletext
SD/HD In-vision
Transport stream
DVB Teletext (ETSI 300 472)
DVB Subtitling (ETSI 300 743)
SCTE-27
Cavena P31 Teletext