

# CAPture - Subtitle Decoding and Storage

Broadcasters and subtitling facilities sometimes need to capture on-air subtitles to a file for subsequent re-use. This may be particularly useful for live programmes with real-time subtitles, allowing the text of the transmitted subtitle stream to be decoded complete with the essential timing.

SysMedia offers three solutions for this:

- **Teletext Subtitle Data Capture Unit (SDC-VBI)**

A complete 1U rack mount unit that decodes one or more pages of teletext subtitles from a composite video feed and stores all the text, position, colour data with associated timing (from a separate timecode feed or internal clock) to create an EBU-STL subtitle file (one per page).

*Line 21 Closed Caption version is also planned for future development.*



- **DVB Subtitle Data Capture Unit (SDC-DVB)**

A complete 1U rack mount unit that uses OCR to decode one or more streams of DVB bitmap subtitles from a DVB-ASI feed (BNC or GigE) and stores all the text, position, colour data with associated timing (from a separate timecode feed or internal clock) to create an EBU-STL subtitle file (one per stream). *due for release in 2009*

- **Network Protocol Teletext Subtitle Data Capture Software (SDC-IP)**

Software to capture teletext subtitles en-route to the inserter, from a suitable TCP/IP network subtitling protocol (based on Newfor or SysMedia SDO6). Stores all the text, position, colour data with associated timing (from a separate timecode feed or internal clock) to create an EBU-STL subtitle file (one per page). Can be supplied with an Adrienne timecode reader PCI card or USB device.

- **AVOID RE-WORKING – re-use live subtitles on repeats and delayed transmissions**

- **IMPROVE QUALITY – quickly correct text and adjust timing if desired**

- **SAVE TIME – use edited live subtitles for recorded segments**

These packages can be easily fitted into any existing subtitling operation without the need to change existing subtitle authoring or transmission processes. The resulting STL subtitle files retain the textual, colour, positioning and timing characteristics of the original teletext input.

Any subtitle preparation software, such as SysMedia's WinCAPS can be used to make any amendments to the STL file that may be needed (e.g. error corrections, timing adjustments, edited programme repeats).

The STL file can then be loaded into any suitable subtitle playout system (such as ProSTAR) or used as a prepared/recorded segment within a live programme subtitled (timed or un-timed) by WinCAPS.

For all these products the STL file is saved with read/write shared access, allowing other software to make use of the incomplete file before the programme in question has finished.

Scrolled subtitles are buffered to compile a one or two row block equivalent as well as in the original word-by-word form. The resultant block STL file removes the repeat content inherent in teletext scroll subtitles and is therefore far easier to work with if any subsequent editing is necessary

For instance: "Good evening, here is the news." is transmitted (and stored in the scroll STL file) as:

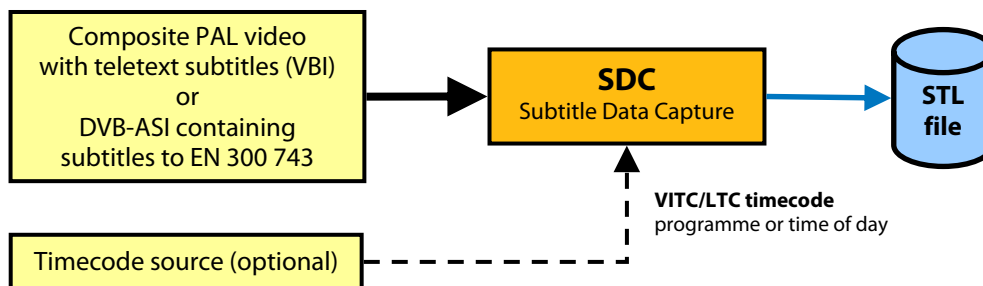
```
Good
Good evening,
Good evening, here
Good evening, here is
Good evening, here is the
Good evening, here is the news.
```

This is stored in the block STL file as:

```
Good evening, here is the news.
```

The timing for this block version is based on the start of each scrolled row so that when replayed in block mode there is only a minimum delay – more comparable to normal practice for a recorded programme.

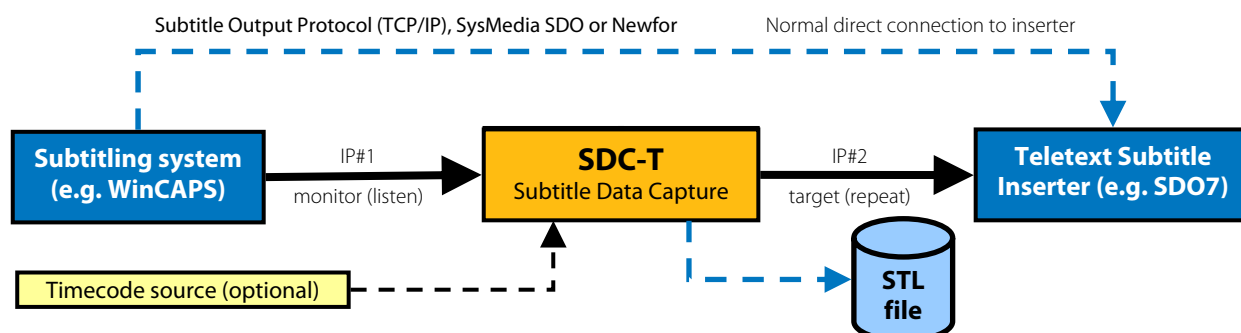
## Block Diagram (SDC-VBI and SDC-DVB Subtitle Data Capture units)



## Technical Specifications

Configuration, control and monitoring	Separate client utility (can be used on any Windows PC connected to the unit via IP as well as on the unit itself) to set file name and path; control start/duration/stop and programmable timers for automatic operation by schedule (daily, weekly, weekdays, weekends); remote start/stop control from automation system GPI trigger via serial port (with automatic file naming by start date/time: yymmddhhmmss.stl).
Input (SDC-VBI)	Composite analogue PAL/SECAM, 1 V pk-pk into 75 ohms +3 dB / -6 dB World System Teletext, 625 line, ETS 300706, CCIR Teletext System B, level 1 or 1.5 Maximum 33 data lines in VBI range 7 to 22 & 319-335, serial or parallel transmission User configurable page number, block mode or scroll mode
Input (SDC- DVB only)	DVB ASI via BNC or Gigabit TS-over-IP
File output	STL subtitle file to EBU Tech 3264-E Exchange File Format
Timecode input	Standard: time-of-day timecode or zero from start of event (generated using internal PC clock) Option: VITC or LTC (via timecode reader card)
Power supply	100-264 VAC, 50-60Hz Option: dual (redundant ) hot-swappable PSU (2U model only)
Temperature range	Operating 0–40°C / Storage -20–60°C
PC specification (minimum)	Windows XP, Pentium 4 2.4 GHz processor, 1GB RAM, 80GB HDD, DVD/RW, 10/100 or Gigabit NIC, 2 x USB 1.1 (via front panel), 1 x PS2 with keyboard/mouse splitter (via front panel or rear)
Size	Standard: 1U: 482 x 44 x 500mm (packed: 66 x 61 x 18 cm, approx weight 11 kg) Option: 2U: 482 x 88 x 450mm (packed: 62 x 58 x 21cm, approx weight 16 kg)

## Block Diagram (SDC-IP Network Protocol Teletext Subtitle Capture Software)



SysMedia's network protocol teletext subtitle capture software (SDC-IP) monitors an IP connection between the subtitle transmission software and the teletext inserter. It is suitable for IP protocols based on simple Newfor or SysMedia SD06 and cannot be used on systems that connect through a serial cable. It does not require a connection to the video itself. The subtitling system needs to direct its output at the IP address of the PC running SDC-IP (a Windows software utility). SDC-IP immediately relays any incoming subtitling stream to the target IP address for the real inserter. At the same time it captures the subtitle data from the stream and stores it in a standard EBU STL file with timecode. This software is intended for occasional use only, so the subtitle transmission software should ideally allow the user to choose whether to connect via the IP address of the SDC-IP host or direct to the actual inserter.