



## Subtitling and Closed Captioning

Subtitling has been used in Television broadcasts since the 1930's. It is typically employed in one of two different forms:

Open Subtitles - which are sometimes referred to as 'burnt-in' or 'in-vision' subtitles and are generally encoded as a permanent part of the video image.

Closed Captions – this is a generic term for subtitles that are viewer-selectable and is typically used for subtitles that are decoded and displayed as text by the TV receiver e.g. Teletext subtitles in Europe, Line 21 closed captioning system in the USA, or DVB closed captions.

The use of the terms subtitling and captioning varies in different parts of the world. 'Subtitling' is often used to describe the technique of using open captions for language translation of foreign programmes, whilst the term 'Captioning' is typically used for same language transcription for closed captions provided for the hearing impaired - consequently closed captions include descriptions for relevant noises and background sounds.

Starfish engineers have a long history of working with subtitling technology, and when Starfish was formed in 2000, subtitling became one of its core competencies. A range of products have been developed through collaboration with customers, and today Starfish offers some unique solutions to subtitle processing requirements.



### Subtitle File QC

The Isis Subtitle File QC Service automatically processes industry standard file formats including EBU .stl, and .pac files. System configuration is flexible and there are options available that include auto correction of common file problems.

The product runs as a Windows service and will automatically process any subtitle or caption file that appear in the 'Source' watchfolder. Files are then moved to either a 'Pass' or 'Fail' folder and a failure report created in a Text, HTML or XML format.

Multiple folder sets can be configured to process different file types, or files from different sources.

## Subtitle File Compare

This service was developed for applications where multiple language subtitles files are all to be associated with a single media file. It compares a number of attributes about each file in the compare set and looks for correlation.

It runs as an automated service and produces a Pass or Fail result, with an associated failure report and a graphic representation of the file comparison for rapid human interpretation.

## Subtitle Routing

The TransCast subtitle exchange system routes RS232 or IP signals in a subtitle routing application. It features flexible configuration of an unrestricted number of inputs and outputs and also supports real-time monitoring and capturing of subtitles.

The software can also control an external Video/Audio router to simplify operations in a complete media routing system.

## Transport stream subtitle processing

Compositor TS enables industry standard subtitle files to be embedded within an encoded media transport stream. Applications include adding closed captions to media files used for VOD.

TransCast DVB Live is a real-time system that extracts Teletext subtitles from an SDI input video source and provides a DVB subtitle stream output, via UDP or ASI.

## Live VBI subtitle decoding and burn-in

The EnVision Live system decodes VBI closed caption information present on the SDI video input signal and converts this, in real-time, to burnt-in subtitles on the SDI video output.

The system is particularly useful for low cost regionalisation of TV channels.

