



# Live Subtitling

## Introduction

There is an increasing requirement to provide subtitles for live or near live events such as news, sport and special events. This presents a very different challenge to the subtitler and broadcaster compared to pre-prepared subtitles for film and drama. With a critical shortage of time to prepare in advance, it is vital that a range of tools is available to meet the needs of broadcaster and subtitler. There are several factors that will affect the choice of live subtitle required including:

- Is the broadcast genuinely live or is there a short time to prepare some text?
- Is there any script available in advance?
- Is a teleprompter being used?
- Are there stenographic typists available?
- How long are the live broadcasts?
- Will the live broadcast be recorded and rebroadcast at a later time?
- Will any re-broadcast be the same or will it be edited before rebroadcast?
- Is the live subtitling an occasional requirement or will it be used full time?

## Scope

Live subtitling can be divided into a number of areas and workflows:

- Live cueing to air of pre-prepared text
- Simple live typing to air
- Repurposing of other text sources
- Voice recognition
- Multi user live subtitling
- Repurposing of previous live output
- Newsroom systems



## **Details**

### **Live cueing to air of pre-prepared text or Manual Cueing.**

Where the script for a live event is available in advance, preparing the subtitles ahead of time and manually cueing them to air is an economical and viable solution. This would be done on a Poliscript system, and the user would step through the pre-prepared subtitles as they are spoken. This is very common in translated news environments, and often for live events such as awards shows, sporting events, speeches, or musical performances etc, where the script is available hours before the show but the timing is variable.

Equipment required:

- One or more subtitle preparation workstations such as Poliscript.
- Subtitle transmission system such as Polistream with a network link to the preparation stations.

Staffing required:

- At least 2 subtitlers working for any particular programme, each can cue for only 20-30 minutes at a time, as after this their accuracy declines through fatigue.

### **Simple live typing to air**

At its simplest live subtitling can consist of a single typist keying text that appears directly on air as subtitles. Display of subtitles can be by subtitle, line or word. Word by word is the most common format for live typed subtitles. This style is suitable where only short items need to be subtitled and secondary checking is not required.

Typing can be on a standard keyboard or a stenographic or velotype style keyboard. While a good typist can achieve reasonable rates on a standard keyboard a trained stenographer will be significantly faster.

Aids such as short form dictionaries can aid typing speeds by replacing shortcut codes with the full text, for example replacing BG with "Bill Gates". Shortform dictionaries need to be prepared in advance and maintained for different subject areas.

Equipment required:

- One live typing workstation such as Poliscript Live!
- Subtitle transmission system such as Polistream with a network link to the preparation stations.



Staffing required:

- A fast typist or stenographer. Some countries have no culture of using

stenographers for court reporting so trained stenographers may not be available. Where they are they tend to command high rates.

### **Repurposing of other text sources**

There are often sources of text that are associated with a production that can be repurposed. During standard off line subtitle preparation it is common to have access to a script. In a live situation this is by definition not available but other sources often are. Such sources include teleprompters and other newsroom information.

As a teleprompter contains an accurate script of at least part of a news bulletin then this can be used as one possible source of text. By using a common interface between the teleprompter and the subtitling system it is possible to reformat the teleprompter text into a form and layout suitable for display as subtitles.

### **Voice recognition**

Voice recognition technology has advanced to the stage where it is now regularly used in live subtitling situations. The best results are obtained by using a re-speaker, this is a person who has been trained to use the voice recognition system and who 're-speaks' what is said by a presenter or commentator. In addition a pre-prepared dictionary is used to cover specialist words or place names that are expected to be used in the production.

While accuracy rates of 90% or more are achievable with voice recognition it is normally necessary to use a verification stage as well. (See the Multi user live subtitling section below).

### **Multi user live subtitling**

Similar in principal to simple live typing but multi user systems are suitable for more complex and longer productions. A mix of input types can be combined with one or more correction and verification stages. This results in a higher quality output with fewer typing errors but at the expense of some time delay.

In some cases it is possible to type subtitles from an audio feed that is in advance of coding and transmission delays so reducing the delay between speech and text as seen by the viewer.



Multiple subtitle input devices can be combined for a production and the task divided up in several ways. Operators may be assigned to a specific speaker or for a short timeslot. The subtitle sources may consist of typists, stenographers or voice recognition systems.

The multiple subtitle sources can be routed to one or more verification stages where an operator sees the incoming text and has a short time to make corrections before the text is released to air.

With multiple sources and correction stages all linked via a computer network it is possible to design flexible systems for each production and then reconfigure instantly for a different application.

Equipment required:

- Multiple software linked preparation and verification workstations linked via a network such as Sysmedia's WinCaps or Ninsight's ProTitle Live with optional voice recognition.
- Subtitle transmission system such as Polistream with a network link to the preparation stations.

Staffing required:

- A complex live subtitling system will require a range of trained staff for both input and verification depending on the production.

### **Repurposing of previous live output**

It is common for a production that is initially transmitted live to be recorded and reused at a later time possibly with modifications.

This reuse presents an additional opportunity and challenge to the subtitler. By capturing the original live subtitles in a format suitable for subtitle editing it is possible to fix any typing errors and remove the inherent presentation delays. Once this is done the standard subtitle file can be used as for any other pre-recorded show.

However if the production is edited then the subtitles will need to be changed to match the edits. This requires a much more complex workflow going from original, through video editing then to subtitling with the revised video. This process can be shortened by using a video editing system that can support the subtitle file directly. This will display the subtitles in the video editing workstation and allow for subtitle editing at the same time as the video.



#### Equipment required:

- An NLE and MediaTrans are used to automatically synchronize the video edits to the subtitle file. By working in parallel the video editor and the subtitler can produce both the revised video and matching subtitle file in a single operation.

#### Staffing required:

- Craft editor and subtitler..

### **Newsroom systems**

Modern newsrooms are a complex and fast moving environment. In the past, some broadcasters would have a dedicated news subtitling team working along side the journalists. The subtitlers would prepare short subtitle files to match the news stories if there was time or use one of the live techniques listed above.

However there is an increasing move to have the journalists produce the subtitles at the same time as they edit the news story. This requires a simple, flexible tool that will work alongside the newsroom editing system. Video clips need to be opened automatically and file names created to match story IDs. All of this needs to be part of the journalist's news desk system.

Used in conjunction with some of the other techniques listed above it is possible to reduce the cost of news subtitling and the time to air while still meeting the subtitling requirements.

#### Equipment required:

- Newsroom enabled subtitle preparation software and integration with newsroom software.

#### Staffing required:

- Subtitle training for journalists.