

Using Spinnaker to Generate Captions

Closed and Open Captions in a Live Streaming Environment

Problem

Many live events are being broadcast over the Internet and need to reach the broadest audiences possible. These events need various types of captioning, such as open captions or closed captions. Some broadcasts even require captions for legal reasons. Public hearings or court appearances may require open captions for record keeping purposes. Electoral debates and town hall meetings may need to include them to assist the hearing impaired.

Broadcasters of concerts and sporting events may wish to offer it for venues where audio is intentionally muted, such as bars and restaurants. In such cases, new media companies that stream content over the Internet need the same captioning features as traditional over-the-air broadcasters. Without the ability to provide captioning, Internet delivery of live events becomes less attractive, or in some cases, cannot meet legal requirements.

Solution

Live Internet video streaming and IPTV broadcasts can meet captioning demands by using Inlet Technologies' professional streaming solutions. Inlet's Spinnaker family is a complete line of live streaming appliances that enables operators to stream content over an IP network and incorporate live captions - all easily controlled through an intuitive web interface. Spinnaker allows operators to take existing captioning data already embedded in the existing broadcast feed and add it to their streamed IP-based video. And it's easy - with only 3-4 mouse clicks, you've enabled your captioning.

Advantages of Advanced Profile

Spinnaker fully supports captioning with VC-1 Advanced Profile. Spinnaker lets you maintain full metadata, even while skipping frames. If motion in the scene is too complex, the Spinnaker can automatically skip a frame to maintain bandwidth requirements, while still adding a placeholder containing all the captioning data. Less advanced encoding systems will lose the entire frame including all the captioned data.

How captioning works

Where do the captions come from?

Spinnaker derives existing captioning data from the video source, and requires no external hardware or applications. Specifically, it reads captioning information from Line 21 of a broadcast. A unique feature to Spinnaker is that it can fully derive Open, Closed, 608, 708, and SAMI captions from this information and requires no more than 3 clicks in the Web GUI to implement.

How do captions reach the TV?

Closed captions are embedded as metadata with the video stream, requiring no additional network setup or streams. This embedded metadata is then decoded by a set top box in IPTV architectures.

How do captions reach the PC?

Spinnaker uses SAMI, a format specifically developed to display video-based texts on PC screens.

Types of Captioning

Captioning comes in various forms:

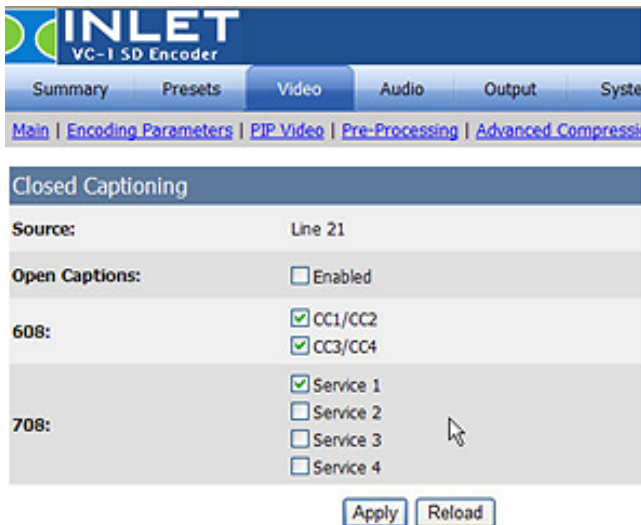
Open captions - The captions are overlaid onto the video itself, replacing a small portion of the screen. This is used when operators need to ensure the data cannot be removed or altered.

Closed Captions - Typically used for situations where video only is available for viewers. These captions can be switched on/off at the television or PC.

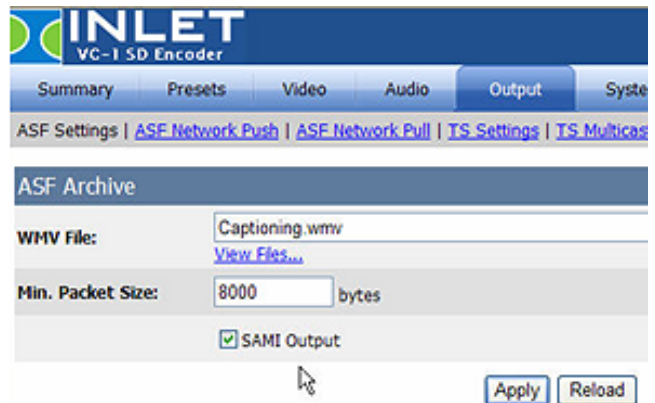
- **608** - Captioning originally designed for analog broadcasts. Available in CC1/CC2 and CC3/CC4 pairs, these are used for primary and secondary language channels.
- **708** - Captioning for digital programming. It has features such as character set for foreign languages, and transparent letter backing.

Setting up Spinnaker to support captioning

For IPTV delivery. To enable Open, Closed, 608, and 708 captions in Spinnaker for IPTV delivery, simply check the 608 CC1/CC2, the CC3/CC4, and the 708 Service 1 options in the Captioning Menu, and click "Apply".



Streaming to a PC. To enable SAMI (web) captions in Spinnaker for use with Internet streaming, select "SAMI" in the Output, ASF Settings tab.



Results

After just a few quick clicks, any type of captioning on Spinnaker can be setup and ready to go. Real-time, fully-enabled captioning extends your media reach, and enables you to repurpose your content to reach multiple audiences on a variety of screens.



Spinnaker is a highly reliable, robust solution, with unique capabilities for new media distributed over IP to any screen. Spinnaker enables you to meet regulatory requirements and deliver content to television, mobile and PC-based devices, thus reaching broader audiences and increasing revenue potential.



Inlet Technologies
1121 Situs Court, Suite 330
Raleigh, NC 27606

phone: 919.856.1080
www.inlethd.com