SCTE35 and Ad Monitoring

An innovative system for monitoring SCTE35 splicing messages and using audio fingerprint technology for automatic program and advertisement content recognition. The system can be used by service provides to monitor Ad placement opportunity and verify correct Ad insertion, and by Ad agencies to check their Ads are played out as intended.

Features

- Automatic content detection based on audio fingerprints
  - Generate audio fingerprint database from recorded reference files
  - Monitor the presence of reference files in the input streams real time
  - Record matching information including matching reference files, timestamp, input transport stream, program and PID.
  - Search references on recorded transport stream files.
- SCTE35 monitoring and decoding
  - Monitor SCTE35 PIDs
  - Decode SCTE35 tables and display table content
  - Monitor, timestamp and record all SCTE35 tables in database
- Auto-triggered recording following SCTE35 splicing messages
  - Triggered transport stream recording immediately after an appearance of an SCTE35 tables
  - Configurable parameters including the length of recording, recoding period and file path
  - Database entry for recorded files which contain input, TS and program information
  - Easy methods for searching and managing recorded files
- Decode video key frames and display video thumbnail on all input programs to verify program content
- Monitor and decode PSI, DVB SI and PSIP tables
- Automatically reporting and alarms using email with flexible trigger conditions
- MPEG transport stream recording and playback
- Easy to use remote user interface
- Report generation and statistics on test results
- Inputs
  - Transport streams via Ethernet or ASI interfaces.
  - Supports broadcast stream and Internet streaming media using HLS, HTTP protocols.

Applications

- Monitors and test advertisement insertion systems
- Verify that advertisements are correctly placed as required by contracts

Overview

Video advertisement is a major revenue source for many broadcasters and video service providers. Video advertisements for linear broadcast are inserted into regular program transport streams using digital program insertion technique. Both video service providers and advertisement agencies want to know that advertisements are properly broadcasted, and ideally that the advertisements are watched by TV viewers. However, this process is not fully automated up to date.

ANSI/SCTE 35- "Digital Program Insertion Cueing Message for Cable" is a standard used by service providers to insert advertisement programs into regular program streams. The SCTE35 defines splicing messages that informs the down-stream processing equipment to insert advertisement in proper splicing points. Once the down-stream ad inserter receives the splicing message, the inserter can request the ad program from ad server and insert the program into a regular program.

Mocomsoft SCTE35 Monitoring and Automatic Content Recognition Software monitors all SCTE35 splicing messages in transport streams and records table content and arrival timestamp in the system database. The triggered recording functionality can automatically record a piece of transport stream upon an appearance of a splicing message or detected program content. In addition, the system uses audio fingerprint technology to detect program content. Users can use recorded transport stream files, such as a piece of advertisement, and generate a set of fingerprint database. The system can be configured to detect the presence of specific content in the input transport stream, and log the information on the content match. Additionally, the system can also be used to search specific content in recorded files using audio finger print match.

The Mocomsoft SCTE35 Monitoring and Automatic Content Recognition Software can run as a standard-alone application, or as a module in Mocomsoft Video over IP Monitoring System TSM100. TSM100 provides comprehensive analysis of IP and TS layers on MPEG transport stream on standard compliance, video thumbnail decoding, error report and alarm functionalities.

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SCTE35 Table Monitoring

The system will discover and monitor SCTE35 PIDs. All SCTE35 tables are decoded and its content and arrival timestamp are recoded in the system database. The system provides UI for tree view display of decoded SCTE35 table content, bar chart graphic display of SCTE35 splicing message arrival time, and easy to use UI for querying recorded messages based on time period, input, transport stream ID, etc.

Automatic Triggered Recording

The system can automatically record transport streams triggered by the appearance of SCTE35 tables. The recording parameters can be configured, including the file size of each recording, time interval, maximum number of recordings for the same trigger code. Recoded files are saved in local hard drives, while file metadata are saved in the system database for easy search and management of the recorded files. Automatic audio fingerprint match can be applied on the recording files to search for specific content.

Content Matching Based on Audio Fingerprints

Users can first use the system to generate audio fingerprint from recorded reference files and save the fingerprint data in the system database. The system will monitor the presence of reference content on input transport streams real-time or search the reference content on recorded files by calculating audio fingerprints and comparing to those saved in the database. When a content match is detected, the system will record metadata in the database, including the matching timestamp, matched reference file, transport stream ID and PID where a match is detected. The system provides an easy UI to search for all match history and generate reports for all matches. To verify advertisement broadcast, users can combine the automatic content recognition and triggered recording to the presence of the ad in transport streams.

Remote User Interface

The Remote UI application can be used to view test results and control the monitoring system remotely. Unlike a typical browser-based web view, the Remote UI is a fully featured Windows® application, and dynamically displays video thumbnails and all test results. The Remote UI application can be installed on the local monitoring system, or a Widows 7 PC connected to the monitoring system via IP network. Even when the Remote UI software is not running, the monitoring service can run automatically based on preconfigured parameters for unmanned 24 by 7 operations.

Ordering Information

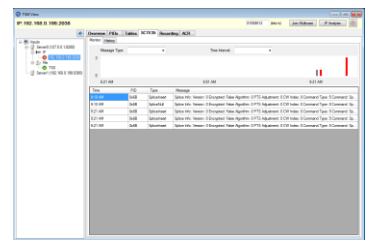Mocomsoft SCTE35 and Ad Monitor - ACR100:

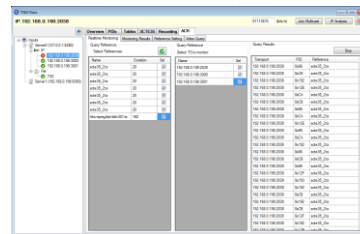| Model ADM100-S	Software only
Model ADM100-R	Preinstalled in a rack mountable computer

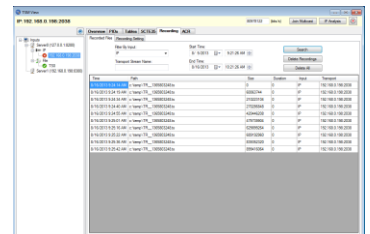# Sample of GUIs

Stream content
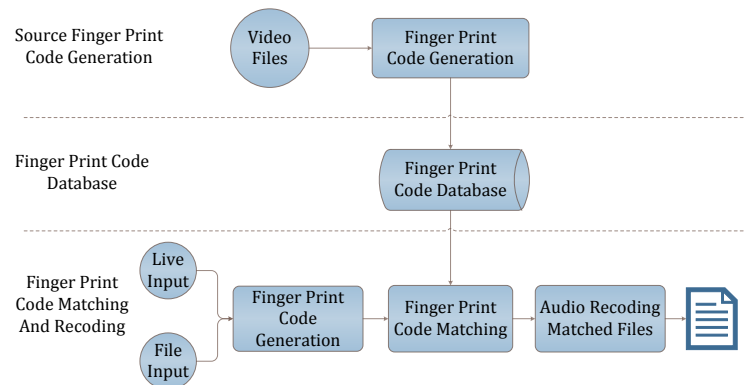

SCTE35 splicing messages

Automatic content recognition

Triggered transport stream recording

Application Example

Specifications

IP Input/Output

Interface:	Ethernet (RJ45 or Optical), 10/100/1000 Mbps and 10 Gbps DVB ASI

Administration

Access:	Remote management

System Requirements:

Memory:	4GB DDR2 SDRAM
Hard Disk Drive:	Minimum 500 GB Hard Disk, DVD-RW
Operating System:	Windows® 7 Professional

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