

Volicon's monitoring and logging solution

BY JULIUS PERL

Video monitoring and logging is an essential function for all TV broadcasters and cable programmers. Most perform this task using traditional analog video recording systems in VHS format and archiving the tapes. Primarily, this is to comply with FCC regulations, to provide advertisers proof of airtime or to satisfy internal archiving needs. Although this system is relatively inexpensive, it takes time, lacks flexibility and is cumbersome.

Volicon's has developed Observer, a digital broadcast monitoring system that enables broadcasters and cablecasters to view, monitor and share their own transmissions, as well as competitors' content from any location using a PC and the Internet. Segments can be recorded and shared instantly via e-mail or URL.

Encoding

Efficient encoding is required to allow storage of captured audio and video for 90 days or more at an ac-

ceptable image quality while maintaining reasonable costs. The Windows Media Video 9 format, based on a modified MPEG-4 standard, was chosen because it offers superior image quality at all bit-rate levels, providing a high S/N ratio (in terms of PSNR, a reliable measure of image quality) compared with MPEG-2. This provides VHS quality at 256Kb/s to 512Kb/s, yielding 45 to 60 days of VHS-quality video storage per channel on a 250GB drive. This bit rate range is suitable for video streaming over DSL and cable modem.

Storage

For storage, an SATA-based internal hard drive was selected over the SCSI standard (the traditional choice). SATA drives are well suited for storing compressed digital video with a price per megabyte at roughly one third of that for SCSI.

Combined with the above-mentioned VCI encoding, the use of six 250GB internal drives provides up to 60 days of storage for a four-channel system, including RAID 5 and a hot spare drives. Ninety days is possible with eight 400GB drives.

Once the program is stored, there must be an easy and fast way to access the information. Instant retrieval is possible with a built-in search engine that searches closed-caption text.

Video can also be indexed and retrieved via the date and time of broadcast. Selected content can be "clipped" and sent to other users via the system's streaming server.

Streaming

Transmission control protocol assures firewall support and reliable delivery of the media stream by employing timeouts and retries. The unique

use of server's storage caching and advanced buffering techniques permits a greater number of simultaneous client connections. The system can support an unlimited number of users, providing efficient transmission of real-time clips. Users can access the video from anywhere with access to the network.

User interface

The system's easy-to-navigate Web page with VCR-style controls enables the user to view single or multiple channels in real time or recorded segments. Users can toggle between windowed, split or full-screen display and move to an actual or relative time-stamp based on the station's clock.

A menu bar offers various options, including Home, Clips, Programs, Preferences and Logout, where users navigate to customize which programs and channels to view and compare on the screen, create clips of segments for e-mailing or to save, and set recording times and time zones. The system's interface is based on the needs of all potential broadcast users, including creative staff, engineering, sales, traffic, engineering and corporate management.

Conclusion

Currently, the FCC has issued a Notice of Proposed Rule Making (FCC MB Docket No. 04-232) that may require the recording and storage of all broadcast programming for a period of 60 to 90 days "for enforcing restrictions on obscene, indecent and profane broadcast programming." Should this rule be adopted, stations and cable systems may be wise in complying with its requirements.

BE

Julius Perl is a founder and vice president of marketing at Volicon.



The Discovery Channel uses a 32-channel system for monitoring and logging, with eight Observers (which are located at the bottom of the rack) and one WEB/SQL server (not shown). Photo courtesy of Discovery Channel.

