

Over 90% Reduction in Video Review Time
using a Video Surveillance Analysis Solution for a
Nationwide Litigation Support Company in the US



Executive Summary

The client represents leading corporations, law firms, attorneys, state and federal agencies through their broad range of litigation and business consulting services. Their services include video surveillance monitoring, analyzing, and generating relevant video content to build supporting evidence for their customers. However, accurate tagging and synchronizing of events within surveillance video feeds was a time consuming and arduous task. Moreover, the cost of litigation was much higher than cost of surveillance monitoring.

With an intention to cater these challenges, the client approached Sigma Infosolutions to develop a customized and innovative video tagging solution which could help the client redefine their value proposition in the litigation support services industry.

“Ultra light, portable, and plug-and-play application with no pre-processing

The Client

Based in the US, the client is a premier provider of litigation and business consultation services to the world's leading law firms, Fortune 500 companies, government agencies as well as private and public sector industries. With experts such as economists, statisticians, analysts, and other professionals, the client provide services for litigation and other consulting matters that require statistical, analytical, and functional expertise. One of their areas of specialization is building litigation cases through video evidence prepared through surveillance feeds.

Business Case

To build credible evidence, the client had to review and analyze hours of surveillance feed from numerous cameras. They worked on a manual system of viewing the recording, followed by analyzing and tagging the pre-decided events, and finally saving these video clips separately for further editing and synchronization. This time consuming process was extremely resource intensive and would require days and sometimes even months for the client to put together credible video evidence.

In order to improve the efficiency of this analysis process, and thereby improve the subsequent litigation process, the client partnered with Sigma Infosolutions to develop an automated video tagging and analysis solution that reduced the time for the client to prepare video content by as much as 90%.

Challenges

Video evidence is critical to any litigation. Many lawyers would work on a litigation case simultaneously. Therefore to maximize efficacy, the application needed to be very user-friendly and intuitive.

As a litigation support services provider, the client had to review and analyze thousands of hours of video feed. It was a challenge to make the solution scalable enough to handle future needs of large data analysis, as well as ensure the feeds are secure and tamper proof. The tagging instances changed with each case and hence the application needed the flexibility for customization of tagging instances and events.

Solution

Sigma Infosolutions' team worked closely with the client to design the architecture for efficient tagging of video feeds. This architecture was then coded from scratch on the Microsoft Platform.

The application provided a multi-camera input so that the user could tag multiple videos together. Later, he could simply collate all feeds corresponding to a specific event and build the content. He could even pause the entire process and pick up where he left off at a later time.

The application enabled the user to up to 12 camera feeds simultaneously at a single instance. 5 such different color-coded zones were included and there was a provision for further expansion. In effect, the user could work with 60 camera feeds simultaneously. The user could zoom in to a selected camera feed and also take snapshots, whenever required.

Tagging instances or 'events' could be created even during the tagging activity. There were different playback speeds in the scales of 1/8x, 1/4x & 1/2x for slow-motion video, as well as 2x, 4x & 8x for fast playback. Apart from this there were in-built multiple playback options for various video formats and the application also allowed searching, sorting and auditing features.

The application was a lightweight application was so that the selected video could be carried to the courtroom for evidence purposes during a deposition or trial. Since these tagged and sorted videos had to be played and analyzed at multiple locations other than at the client's office, a feature of remotely playing the videos was also built into the solution. Moreover the solution enabled instant playback of needed video feeds in the desired sequence to strongly present a case in the courtroom. Since the client's customers have varied requirements in video analysis for litigation support, this solution was also built with capabilities to add new features as and when required.

Technology

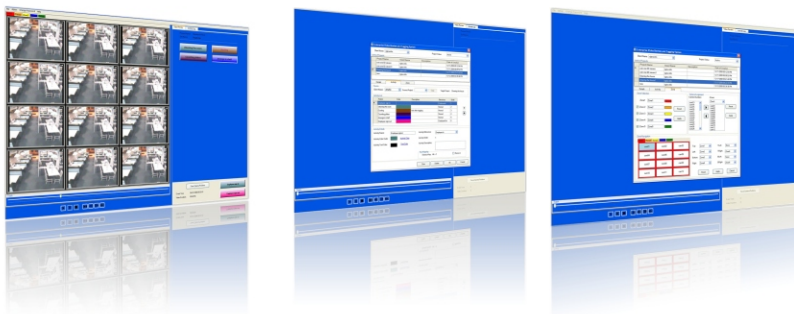
- .NET components
- MySQL 5.0 database used for storage. Compatible with Microsoft SQL Server & Oracle
- Highly Optimized .NET DB - Connection pooling for extensibility and scalability

Business Benefits

The video tagging and analysis solution drastically reduced the manual intervention in the review process, thereby improving the operational efficiency and effectiveness of its process. A centralized database made customized reporting and other video analytics requirements by the management more efficient.

Some of the specific areas of impact it had on the client were:

- Reduced video review and retrieval time by nearly 90%, thereby reducing time for preparation of case
- Cost effective system of video surveillance analysis
- Improved effectiveness of video analysis by minimizing gap in synchronization of events
- Enabled work breakdown i.e. tagging by less skilled people, review by more skilled people and analysis by highly skilled people.
- Readily available evidence display system



“Can handle video feeds of up to 60 cameras simultaneously with further extension possible

About Sigma Infosolutions Limited

- Sigma Group, an Indian conglomerate has more than 4 decades of experience in Mining, Chemicals Manufacturing & Export, Handicrafts Manufacturing & Exports, and Software Development
- Sigma Infosolutions is a TUV certified ISO 9001:2000 company
- Headquartered in US with presence in UK and India
- Some of our esteemed customers include Airtel, Zyme Solutions, Yodlee, Celertity Consulting, Resolution Economics, Birla Global Asset Finance, Fosroc Chemicals, Surgery Planet etc.
- Sigma Infosolutions' services comprises of application development, application management, IT Consulting, Offshore testing, and Website and Portal Development