
Agency Name: Irvine Police Department
Technology Program Name: Communications Bureau Video Wall
Competitive Category: Innovation in Information Technology
Agency Size: Medium
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Executive Summary:

The Irvine Police Department is constantly looking for ways to improve the quality of the service that is provided the community. All areas within the department take this challenge seriously and look for ways to contribute. The Communications Bureau wanted the ability to provide real-time information to officers in the field about what is happening at specific locations in order to improve their effectiveness, enhance officer safety, and improve the response to emergency calls for service. A video wall was developed that allows simultaneous display of multiple sources such as real-time video and computer outputs. The goal was to provide a one touch simple interface utilizing off the shelf products. The display interfaces with the department's Computer Aided Dispatch System, a VCR/DVD, CATV, existing building security cameras and ninety-two cameras strategically placed throughout the community. It is now possible to display the exact location of each police unit and the active and pending calls for service. From the community cameras, updated information can be relayed to the field officers prior to their arrival. The video wall can be controlled from eight workstations within the Communications Bureau and allows dispatchers to pan, tilt and zoom cameras to obtain the best possible view. Since the implementation of the video wall, information provided from these cameras has been instrumental in the timely resolution of multiple in-progress calls.

Program Narrative:

This presentation will discuss the objectives we hoped to achieve by installing a video wall, the challenges that convinced us to take on the project, what we installed and the success of the implementation.

Goals:

- Improve the safety for responding officers by relaying updated information as they respond to the incident.
- Improve the ability of the officer to prepare appropriately to handle a situation by providing real-time reports of what is occurring.
- Provide a one-touch simple user interface.
- Provide of the-shelf products using industry standard programming thereby lowering the ongoing maintenance costs.
- Increase the size of the viewable camera image and number of viewable camera images that can be seen at one time.
- Provide the ability to PTZ (pan, tilt, zoom) and view control of cameras from multiple locations.

Challenges:

- City had an existing camera-based security system with 27 cameras that displayed on two 27" monitors.
- Single position interface to control all of the cameras could not be accessed by multiple users.
- There were multiple viewing locations: Communication's Bureau and Watch Commander's office, but only one person could control what was displayed at any time.
- The user interface was cumbersome.
- Proprietary camera control system made it difficult to add or modify the display. Changes were costly.
- The size of the Communications Bureau limited the available options for upgrading the display of the cameras.

Solution:

- Installed three PLC-XF31 Sanyo Dual Lamp 5200 ANSI Lumen Projectors with Long-Life Kits projected on three 100" diagonal wall-mounted fixed screens. The two exterior screens support either a full display or four (a quad split) images each, generated from any combination of the in-house security cameras, the community based cameras or the VCR/DVD feed. The center screen is full display only. This screen is interfaced with the Computer Aided Dispatch system and can be used to display a map of the City with unit locations and calls for service.
- Control all source images (cameras, computer, VCR/DVD) fed to a standard Extron matrix switcher that is controlled by an AMX madero touch panel. The Extron matrix allows us to take any input to any output that in turn allows us to switch anything around. The AMX Madero touch panel is programmed to support simple access to cameras and sources. It is expandable.
- Through a web interface any number of users, with web access, can view the camera displays. The views can be defined by the user.

With the installation of the video wall Communication's Bureau personnel have been able to take a more active role in identifying issues at locations prior to officer's arrival by pulling up a camera at a location when a call occurs from their desktop. This has proven invaluable in numerous situations.

- A young autistic child was reported missing. The Dispatcher checked the cameras in the area as the officers responded and located the child. The dispatcher followed the child with the camera and was able to direct the officer to the child.
- An officer was involved in a foot pursuit. The dispatcher manipulated the camera at the intersection until she located the suspect and officer scrambling on the ground. Perceiving that the officer was unable to reach for his radio to ask for help, the dispatcher was able to correctly evaluate the situation and send additional officers to assist.
- A bank called us with a description of an individual trying to pass a fraudulent check. As officers were dispatched to the scene, the dispatcher brought up the camera in that area and zoomed in on the bank. A subject matching the physical description of the suspect was seen leaving the bank. He walked down the street and ducked behind a housing tract sign to avoid the officers. The dispatcher was able to direct the officers to the suspect's location where he was subsequently arrested.
- A citizen called to report that a young female was tied up with zip ties in the back of a vehicle at a gas station. The female was yelling and screaming for help. The dispatcher immediately sent officers to the area and pulled up the camera view. They followed the vehicle as it drove south then east down the street. They were able to update the officers on the exact location of the moving vehicle. Officers stopped the vehicle and

determined that it was a mother taking her child to the airport to be sent to a "tough love" program.

- An officer was booking a suspect in the police custody area. The suspect became combative, throwing the officer to the ground. The dispatcher noticed on the camera view that the officer was struggling with the suspect and immediately dispatched officers to assist. The suspect was under the influence of a controlled substance. At no time was the officer able to ask for assistance over his police radio.
- An officer was in foot pursuit of a subject. By monitoring his progress on the cameras, the dispatcher was able to coordinate the follow-up units even though the officer was unable to verbalize his location.
- A vehicle fire was reported at an intersection. The dispatcher brought up the camera view and saw that the vehicle was engulfed in flames. Three citizens were beating the fire back and two of them carried a lifeless body from the front of the car and placed her on the ground. The dispatchers relayed this information to the responders who upgraded their response. The bravery of these citizens saved the driver's life. The dispatcher's ability to witness this incident was a great help in reducing the response time.

The examples of the benefits of our new video wall are unending. By increasing the availability of the cameras to all of the staff we have created a more interactive environment. Officers are more prepared to deal with the actual situation they will be facing as they receive updated information. By using the cameras, we have been able to locate outstanding suspects, missing children and identify true acts of heroism by citizens. Through the web interface we have simplified and increased the availability of the views. By utilizing industry standard off-the-shelf products we have created a system that can grow as our needs develop. The successes from the video wall have also provided dispatchers with the satisfaction of knowing that they make a difference and reinforced their position as valuable members of the team.