APPENDIX Q
SFO DESIGN WHITE PAPER

A. The Airport's Security Operations Center currently uses several disparate systems for camera surveillance management and access control monitoring and reporting. Among them:

1. Pelco/Endura version 1.8 for camera viewing and image transfer

2. SmartCatch for video analytics

3. MDI SafeNET Access Control System for displaying and researching access control and Airport ID badge information. Airport will migrate off of MDI to Lenel.

4. Quantum Secure Airport Identity Management System (AIDMS), ID badge provisioning software that integrates to both MDI and Lenel.

5. Lenel OnGuard Access Control System will be installed for Domestic Terminal 2 for opening in January 2011.

6. Intergraph Computer Aided Dispatch (CAD) for viewing alarm information. (Primarily used by Communications Center for public safety dispatch).

7. Crestron touch panel for placement of camera views on various monitors

8. TSC Airport Security Display Processor (ASDP) radar for perimeter security surveillance

B. The Challenge

1. The current operation lacks an integrated and cohesive means of conducting surveillance, response and reporting in a smoothly efficient manner. To illustrate, the following is a description of the many processes an SOC analyst must follow during a typical day:

   a. The day begins when an employee enters the SOC and switches on flat panel monitors located on a wall in front of the workstation containing:

      1) A CAD workstation for receiving alarms, alerts and information directly from Airport Communications Dispatchers

2) An MDI workstation for displaying and researching access control and Airport ID badge information

3) A SmartCatch workstation for displaying and researching video analytics

4) A Crestron touchscreen. Creston is hardware/software that manages views on video wall. (Creston also is used by the TSA SCC and the Communications Center)

5) A monitor that displays scrolling Airport ID badge card swipe data

6) A PC that contains an MS Office suite with email, word processing, spreadsheet and slide presentation applications

b. In no particular order, the analyst:

1) Powers up the PC and checks email and the Aviation Security daily calendar

2) Opens up the spreadsheet application to read the prior SOC Shift Report

3) Checks the SmartCatch workstation to note any relevant security incidents

4) Opens the Airfield Incident Reporting System application on the PC to note any security incidents

5) Activates the CAD workstation and resolves or clears any outstanding alarms

6) Turns on and begins passive monitoring of Police and Maintenance radios (portable radio, not a console)

7) Uses the Crestron touchscreen to position various cameras on monitors

8) Checks the scrolling data monitor for lost and invalid badge activity

c. At any given time, the "Alarm Call-up" monitor may display a very brief image of a location where an alarm has been activated. Although the default location for callup alarms is a large monitor on a wall to the right of the tabletop, it may be placed on a different monitor for closer viewing.

d. If the analyst has not had sufficient time to note the camera number from the brief callup or wants to research an alarm from a CAD workstation alert, he must find the camera number on an Excel spreadsheet list where cameras are sorted by location. Alternatively, he may also use other tables of information that list alarm locations along with corresponding doors numbers (MDI and Pelco), camera numbers (Pelco) and card reader numbers (MDI).

e. Callup alarms must be researched by viewing the location through the Pelco Endura workstation. If the alarm involves a badged employee, the SOC analyst must turn to the MDI workstation and look up the information on the location to find the badge number of the Airport ID card (MDI) that immediately preceded the alarm. Then a lookup of the Airport ID badge (MDI) is required to obtain a photo that can be matched to any image captured by the alarm callup.

f. If the investigation resulted in a situation that requires the SOC analyst to issue an Admonishment Citation (program to admonish employees for either safety and/or security violations), a lookup on the PC in the MS Access database must be conducted to determine if the employee has been issued warnings or admonishments in the past.

g. The analyst may receive a telephone call advising of a security event not communicated electronically, and thus be required to quickly locate a particular camera. In this case, the SOC analyst may either refer to a binder with illustrations of camera positions according to boarding area and terminal or other area; or may refer to the "All Camera" list – an Excel spreadsheet previously referenced.

C. Event Management

1. The proposed event management system for the SOC must provide a means of resolving security alarm "events" generated by door alarms. At present, the Security Operations Center uses the same application as the Airport dispatchers. However, our goal is the use by the Security Operations Center of an application that will allow it to manage alarms in a manner different from the CAD application. Critical to this will be the Airport's decision to allow the SOC to use only this new application, rather than CAD to resolve alarms. Currently, there is a mandate and protocol for SOC staff to interact with CAD by indicating disposition of alarms. It would be burdensome upon the SOC to have responsibility to two separate applications for resolving the same alarm. Currently, SOC does not receive all alarms generated by CAD. The information from CAD is a one way stream and the SOC does not have the ability to add any information to an event.

2. The application should display CAD alarm information and the Airport's access control system (MDI) information within one common area that syncs the data from both sources. The information should be displayed as text but should also have the ability to be indicated as a flashing icon on an Airport map* that provides both satellite and street level views, and terminal facilities. Alerts on any alarm "point" should be user-programmable so that it is audible or silent. Information should be correlated so that door alarms at sites where a card reader is installed will display the most recent card swipe as well as historical card swipes simultaneously with the location of the alarm. Options for the display will include the Airport ID card photo, first and last name, employer and employer telephone number.

3. The alarm "list" shall be programmable from among a set of "types" or "priorities" e.g. low, medium or high priority, distinguishable either by the window in which it appears or some other remarkable feature such as color or animation.

4. Historical data for alarms, locations and card readers shall be available for viewing and querying.

5. At the same time, any alarm point where a camera or cameras are "available" should display the corresponding image in real time as well as historical. All locations should be programmable to indicate adjacent cameras, ability to link cameras to track an individual thru an event. The image area should function like a Google map click and move, zoom out and zoom in.

6. The application should allow resolution of the event in the same common area as above with time stamps of the initial alert and menu choices and a time-stamped comments field that can be incorporated into an archived report and attached to an email. The report should also allow for the attachment of video images.

7. The application should allow the SOC on its own to create and report events not generated by automatic location alerts with the same options as above.

8. There should be 2 workstations, with identical layouts – one on each side and each workstation and user should have the ability to use the application simultaneously.

9. Users should have the ability to communicate across the application via "instant messaging." Ability to send messages/video images of events to first responders via PDA/portable laptops.

10. An identical video/event management system, but one that does not receive door alarm "alerts" shall be made available for users (TSA) other than the Airport's SOC.

11. The application should include an option for creating a "script" or "scripts" – a list of cameras that would be immediately activated in connection with an alarm at or on a specific point. Ability to make macros for camera call-ups or synchronizing camera views to track an individual.

12. There should be an option to list protocols of step by step actions an SOC analyst would take and attach them to specific events.

13. Reporting: All data should be "reportable," thus; a user would be able to obtain data on any data field for any location, during any time span, etc. Users should be able to create queries on the fly or archive them for scheduled reporting.

14. Training: Training in use of the application shall be provided <u>on site by the vendor(s).</u> Application shall include online help menu and manual.

15. Maintenance: Costs for initial and renewal maintenance (length of and what it includes) should be included in the proposal.

D. Video Management

1. The video management application should be based upon a comprehensive Airport map which indicates all landside and fieldside facilities -- including but not limited to terminals, garages, cargo, water perimeter and other outlying areas such as fuel farm -- of multiple levels, with the ability to drill down from the "bird's eye" view to a perspective of a location relative to surrounding landmarks. "Mouse over" on a door or location should reveal the door or location number. "Mouse over" on a camera should reveal the camera number. All cameras should be indicated on the maps relative to all views with an easy identifier to distinguish between types (PTZ or fixed).

2. A user should be able to display an area on the map by holding down the mouse pointer and dragging the image in any direction. It should also include controls for panning up, down, right and left. Options should include a drop-down list of locations that can be selected for display.

3. A separate listing of cameras shall be available for selection by the user with the capability to sort by camera number, group, location, building, level, etc. Therefore, each camera will be assigned a camera number (1225), group (screening checkpoint, sterile connector, rental car center, air train, curbside, baggage carousel, etc.) as well as building (terminal 1, terminal 2, terminal 3, international terminal, rental car center, air train, etc.) and level (level 1, 2, 3, etc.)

4. The map shall be capable of display on any monitor in the SOC in full or split screen mode.

5. User should be able to transition immediately between live and recorded video as well as view live and recorded video side-by-side without any steps in between.

6. Pan-tilt-zoom controls shall be programmable for assigning group priorities.

7. All cameras shall be programmable to add or exclude individual user groups.

8. Immediate playback should be available in a range of modes from slowest to fastest and frame by frame.

9. There should be a feature for immediate archiving and exporting images.

10. There should be a feature for "stitching" camera views together.

11. There should be a feature for bookmarking a section of video.

12. The application should run any separate analytics (such as SmartCatch) within the video and be expandable to allow the addition of any compatible programs.

13. There should be a feature for the creation of pre-programmed camera "tours" with camera selection and designated "dwell" times that can be selected and run ad hoc.

14. Zoom feature on live and recorded video streams.

15. Capability to play back synchronized video streams from multiple cameras (viewing the action occurring at the same time from different cameras).

16. The application should include a feature that indicates the time, date and user name of each instance of image transfer and export.

17. The application should include a feature that automatically deletes archived images beyond a user-specified period of time.

18. Camera outages are reported by the system to SOC/Facilities.