CITY OF OAKLAND

AGENDA REPORT

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OFFICE OF THE CITY CLERK
OAKLAND

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To: Office of the City Administrator
Attn: Dan Lindheim
From: Department of Information Technology and Oakland Police Department
Date: October 28, 2008

Re: **Action on a Joint Status Report From the Department of Information Technology and the Oakland Police Department on the Status of the Installation and Utilization of In-Car Video Management Systems (ICVMS) In Police Vehicles**

SUMMARY

As requested by the Rules and Legislation Committee, staff has prepared this report detailing the installation and utilization status of the In-Car Video Management System (ICVMS) project. The information contained in this report provides a chronology of events, identifies the institutional, integration, and technological challenges, and outlines the progress of on-going implementation, training, and testing of the system. This report also identifies changes to the scope of work and its impact on the project timeline.

FISCAL IMPACT

On September 19, 2006, City Council passed Resolution No. 80127, C.M.S., authorizing the Oakland Police Department to enter into a contract with Integrian (formerly Digital Patroller) for an amount not-to-exceed $1,665,664 to purchase the In-Car Video Management System for approximately 80 Police Department vehicles, along with a three year maintenance contract, video network equipment to support secure video transmission, and related installation services. In addition, funds in the amount of $272,000 were allocated for one fulltime civilian employee to administer and support the ICVMS program, recurring costs for dedicated AT&T telecommunication lines to support the large amount of video data uploads from remote locations, and annual network maintenance.

Currently, the City is negotiating with Integrian over a change order to accommodate the recent OPD operational changes, move the main servers and storage equipment from the Police Communications Center (911) to the Police Administration Building (PAB), reconfigure the network at the PAB, reconfigure the microwave communications between the 911 Center and PAB, improve the network performance at the PAB by deploying additional network infrastructure, make the videos available for additional locations in the downtown area at the PAB and 250 Frank Ogawa Plaza, and connect the Eastmont station site to the ICV network. Moving the main servers from the 911 Center to the PAB will provide a savings of $60,000 annually (currently allocated for recurring telecommunication costs), which could be used for the change order costs (estimated to be less than $60,000), however the cost to move the main servers is approximately $29,000.

No additional funds are requested in this report and no action is requested of the Council at this time.

BACKGROUND

Task 32 of the Negotiated Settlement Agreement (NSA) mandated that staff explore the possibility of implementing an in-car video system that would provide visual evidence of incidents and public interactions that occur while officers are on patrol throughout the City.

The project scope requires the overall network architecture to connect to the Police Communications Center, Police Administration Building, and Eastmont substation. In the original plan, the 911 Center was supposed to be the main hub for housing all the video processing and storage equipment. The civilian employee was to be located at the 911 Center to avoid any network latency with the video transport. The target video upload stations were planned for the installation at the PAB and the Municipal Service Center locations. Only a couple of locations in the PAB and 250 Frank Ogawa Plaza were identified for video viewing. The video copying and duplicating tasks were planned for the Communications Center and the Internal Affairs Division (IAD) only.

KEY ISSUES AND IMPACTS

After extensive contract negotiations between the City Attorney's Office and Integrian, the contract was signed in March 2007. However, the Scope of Work (SOW), project timeline, and payment schedule were not finalized and signed until August 2007. The following timeline was established and modified as a result of various project delays:

Project Milestones - Video System Deliverables

Milestone	Description	Timeline/Status
1	Signing of Agreement – Payment of 10% of total contract value	September 2007
2	Completion of Installation of Six Test Cars and Test System Payment of 15% of total contract value	November 2007
3	Completion of Installation of Servers – Payment of 25% of total contract value	November 2007
4	Completion of Installation of first 46 Vehicles – Payment of 20% of total contract value	September 2008
5	Completion of Installation of second 55 Vehicles – Payment of 20% of total contract value	December 2008 (Planned)

Milestone	Description	Timeline/Status
6	Successful Final Acceptance Testing – Payment of 10% of total contract value	March 2009 (Planned)

Project Milestones - Video Network Deliverables

Milestone	Description	Timeline/Status
1	Network Equipment Delivery	November 2007
2	Network Installation and IPSS Integration Services	March 2009 (Planned)
3	Microwave Equipment Delivery	November 2007
4	Microwave Communication Installation Services between 911 Center and PAB	March 2008
5	WiFi Access Points Installation at PAB and Eastmont Station	TBD

Chronology of Events

The following timeline highlights various ICVMS project activities:

- *September 2006*
  -City Council approved the ICVMS (Resolution No. 80127 C.M.S.)
- *February 2007*
  -Signed vendor contract
  -19 PSO Vehicles were added to the list of ICV project thru Measure Y funding
  -State Department of Justice/Justice Assistance Grant (DOJ/JAG) funding was secured for 2 additional vehicles
- *August 2007*
  -SOW, project timeline and payment schedule finalized to install the ICV equipment in 101 vehicles
  -Decision made to install the ICV equipment in the new vehicles
- *June – July 2007*
  -69 new vehicles delivered
  September 2007
  -New Dell laptop computer system ordered for vehicles

October 2007
-Department General Order (DGO) I-15-In-Car Video Management System policy signed by the Chief of Police
-Multiple Train-the-Trainer sessions conducted
-Decision made to combine the installation of all the new equipment, including radios, laptops, and in-car video in the new vehicles
-Decision made to use the ICV vendor for the laptop installation as well

- *November 2007*
  -Pilot testing on four patrol and two Problem Solving Officer (PSO) vehicles concludes
  -Complete ICV parts arrive
  -All the Hardware Server and Storage installation completed
  -Installation of Video Upload Stations at PAB completed
- *December 2007*
  -Installation of Video Upload Stations at Eastmont Station completed
  -Integration with the IPSS network completed
- *January 2008*
  -First prototype of new patrol vehicle completed
- *February 2008*
  -Microwave backbone installation between the 911 center and the PAB completed
- *March 2008*
  -Network Equipment installation at 911 center and PAB completed
  -Installation of ICV equipment on 101vehicles is completed
- *June 2008*
  -101 vehicles equipped with the ICV equipment
  -Main server ICV software upgrade and cluster testing completed
- *August 2008*
  -Installation of a client workstation at the Internal Affairs Division is completed
- *September 2008*
  -All Area 1 and 2 vehicles upgraded to the latest software release
  -Approval granted by the Community and Economic Development Agency to move forward with the Eastmont Substation Microwave Antenna. This will save the estimated recurring cost of $60k per year to have a telecommunication connection between the PAB and Eastmont Substation.

Technology Issues

In-Car Video management systems are complicated and challenging due to the complexity of coordinating moving vehicles, transferring massive amounts of video, preserving data integrity and information security, and the storage of large amounts of data for long periods. During the vendor selection process, the Integrian solution was ranked highest by all the committee members because of the proven digital technology, ease of use, video quality, and excellent

references. During the installation process, staff was informed that the vendor (Integrian) had upgraded the software version and made many significant changes in the product. This new version of the product caused some major performance and functionality problems. In addition, several months were needed for the vendor to complete the necessary adjustments to make the new software compatible with the Oakland networking environment. Serious technological challenges arose from these new technologies being integrated with the existing Oakland IT infrastructure.

However, the most recent Integrian software upgrade (version 4.5.8) has resulted in improved performance, faster video downloads, more stable video viewing, and reliable application. The DVD authoring process is still tedious and time consuming, and the City is working with the vendor to seek improvements in the currently inefficient DVD copying process. Integrian has promised that the next software release will improve the DVD copying process, eliminate the need to copy hours of video, and allow the user to pick the time slots.

Institutional Issues

Due to the recent implementation of Geographical Policing in Oakland, and the need for viewing at multiple locations, the original network architecture required a total change. The new design, moving the main servers and video storage equipment from the 911 Center to the PAB, will be outside the original scope of work, and requires a cost plus change order. The change in equipment location and personnel relocation will also be reflected in the modified ICVMS Policy document. Based on the new design requirements, the new video upload stations were installed at the PAB and Eastmont station sites, instead of the Municipal Service Center. Additionally, vehicle laptops were never tested with the Integrian Software during the evaluation period (they had not yet been purchased) and this new platform caused system compatibility problems. In addition, the RadioIP middleware software for end to end encryption currently running on the police mobile computers, had compatibility issues with the ICV push technology[1]. Initially, the City requested only one year of video retention, but this was later changed to a three year requirement. The new storage requirement had an impact on the system design and storage sizing. Also, the Eastmont Station was added as a new video upload site, which will require network infrastructure changes, new servers, and storage installation.

Integration Challenges

Deploying and integrating any new enterprise hardware/software solution in the existing infrastructure always poses challenges and problems. In the case of ICVMS implementation, Integrian is the prime contractor; however, there are six other companies and solution providers

[1] Recent software upgrades may have alleviated the problems with ICV software running on the Dell laptops and with the RadioIP software client. Final determination will be reached after formal testing has been conducted.

that are supplying various products and services. The following table outlines the roles of the various vendors and the complexities associated with the products and services they provide.

Vendor	Role	Products and Services
Integrian	Prime Contractor	• Project Management/Systems Integration • In-Vehicle Digital Video Recorder Hardware and Software including DVR, Camera, LCD Monitor, Microphones, etc. • ICV Application and Database
Nationwide	Sub-Contractor (Car Installer)	• Installation services for In-Vehicle Digital Video Recorder Hardware and Software including DVR, Camera, LCD Monitor, Microphones, etc.
PC Professional	Sub-Contractor (Servers)	• Main and Garage Servers and Storage Solution • Installation Services
Intervision	Sub-Contractor (Networking)	• Network Architecture and Design • Installation of the new ICV networking equipment • Integration with the IPSS Network • Integration with the Internal Affairs Network
Pacific Communications	Sub-Contractor (Microwave)	• Evaluate the 4.9GHz Public Safety frequency • Microwave equipment and antenna installation at PAB, 911 Center and Eastmont Station
Yuri Enterprise	Sub-Contractor (Construction and Cabling)	• Fiber Optics and conduit installation at 911 Center, PAB and Eastmont Station • Cabling for Video Upload stations at all three sites • WiFi Access Points installation at PAB and EM
AT&T	Sub-Contractor (WiFi)	• WiFi Assessment Study at PAB • WiFi Equipment and Installation

Coordinating with these resources and their schedules, managing the City resources, and ensuring that the product is going to be compatible with the current operation requires significant planning and testing protocols.

PROJECT DESCRIPTION

Currently, 101 vehicles are fully equipped with ICV; 70 have received software updates, and 5 vehicles are currently fully operational. Since staff began the testing process, anywhere between 2 and 12 vehicles have been operational at any one time. Although this system is not yet live, during the testing period a number of requests for video have been received. Requests received at the onset of the project could not be met as the appropriate authoring hardware and software had

not yet been implemented. Once authoring was possible, requests for video were processed as part of the testing procedure. Requests were received from the District Attorney's office, CHP, OPD, and Internal Affairs Division. Some of the video has been used in criminal investigations, internal investigations, and for training purposes.

Examples of video footage requests include:

- An OPD vehicle in a pursuit from Oakland to Richmond collided with an uninvolved vehicle. This footage was used by the officer as evidence during OPD's Accident Review Board to determine who was or was not at fault. The footage was also used by CHP during its investigation of the collision.

- An OPD officer was providing back-up coverage for another officer on a felony car stop. The covering officer stepped out of the "V" of the door thereby putting both officers at risk. The OPD Training Division now uses this video as a training tool in officer safety.

- Officers conducted a vehicle stop; when the driver was removed from the vehicle, his pants fell down causing a handgun and drugs to fall to the ground. This footage was later requested by the District Attorney for use as evidence in this court case.

Next Steps

The DIT and OPD will continue to work closely to successfully bring this project to closure, revise the Policy document to address the changes, create an effective operations and maintenance plan that will ensure effective system functionality and the efficient policies and processes.

SUSTAINABLE OPPORTUNITIES

Economic: The greatest economy of savings will be realized in the potential for a significant reduction in liability claims and payouts.

Environmental: There are no environmental opportunities identified in this report.

Social Equity: Use of an ICVMS could dramatically reduce the number of lawsuits levied against the Police Department and the City. The system could provide strong evidence that officers interacted appropriately with citizens by documenting evidence of contacts. A major realization noted by agencies that use this system is that officers and citizens both appear to behave more appropriately when they know they are being recorded.

DISABILITY AND SENIOR CITIZEN ACCESS

There are no disability or senior citizen access related issues associated with this report.

ACTION REQUESTED OF THE COUNCIL

Staff requests that Council accept this report.

Respectfully submitted,

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Department of Information Technology

Prepared by: Mr. Ahsan Baig,
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Respectfully submitted,

FOR Wayne G. Tucker
Chief of Police

Prepared by: Lt. Ron Yelder
Bureau of Administration
Oakland Police Department

APPROVED AND FORWARDED TO THE
PUBLIC SAFETY COMMITTEE:

Office of the City Administrator

Item: _____
Public Safety Comte.
October 28, 2008