5.0 PROJECT TECHNICAL APPROACH AND ORGANIZATION

The Port of Oakland (the Port) and the City of Oakland Police Department (OPD) have partnered through a Memorandum of Agreement in order to share information and resources to facilitate law enforcement in the Port Area and therefore improve security for a critical link in the nation's Marine Transportation System. By providing OPD with access to Port CCTV cameras at key entry points to the Port, criminal and dangerous side shows and street racing 'events' have been shut down in the Port area before they had a chance to escalate. This experience points to further opportunities for coordination and interoperability that can be expanded to address emergency response capabilities and leverage available resources to further improve the effectiveness of OPD and the Oakland Fire Department (OFD) on a City-wide basis. A focal point for this coordination and a platform for interoperability is a Domain Awareness Center that will be jointly utilized and operated by the Port, OPD, OFD and the Oakland City Office of Emergency Services (OES).

The objectives of this Joint City-Port Domain Awareness Center (DAC) include:

- Integrate efforts between regional security partners – interoperability. Operational capabilities in the Port and the City can be improved by creating a platform for interagency coordination. A joint coordination center that can allow for participation of OPD, OFD, OES, and the Port (and facilities within the Port), with the potential for expansion of participation to include other regional security partners, will improve operational coordination and mission execution by providing a common operating picture and single focus for prevention, preparedness, response, recovery and mitigation.
- Focus on domain awareness, situational awareness and improved response capabilities. There are currently significant gaps in abilities amongst regional law enforcement to see, understand and share tactical information. Domain awareness is a key component of an active, layered approach to security. It improves Law Enforcement's ability to collect, fuse, analyze, display and disseminate actionable information. Similarly, situational awareness is critical to safe and efficient incident response. Surveillance and monitoring data coupled with information management software and reliable telecommunications provide first responders with the information they need to focus their response. This reduces the number of assets that need to be deployed and improves the safety and efficacy of their response.
- Develop a sustainable technology solution that is guided by leveraging existing initiatives, strengthening linkages between existing command and control nodes. expansion of detection and deterrence capabilities, improving effective information management as a force multiplier, developing detailed concepts of operations (CONOPS), enhancing immediate readiness capabilities
- Support National Preparedness Priorities to include expanding regional collaboration, strengthening information sharing and collaboration capabilities, enhance interoperable communication, strengthening Chemical, Biological, Radiological, Nuclear And Explosive (CBRNE) detection and response capabilities.

The SAIC Team provides the best value in delivering the goals and objectives of the DAC work scope, supported and based on our qualifications, experience, and talent, highlighted as follows:

- The SAIC Team has past experience in the design-build, system integration and implementation of PSIM solutions for Federal, State, and local government agencies, as well as maritime port authorities for domain awareness and incident management.
- SAIC has provided similar design-build system integration services for the [redacted], the [redacted], and [redacted] and our selected PSIM solution has been used at the [redacted]

- We have prior experience and the ability to work closely and collaborate with government, community groups, and other stakeholders to build consensus vital to realizing the DAC objectives.
- SAIC selected team members who have both previously worked together on similar projects and bring unique qualifications for this design-build work scope, addressing building infrastructure as well as system integration and solution delivery of a DAC-PSIM.
- SAIC has developed and structured its team organization to optimize the staff delivery focus for both PART-A and PART-B, while also facilitating collaboration across the different disciplines through the Project Manager, Mr. Taso Zografos.
- Mr. Zografos is a local Project Manager who knows the operational domain environment, is based in the Bay Area, and has the right qualifications and experience to ensure successful DAC delivery. Our proposed staff will be 100% dedicated to getting this job done right on time and within budget, with the flexibility to perform duties on short-term notice and under changing time constraints.
- Mr. Zografos will adhere to SAIC industry best practice cost control methods, leveraging tools and procedures for successful design-build delivery of the project.
- Our Team has a clear understanding of the DAC Concept of Operations, PART-A, and PART-B work scope, and we are ready to hit the ground running on day one to deliver the Oakland DAC.

In this section the SAIC Team presents our technical approach and organization required for this project as well as our understanding of the critical project elements. Herein we provide the following:

- **5.1 Project Understanding** of the overall work scope and the services needed for project success.
- **5.2 Technical Risks and Mitigation Strategies** and our methodology for continuous process improvement.
- **5.3 Key Features of Our DAC-TLS Solution Technical Delivery Approach** that the SAIC Team brings to this effort.
- **5.4 DAC-TLS Proof-of-Concept Architecture Design Framework** describing how the various City/Port systems identified in the Technology Linkage System Document are to be accessed in the DAC and descriptions of any infrastructure/hardware/software improvements.
- **5.5 PSIM Proof-of-Concept Implementation Framework** describing the functionality requirements and what systems we will integrate into the PSIM solution as identified in the DAC CONOPS and Technology Linkage System Documents, based on implementation timeline/budget.
- **5.6 Project Schedule** demonstrating our ability to complete design/build/implementation within 12 months.
- **5.7 Detailed Work Breakdown Structure (WBS)** detailing our approach for technical delivery success.
- **5.8 Technical Coordination and Collaboration** describing how we intend to interface with City/Port staff, technical stakeholder, and the community in achieving project success.

5.1 Project Understanding

The City of Oakland, in cooperation and partnership with the OPD, OFD, and OES, are working jointly together in collaboration with the Port to design, build, and implement a Joint City-Port Domain Awareness Center (DAC). This DAC will be housed at the existing Oakland OES facility where it will consolidate an evolving network of existing and future surveillance and security sensor data to actively monitor critical infrastructure such as City and Port facilities, utilities, roadways, and moving assets.

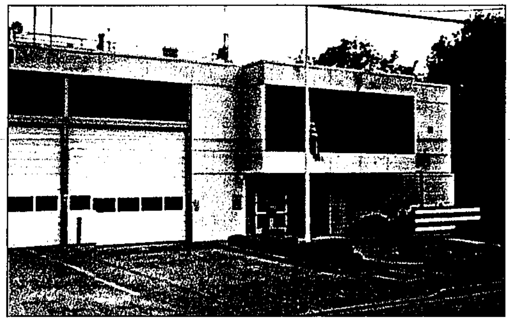


Figure 5-1. Oakland OES Facility.

This project requires existing building improvements to be made to the current OES facility to incorporate the physical attributes that will comprise the DAC. The project will also require design/build system integration expertise to deploy the necessary technology, tools, and interfaces needed to deliver DAC capabilities. As such, this project is comprised of two separate and distinct work scopes described as follows:

- <u>PART-B EBI: Existing Building Improvements (EBI)</u> – to the existing OES facility that includes interior infrastructure modifications for the replacement/installation of a new video wall system.
- <u>PART-A TLS: Technology Linkage System</u> – for the design/build and implementation, and maintenance support services for the technology, tools, and interfaces to establish DAC capability.

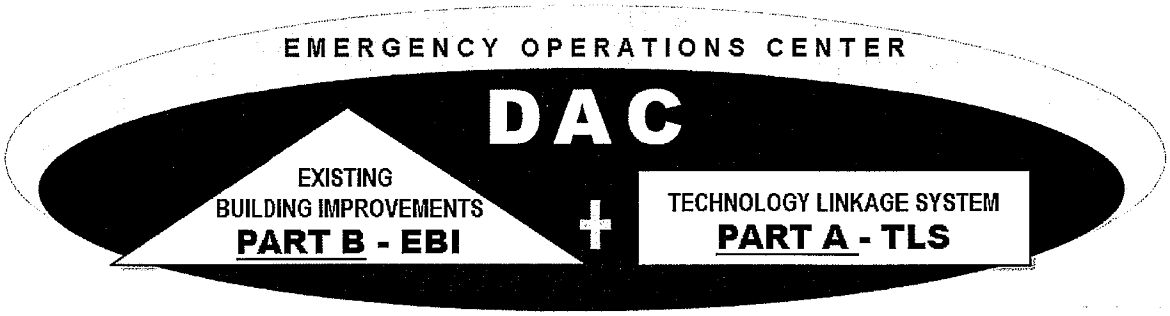


Figure 5-2. DAC Scope Overview.

The SAIC Team reversed the order of our technical approach discussion in order to describe our methodologies more chronologically. Our discussion continues to follow the logic of the RFP; however, we determined that for ease of comprehension and to enhance readability, we will begin our technical discussion with our approach to the PART-B EBI and follow suit with our approach to the PART-A Technology Linkage System.

5.1.1 Understanding of DAC Existing Building Improvements (EBI): <u>PART-B</u>

The SAIC Team understands that the intent of the PART-B EBI is to make the necessary physical structure construction modifications/improvements to the existing OES facility. We understand that PART-B will:

- Require the services of a California licensed general construction contractor and design architecture firm to design/develop the 100% construction design plans/specifications. The contractor will need to perform the necessary demolition, rough-in and finish construction work in order to remove the current curved video wall structure and replace it with a straight wall to support the new video wall system, as well as make tenant improvements to establish the physical DAC layout.

- Require the services of a California licensed electrical contractor and a video wall specialist to design/build, install, and commission a state-of-the-art video wall display and control system situated and supported by the newly constructed physical wall and the necessary infrastructure, networking and electrical support systems. The video system will consist of an array of 12 LCD monitors.

5.1.2 Understanding of DAC PART-A Technology Linkage System (TLS)

This work scope requires the professional services of a qualified prime contractor system integrator with proven experience in implementing security information system technology, tools, and applications as well as integrating data system/sensors for domain awareness/incident management.

The main and critical technical component of the DAC will be the Physical Security Information Management (PSIM) software which will be utilized together with video analytics to efficiently screen and monitor situational awareness data as well as coordinate incident management. The DAC PSIM software will also have the capability to support response capabilities, linking monitoring data with dispatch, as well as the ability to integrate automated access controls at select facilities.

The DAC will offer 24x7 interoperability and coordination of prevention, preparedness, response, recovery, and mitigation efforts through an institutional framework that will establish and enhance new partnerships and coalitions in the region. The DAC will improve regional readiness and response capabilities through information collection and sharing while facilitating a regional Common Operating Picture (COP), as shown in Figure 5-3.

Should a significant transportation security incident or natural disaster occur, responding agencies would convene at the EOC to utilize the DAC and administer the appropriate incident management response. The DAC will feed information and appropriate analysis to the EOC and provide situational awareness information to other regional centers, such as the National Response Center and Intelligence Fusion Centers. The DAC will allow for consolidation of steady-state incident reporting (suspicious activity reports), monitoring of local waterway activity, and criminal activity at key locations, including critical infrastructure and at target zones for focused crime prevention activities.

The DAC will serve as an interface between City, County and State command and control centers and be a primary regional point of contact for the reporting of information from private sector facilities. The DAC will provide for reporting of threat information during heightened Maritime Security (MARSEC) conditions and allow for enhanced presentation and dissemination graphics.

The DAC will serve as a focal point for all-hazard information collection and dissemination within the City and Port of Oakland. Its capabilities will align, integrate, and complement with the multiple security missions of the U.S. Coast Guard, intelligence community, emergency management agencies, other security partners (i.e., UASI), and industry stakeholders to enhance regional readiness and security capabilities.

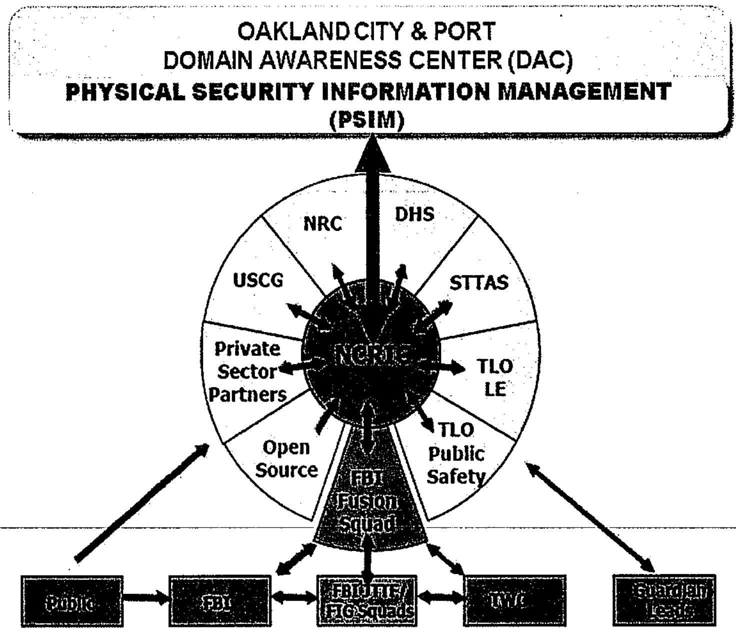


Figure 5-3. Regional COP.

5.1.2.1 Understanding of Critical DAC TLS Project Elements

The Oakland Bay Area and Northern California region currently has wide array of agencies, data systems and deployed fielded sensors that can enhance the DAC's ability to serve as a centralized location for real-time, linked information/sensor feeds to be viewed collectively by the appropriate jurisdictions.

The City and Port have already made a significant investment in deployed technology that can be successfully leveraged to have an immediate impact on improving domain visibility and security control. This will ultimately enhance their effectiveness in coordinating emergency response to an incident. These information systems/sensors will provide valuable data to the DAC for electronic area surveillance monitoring and detection. Integrating and coordinating these technologies is vital to providing a timely and effective response and is critical to the safety of both the emergency response personnel and the citizens of Oakland.

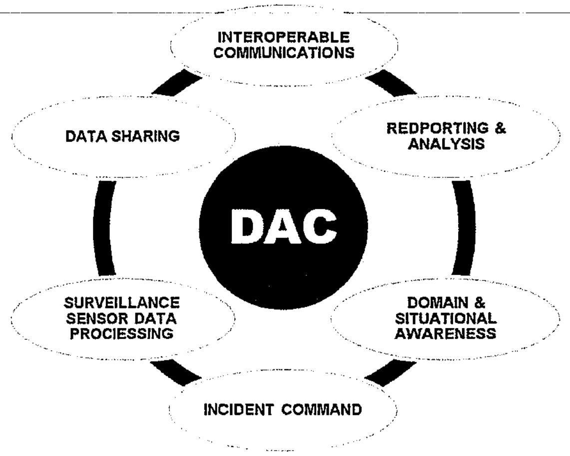


Figure 5-4. DAC Capabilities.

The DAC will provide a focal point for interoperable communications, data-sharing, reporting and analysis, surveillance sensor data processing, domain and situational awareness, and incident command responsiveness.

Figure 5-5 below provides a listing of some of the agencies, data system, and fielded technologies may be integrated into the City/Port DAC to support situational and domain awareness. These components are also delineated following the figure.

[redacted]

Figure 5-5. Listing of systems to be integrated into the DAC.

- Oakland City CCTV Cameras at Target Locations feeding to a GENETEC Omnicast Server
- Oakland City ITS Network Live Video Traffic Surveillance using ITERIS cameras
- Oakland City Sot Spotter System
- Oakland City Computer Aided Dispatch (CAD) and Law Records Management System (LRMS)
- Oakland Port CCTV and IDS to be federated into a GENETEC Server
- Oakland Port View Geospatial Security Mapping System GIS
- Oakland Port Truck Management System (TMS) maintained by SAIC for the Port
- East Bay Smart Corridor Program Traffic Camera Network
- Oakland City Photo Enforcement System leveraging technology by RedFlex
- Oakland City Schools CCTV Cameras
- Oakland City ESRI Mapping
- Bay Area 511 Traffic Monitoring maintained by SAIC for the Bay Area MTC
- OPD ALPR leveraging 3M Federal Signal PIPS technology
- Oakland City Public Safety Intranets
- Oakland City Police AVL
- Oakland City Fire AVL
- USGS Seismic Monitoring
- NOAA National Weather Service Monitoring
- USGS National Automatic Identification System (NAIS) Vessel Tracking
- Northern California Regional Intelligence Center (NCRIC)
- Chemical, Biological, Nuclear, Radiological, and Explosive (CBNRE) Monitoring
- Contra Costa Automated Regional Information Exchange System (ARIES)

Linkage of these systems will be accomplished through fiber optics telecommunications/data lines or the City's supplemental fiber optics network.. Management of the sensor, surveillance, and GIS-based asset/mapping information will be accomplished through the implemented DAC PSIM, coupled with video analytics for surveillance and incident response.

5.1.3 Structured Organization for PART-B EBI and PART-A TLS Delivery

SAIC has assembled and organized a complementary team of talented and qualified experts who deliver unique and specialized capabilities relevant to and vital in meeting the requirements to design/build, implement, commission, maintain/support, and expand the capabilities of the DAC. The following Figure 5-6 depicts how we have structured our SAIC team members to ensure highest quality performance delivery with lowest cost and risk.

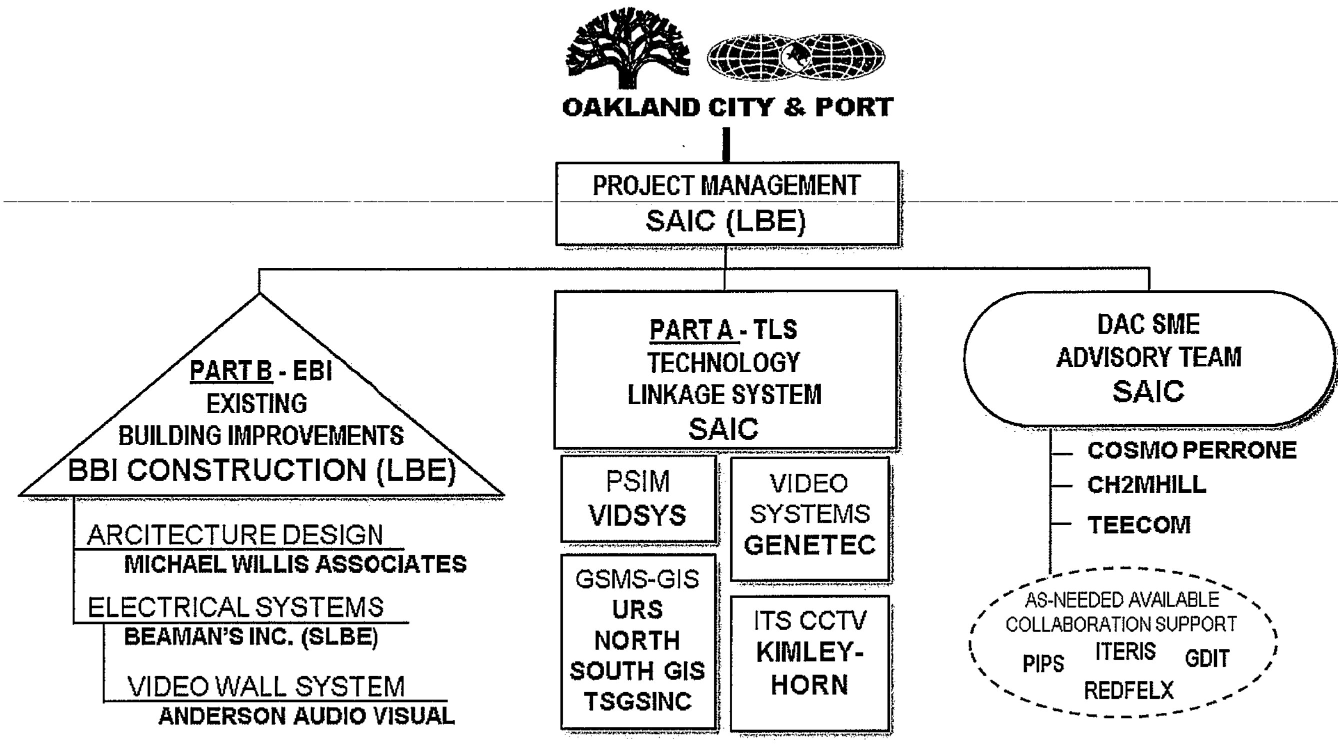


Figure 5-6. SAIC Teaming Structure.

Our team members will provide leadership in the following scope/task elements:

- **Project Management:** SAIC will manage this contract as the prime systems integrator who, through its wholly-owned subsidiary SAIC-Benham, also possesses an active California Class-A General Construction Contractors License (CA Lic#872860). SAIC is also registered as an Oakland Local Business Enterprise (LBE) with an office conveniently located at 1000 Broadway Street in Downtown Oakland, just walking distance from the Oakland EOC where the DAC will be located. Moreover, our SAIC Project Manager, Mr. Taso Zografos, is a Bay Area resident.
- **PART-B EBI:** BBI Construction will lead construction activities together with Michael Willis Architects. They were the original designers/contractor that built the current Oakland EOC where the DAC will reside.
- **PART-A TLS:** SAIC will lead and be supported by VidSys, our PSIM provider; Genetec, our CCTV systems integrator; a URS-North South GIS-TSG Inc. team, supporting integration of the Port GSMS-GIS; and Kimley-Horn, supporting City CCTV and traffic camera systems integration.

The SAIC Team has also organized a **DAC Subject-Matter-Expert (SME) Advisory Team** that brings together experienced individuals with emergency operations expertise to support planning and scoping work efforts, as well as to provide an available pool of as-needed collaborative support personnel standing by ready to assist SAIC on an on-call basis.

5.1.4 Concept and Key Features of the DAC TLS Delivery Approach

SAIC team and our proposed VidSys's PSIM solution can deliver a DAC with capabilities for interoperable communications; data sharing, reporting and analysis; surveillance sensor data processing; and domain and situational awareness for the incident command needs of emergency responders. Our PSIM solution serves as a sound foundation to delivering command and control of the following data systems and/or fielded technologies:

- Port CCTV Genetec SC5.1

- Port Geospatial Security Mapping System (GSMS) GIS
- Port SAIC Truck Management System (developed by and currently maintained by SAIC-Fluensee for the Port)
- City Genetec Omnicast 4.X
- City VIDS System Cameras
- City ShotSpotter
- ESRI Mapping
- Motorola Premier CAD Compliant Interface
- Motorola InfoTrak Compliant Interface
- RedFlex Cameras
- East Bay Smart Corridor Cameras
- NOAA Service
- USGSM Service

Our team understands that the DAC's capabilities and functionality will nonetheless evolve over time, pending the availability and readiness of those systems and technology feeds, as well as other impacting operational priorities, change management impacts, and cost impacts. Given a snapshot of currently available data systems and fielded technology sensors, the diagram below intends to depict the currently envisioned data systems or technologies that we propose to integrate into the DAC TLS.

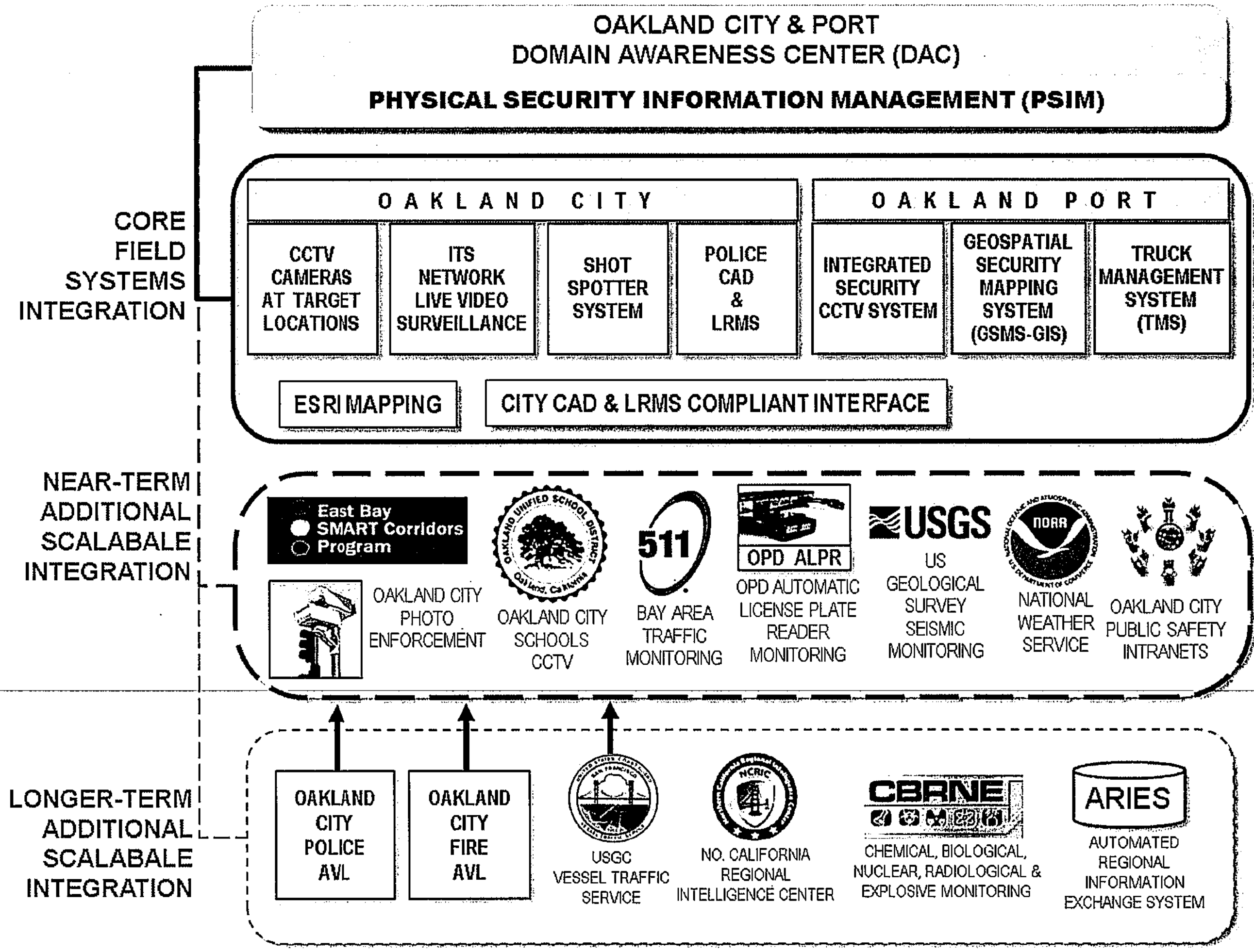


Figure 5-7. DAC Systems Integration Framework.

They are categorized as either:

- **Core Field Integration Systems** – are those data systems and/or technologies which SAIC proposes to integrate into the DAC
- **Possible Near-Term Additional Scalable Core Field Integration Systems** – are those systems/technologies that we would collaborate on with the City-Port for consideration for integration into the DAC in the nearer-term.
- **Future Longer-Term Additional Scalable Field Integration Systems** – are those systems/technologies that we would collaborate on with the City-Port for consideration for integration in the future as part of the DAC Implementation Roadmap.

The following represents what we propose to be Core Field Integration Systems vs. Additional Scalable Future Integration Systems that could be considered and integrated earlier pending many factors.

For **Core Field Integration Systems**, we propose the following:

- Port CCTV Genetec SC5.1
- Port Geospatial Security Mapping System (GSMS) GIS
- Port SAIC Truck Management System (developed by and currently maintained by SAIC-Fluensee for the Port)
- City Genetec Omnicast 4.X
- City VIDS System Cameras
- City ShotSpotter
- ESRI Mapping
- Motorola Premier CAD Compliant Interface
- Motorola InfoTrak Compliant Interface

For **Nearer-Term Additional Scalable Core Integration Systems**, which we may also include for this project pending collaboration and mutually agreeable considerations, are the following:

- RedFlex Cameras
- East Bay Smart Corridor Cameras
- NOAA Service
- USGSM Service
- Bay Area 551 Service (operated and maintained by SAIC for the MTC)
- Oakland City Schools CCTV
- Oakland City Police Department ALPR
- Oakland City Public Safety Intranets

For **Future Longer-Term Additional Scalable Future Integration Systems**, under the currently available budget constraints, we identify as the following:

- Police AVL
- Fire Mobile/AVL

- Integration of alarms to the CAD and RMS systems as required
- USGC Vessel Traffic Monitoring Service
- Northern California Regional Intelligence Center
- Chemical, Biological, Nuclear, Radiological, and Explosive (CBNRE) monitoring
- Automated Regional Information Exchange System (ARIES)

Of these above identified **Future Longer-Term Additional Scalable Future Integration Systems**, we are open to adopting to integrate the Police and Fire AVL and the USGC Vessel Traffic Monitoring Service much sooner, pending collaboration with the City and the Port.

Our proposed DAC-TLS technical approach offers the City and Port the flexibility to consider the additional scalable integration efforts for adoption sooner than may have been anticipated. This is supported by the following basis/substantiations unique to the SAIC Team:

- 3M-Federal Signal –PIPS Technology has communicated to SAIC a positive interest in developing and integrating an interface from the OPD ALPR technology into our proposed PSIM.
- REDFLEX has discussed with SAIC the capabilities and methods by which the current 13-site traffic photo enforcement technology can be leveraged to provide real-time video streaming of the traffic environment.
- SAIC has looked into the methods for integrating with the East Bay SMART Corridor Program, the Oakland City Schools 700+ CCTV camera system, and the Oakland City Public Safety Intranet.
- SAIC is the current prime contractor supporting the Bay Area 511 and has done so for the past 5 years.

5.1.4.1 SAIC Design-Build Methodology and Guiding Principles

The SAIC Team will apply proven systems engineering processes to achieve the Oakland City and Port Joint DAC goals, objectives and requirements via a robust capability to plan, execute, and control total design and engineering efforts. These processes are based on principles and best practices of the Software Engineering Institute's (SEI's) Capability Maturity Model (CMM®) and Capability Maturity Model Integration (CMMI®) models and on engineering processes defined by ISO: 9000. To ensure performance and product quality, our framework offers a phased approach based on our proven EngineeringEdge™ System Engineering and Integration (SE&I) methodology.

Our work is grounded in continuous process improvement to leverage our lessons learned from other projects. The following highlights some of our key guiding principles that will drive a successful design-build project delivery:

- ✓ **Technology Agnostic** - SAIC's business success as systems integrator is founded on being technology agnostic. While we have expansive experience in deploying PSIM solutions, we don't align ourselves with a favorite application or technology.
- ✓ **Sustained and Comprehensive Life-Cycle Support** - SAIC has the financial strength and stability to ensure that we will be there to deliver sustained and comprehensive support to our customers over the entire project life cycle.
- ✓ **Adherence to SAIC EngineeringEdge™ SE&I Methodology** – The SAIC EngineeringEdge™ methodology defines a set of inputs that drive both technical and managerial processes to produce outputs required for any significant systems engineering and integration effort. This consistent EngineeringEdge™ approach is the essence of how we perform our daily work.

- ✓ **Phased Task Order Delivery Process** – The SAIC Team has a deep understanding and delivery execution experience in time-phased task project delivery, and more specifically projects implemented as "design-build". Our structured work plan supports a bottoms-up resource loaded network sequencing of work activity steps to ensure highest quality and cost effective completion of deliverables. Our common approach to defining preparatory artifacts at the end of each task will streamline transitions and to align scope planning with budgets.
- ✓ **Structured and Flexible Work Plan** – SAIC Team has defined a structured work plan to ensure the two major effort components to design-build the DAC (PART-B EBI and PART-A TLS) work together as an "Integrated Product Delivery." Our structured work plan is also built in "modular components" to accommodate asynchronous delivery of the DAC work efforts, mitigating progress impact by shielding the efforts on side from affecting the other.

5.1.4.2 *Our Recommended PSIM Solution*

SAIC has a broad range of experience in the implementation of PSIM solutions to provide domain and situational awareness in support of incident identification and response management. To that extent, we have knowledge and experience with the various commercial off-the-shelf (COTS) PSIM solutions and SAIC has received quotes from the following PSIM vendors specifically for this project:

- VidSys
- The Mariner Group – Command Bridge
- NICE Situator
- PROXIMEX

OAKLAND CITY & PORT
DOMAIN AWARENESS CENTER (DAC)
VidSys PSIM

Figure 5-8. The SAIC Team has chosen VidSys as the proposed PSIM solution for the DAC.

Based on our experience with the above PSIM vendor solutions, our evaluation of their respective proposals/quotes, and the requirements set forth by the RFP, the SAIC Team has determined and recommends/proposes herein the **VidSys PSIM** solution platform for the Oakland City-Port Joint DAC. We believe that the web-based user-interface, collaborative environment and expandable central system offered by the VidSys PSIM solution provide the Oakland City-Port Joint DAC the functionality and flexibility desired.

Should the City-Port have an interest or preference to have SAIC re-consider our recommended PSIM solution selection, SAIC offers the City-Port the flexibility to exercise an option to jointly collaborate post-award during the planning and scoping period of the project, to go through our evaluation process again in determining and selecting the PSIM solution for the DAC. This SAIC Team proposal is based on the design/build, implementation of the VIDSYS PSIM for the DAC.

5.2 Potential Problems and Possible Solutions

SAIC has assembled an experienced team that is uniquely qualified to support the design-build, implement, commission, and maintenance of the DAC for the City and Port of Oakland. SAIC and its team members have previously performed similar work successfully. Our key personnel possess the necessary technical understanding, capabilities, and talent to effectively execute this project and are immediately available to begin work upon contract award. The SAIC Team's depth and breadth of experience enables us to provide the City-Port with the lowest risk, experience-driven solution available.

Successful project delivery is predicated on the project team's ability to make early identification and assessment of risks and to outline strategies to mitigate those risks from impacting the project. System performance analysis and problem solving are another important feature of SAIC's broad portfolio of technical engineering services using well-defined, standards-based processes to determine root causes for problems that may impact progress for the delivery of the DAC. SAIC understands that even the best of project implementation plans carry some level of inherent risk due to matters outside of the control of the contractor, system integrator, customer, or other stakeholders.

For that reason, SAIC employs a standard practice of working with team members to discuss, identify, and encapsulate risks that may impact delivery progress. These identified risks are then entered into a risk register and further classified in regards to the level of impact, the probability of occurrence, and an assessment of potential post-impact recovery or remedial efforts. Once all of that has been formalized, the team then works together to identify risk mitigation methods or practices by which to reduce the probability of risk occurrence to the greatest extent possible.

In Table 5-1, the SAIC Team identifies some initial potential technical risks as well as offers our strategies for mitigating these potential technical risks to minimize impact to project delivery.

Table 5-1. Potential Risks and SAIC Mitigation Strategies

TECHNICAL RISK	SAIC TEAM MITIGATION STRATEGY
Unexpected and repetitive delays in meeting delivery schedule work efforts, deliverables and/or project milestones on time and at the service quality expected to meet industry-standard project delivery performance metrics and outcomes.	SAIC will adhere to sound project management techniques and frequent communication. Our project management approach encompasses activities necessary to plan, execute, control, and report on project activities and to perform cost, schedule, risk, and technical management of all DAC services, functions, and tasks, with an emphasis on excellence in execution.
Inconsistent, unclear, and/or vague design - build requirements, actual or derived, that may result in gaps or voids in component or functionality delivery or impacts to project outcomes, goals and objectives.	SAIC will actively engage the customer and stakeholders in a thorough and comprehensive effort to scrub requirements both actual and derived and use iterative design reviews to clearly detail critical features and product deliverables, inputs and outcomes, dependencies.
None or little collaboration/involvement of the DAC user community during the planning, scoping of requirements, and TLS design efforts, especially concerning the DAC TLS Graphical User Display (GUI) design activities.	SAIC leverages technology to engage users and stakeholders through the use of frequent teleconference project updates and webinars for remote and efficient presentation of user interface plans and designs, as well as GUI displays for early feedback and design acceptance
Lack of coordination or involvement of the DAC TLS project stakeholders or other customer technology support vendors maintaining the data systems or technology sensors whose expertise is vital to the integration of data systems or field sensor feeds with the DAC TLS.	SAIC has already made progress on mitigating this risk by reaching out to stakeholders and existing data center and technology sensor suppliers and or system maintainers, and during the project, the SAIC Project Manager proposes to establish a stakeholder working group to discuss ways in which they can participate in the planning, designing, and implementation processes.

TECHNICAL RISK	SAIC TEAM MITIGATION STRATEGY
Unexpected or changes in conditions impacting a rigid project implementation plan and schedule work effort resulting in delivery inefficiencies due to inflexibility to adapt a more effective process or higher quality outcome.	SAIC's approach to technical delivery is based on a detailed "bottoms-up" work breakdown structure that allows for modular assembly of individuals work packets which allows for the greatest flexibility allowing our implementation plan to adopt changing conditions for optimized delivery.
Proof-Of-Concept design that only addresses the near-term integration end points and postpones or defers efforts to investigate the future scalable end points.	SAIC's approach to the POC is to deliver detailed specifications for the near-term deliver objectives but also provide the same spec. detail for any envisioned future scalable integration activity or end point.
Prime contractors capability and experience to address and manage two uniquely different disciplines of work scope 1) being EBI infrastructure construction, and 2) TLS IT systems design-build work and the complexities of getting both deliveries to occur in a seamless integrated manner.	SAIC, through our subsidiary Benham, holds an active California contractor's license as does our partner BBI Construction – so together we double the qualification needed to deliver the EBI objectives. SAIC is also unique in that we are globally recognized systems integrator with the relevant past experience in implementing PSIMs for incident domain awareness.

As a routine and on-going process, the SAIC Team will address Oakland DAC project risk through early identification of potential problems, rigorous assessment of impacts and alternatives, and strategies for rapid mitigation. Risk management is the direct responsibility of our Project Manager (PM), and we empower each member of the SAIC Team to identify and resolve technical issues before they escalate into problems requiring formal risk mitigation procedures. A Risk Management Plan will be included in our delivered project implementation plan.

Once the DAC is implemented and operational, SAIC will use proactive monitoring and early issue detection techniques to ensure that application availability meets or exceeds the 99.5% of performance measurement targets. Detection of trends indicating a degradation of performance and/or reliability will result in a preventive action plan designed to mitigate issues before they become catastrophic. To provide a solid base for risk mitigation, all solution designs and recommendations will always consider system resiliency, operational continuity, failover, and recovery factors.

5.3 Special Features/Resources for Successful Project Completion

SAIC offers the following key features of our solution and technical delivery approach in Table 5-2. We have linked our technical solution closely with DAC core project goals, offering the City and Port the greatest core functionality and expansion under the highest quality/lowest risk design-build implementation, on schedule and within budget.

The following highlights our approach to a successful DAC project completion:

- Work collaboratively with the City-Port and other stakeholders to complete the validation of CONOPS and TLS requirements within 5 weeks from project start
- During the Design Proof-of-Concept (POC) effort, SAIC proposes to implement our PSIM solution in a test environment and validate the network requirements by establishing a baseline interface with a representative element for each grouping of the fielded data system sources and sensor technologies
- During the PSIM implementation work phase, SAIC will follow a structured work plan to systematically make network infrastructure improvements based on outcomes from the Design POC
- Design-build, deploy, integrate, test, and implement the VIDSYS PSIM in a flexible manner that allows for optimization of integration elements based on their availability
- During the implementation and system integration work phase, SAIC will standardize the DAC network access and mediums to allow for information exchange to various endpoints
- SAIC will implement a standardized process for the exchange of information or data and/or video file transfers and will apply methodology, process, and tools for configuration and change management support to ensure newly created images, cameras and applicable security assets implemented within the DAC's viewing layer(s).
- SAIC proposed VIDSYS PSIM platform has a proven plug-and-play working fully functional interface that is compatible with the Motorola Computer Aided Dispatch and Law Records Management System
- SAIC's proposed VIDSYS PSIM platform provides a Motorola compatible CAD interface that will allow the DAC to offer bi-directional communication to first responders as well as other Emergency Operations Centers within the City (e.g. OPD, OFD, EOC, etc...)
- SAIC proposes a robust, integrated, and work-flow oriented enterprise ticket management system to support the capture, response, and investigation of an incident
- SAIC proposes to design accurate, timely and complete information propagation of each TLS system into the DAC
- SAIC will deliver management and user training
- SAIC will provide 24 months of support and maintenance with an option for an extended 3 years of additional support and maintenance

SAIC proposes to design-build-implement VidSys's RiskShield™ PSIM software which is a web-based, open-architecture platform that integrates a wide spectrum of security, emergency response and related systems into a consistent and intuitive user interface. RiskShield™ enables control center operators, supervisors, managers and response teams to work efficiently and collaboratively from a common frame of reference when responding to security and life safety situations due to its ability to correlate and present meaningful information from data provided by different sources.

Key features of our proposed PSIM RiskShield™ are highlighted as follows:

- "Out of the box" support for a broad range of leading industry CCTV, access control, intercom, perimeter intrusion detection, license plate recognition systems, radar, fire, duress and other systems. By integrating many systems into a standardized user interface, RiskShield™ allows personnel to concentrate on their operational tasks rather than managing a variety of sensors, cameras and other devices.
- Advanced capabilities to filter, prioritize and correlate data from multiple sources and relate it to the current operating context to present a common operational picture to all personnel, teams and organizations involved in response operations. RiskShield™ allows response teams to manage situations rather than individual events.
- Automated action response actions to assist operations personnel in performing response tasks efficiently and in compliance with approved operational policies and procedures.
- Web architecture that readily supports personnel – independent of their physical locations - without complex software installation and maintenance. RiskShield™ can be used at fixed locations, such as operations control centers and on mobile devices, including smart phones and tablets. RiskShield™'s adherence to industry standards ensures its support for future new technology and its compliance with information assurance security standards.
- Scalability to support expansions in geographic and operational scope in addition to increased quantities of cameras, sensors, integrated systems and users. RiskShield™'s architecture is inherently scalable from small to arbitrarily large applications. RiskShield™'s ability to ingest, process and present information is limited only by the hardware platforms and network environments where it is installed.
- Reliable and secure operations. RiskShield™ is fully tested for and compatible with leading high-availability server products including virtualized servers, producing economical deployments with near 100% operational availability.

SAIC seeks to deliver a DAC to provide a focal point for interoperable communications; data sharing, reporting and analysis; surveillance sensor data processing and domain and situational awareness for the incident command needs of Police and Fire Dispatch, first responders in the field, and City and Port Emergency Operations Centers. Our proposed PSIM RiskShield™ system integration can provide Command and Control of the following systems:

- Genetec SC5.1
- RedFlex Cameras
- Genetec Omnicast 4.X
- ShotSpotter
- VIDS System Cameras
- East Bay Smart Corridor Cameras
- SAIC Truck Management System
- Motorola Premier CAD
- Motorola InfoTrak
- ESRI Mapping
- NOAA Service
- USGSM Service

The SAIC Team's design-build-implementation of the PSIM RiskShield™ will provide the City and Port of Oakland and DAC stakeholders an extensively customizable directory for users, sites, and systems under the following to be deployed system configurations:

- 20 VidSys user/operator licenses
- 10 VidSys lite/mobile licenses
- 300 VidSys camera licenses
- 500 VidSys two-way sensor/device/video analytic licenses
- 8 VidSys standard connector licenses
- 3 VidSys complex connector licenses

5.4 DAC-TLS Proof-of-Concept Architecture Design Framework

The following section describes the SAIC Team's understanding of Oakland's opportunities for technology linkage. A system architecture diagram has been developed (Figure 5-10) to show our understanding of the Oakland DAC-TLS network of systems available for integration and describes the following design details:

- ✓ How the sensor systems integrate to the DAC-TLS network;
- ✓ The anticipated functionality available from each integrated system;
- ✓ Where the new systems fit into the architecture; and
- ✓ Where software integration interfaces will need to be provided.

5.4.1 Architecture

The following system architecture diagram, as shown in Figure 5-9 and Figure 5-10, is the SAIC Team's recommended DAC system, pending collaboration with the City, Port, and other stakeholders. It shows the technology linkage concept in greater detail and provides a better understanding of how the linkage will occur as well as the new capabilities that will be gained though the integration. This concept will be vetted out during the planning and scoping phase of the PART-A work scope, but in order to discuss system components, we have introduced the architecture early in the technical approach.

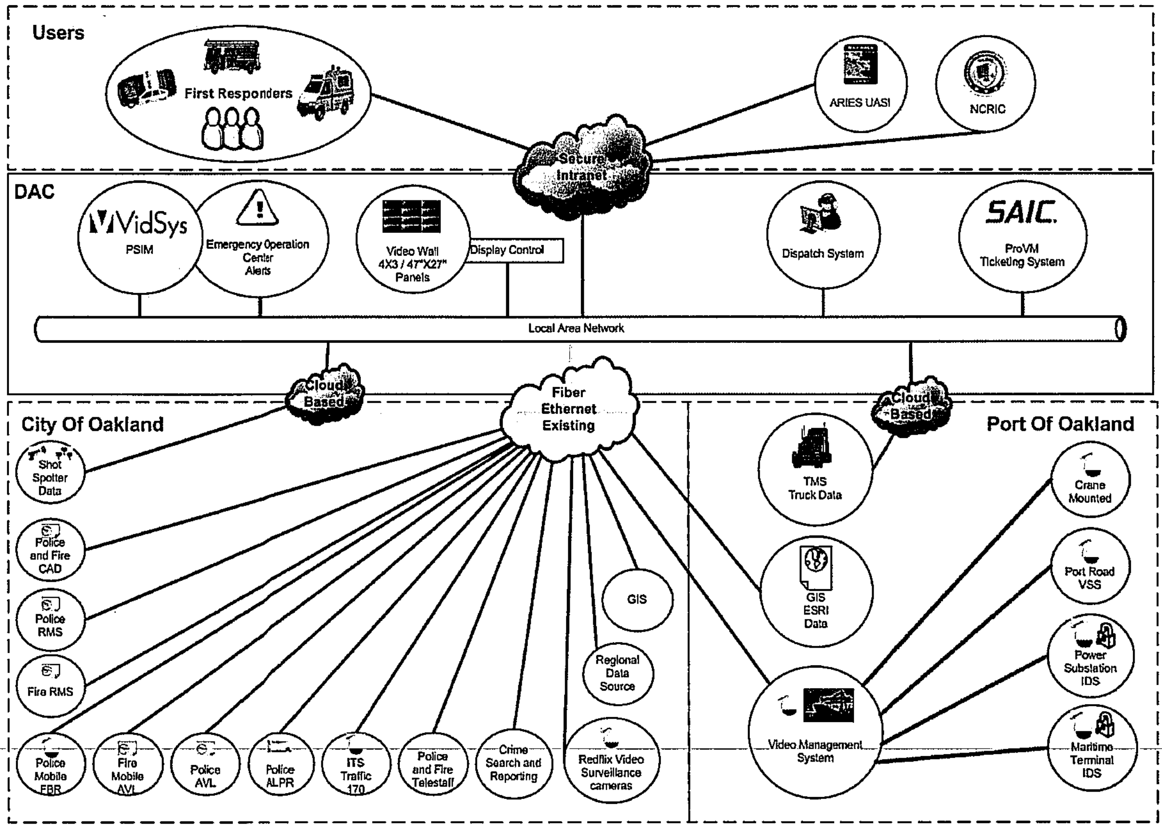
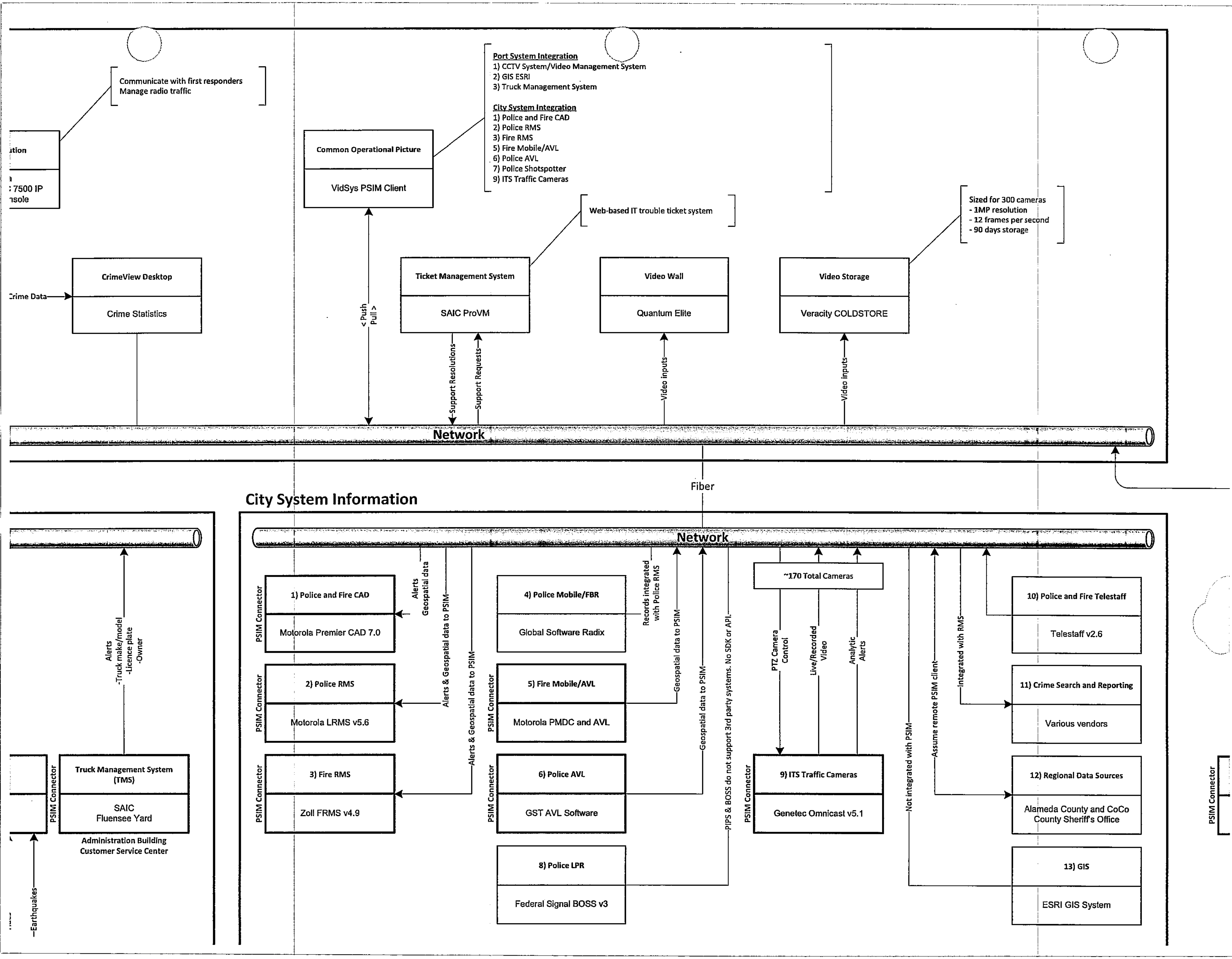


Figure 5-9. Identification of Systems to be Integrated.

Systems that are network accessible through either the Port or the City will be integrated to the PSIM over the fiber optic network. Systems that are not already on the network will require permanent VPN connections to be established between the DAC and the collaborating organization. Once the linkage systems are network accessible, the associated data and functionality will be integrated into the PSIM through the use of an application programming interface (API) or software development kit (SDK) provided by the linkage system manufacturer.


Communicate with first responders
Manage radio traffic
ation
7500 IP
nsole
Port System Integration
1) CCTV System/Video Management System
2) GIS ESRI
3) Truck Management System
City System Integration
1) Police and Fire CAD
2) Police RMS
3) Fire RMS
5) Fire Mobile/AVL
6) Police AVL
7) Police Shotspotter
9) ITS Traffic Cameras
Common Operational Picture
VidSys PSIM Client
Web-based IT trouble ticket system
Sized for 300 cameras
- 1MP resolution
- 12 frames per second
- 90 days storage
CrimeView Desktop
Crime Statistics
Crime Data
< Push
Pull >
Ticket Management System
SAIC ProVM
Video Wall
Quantum Elite
Video Storage
Veracity COLDSTORE
Support Resolutions
Support Requests
Video Inputs
Video Inputs
Network
Fiber
City System Information
Network
Alerts
-Truck make/model
-Licence plate
-Owner
PSIM Connector
Truck Management System (TMS)
SAIC
Fluensee Yard
Administration Building
Customer Service Center
Earthquakes
Alerts
Geospatial data
Alerts & Geospatial data to PSIM
Alerts & Geospatial data to PSIM
PSIM Connector
1) Police and Fire CAD
Motorola Premier CAD 7.0
PSIM Connector
2) Police RMS
Motorola LRMS v5.6
PSIM Connector
3) Fire RMS
Zoll FRMS v4.9
4) Police Mobile/FBR
Global Software Radix
Records integrated with Police RMS
Geospatial data to PSIM
Geospatial data to PSIM
PSIM Connector
5) Fire Mobile/AVL
Motorola PMDC and AVL
PSIM Connector
6) Police AVL
GST AVL Software
8) Police LPR
Federal Signal BOSS v3
PIPS & BOSS do not support 3rd party systems. No SDK or API.
~170 Total Cameras
PTZ Camera Control
Live/Recorded Video
Analytic Alerts
PSIM Connector
9) ITS Traffic Cameras
Genetec Omnicast v5.1
Not integrated with PSIM
Assume remote PSIM client
Integrated with RMS
10) Police and Fire Telestaff
Telestaff v2.6
11) Crime Search and Reporting
Various vendors
12) Regional Data Sources
Alameda County and CoCo County Sheriff's Office
13) GIS
ESRI GIS System
PSIM Connector

The following discussion walks through the major components of the System Architecture diagram and further describes existing systems that will be integrated with the DAC.

Port of Oakland

The lower left box in Figure 5-10 represents systems requiring technology linkage within the Port of Oakland. These systems include the crane-mounted camera system, port road VSS and power substation IDS, and marine terminal IDS – all three of which will become part of the Port's "Integrated System," controlled by the Genetec Security Center. Other systems within the port include the Geospatial Security Mapping System (GSMS) ESRI mapping system and the Truck Management System. The data and functionality of each of these systems will be integrated with the VidSys PSIM over the fiber network connection to the DAC.

City of Oakland

The lower right box in Figure 5-10 represents systems requiring technology linkage within the City of Oakland. These systems include four different Intelligent Transportation Systems (ITS) which provide video and alerts, automatic license plate readers (ALPR), Secure our Schools (SOS) CCTV, and ShotSpotter gunshot detection system. SAIC is proposing to integrate these systems with the exception of the ALPR system and the SOS CCTV system. SAIC contacted PIPS Technologies to investigate the possibility of integrating their ALPR system and was told that their system currently does not support third party integration. SAIC is not including the SOS CCTV system as part of the current Technology Linkage plan due to the large number of cameras. We prefer to discuss this linkage with Oakland to better understand the requirements and better focus the DAC budget to a subset rather than the total number of cameras.

Domain Awareness Center

The DAC is where SAIC will install and integrate the new DAC-TLS systems for Oakland. Systems include the Motorola dispatch console, VidSys PSIM, SAIC ProVM ticket management system, and the Quantum Elite video wall. The Motorola dispatch system will integrate with the existing Motorola Premier CAD and Motorola Infotrak law records management system. SAIC envisions the VidSys PSIM integrating with the Motorola systems by sending alerts to notify the dispatch operator of incidents that require police involvement. The VidSys PSIM will provide the COP for a security officer to manage the City's security systems. The operator's workstation will be connected to the video wall which will allow the operator to display maps and video as well as manage an incident as part of a joint collaborative effort between the Port and City. The SAIC Team also proposes to integrate the existing WebEOC/NC4 system with the VidSys PSIM for the purposes of sharing additional alerts.

Collaboration

The DAC Technology Linkage document mentions a linkage with the Northern California Regional Intelligence Center (NCRIC) and the Contra Costa County Regional Data Sharing Portal (ARIES UASI). SAIC assumes that these systems represent data portals for collaboration with the DAC-TLS. The SAIC Team envisions that this collaborative environment will consist of these centers having the capability to access the VidSys PSIM and collaborate with Oakland when managing a large-scale incident.

Table 5-2 summarizes the functionality that is achievable through each technology linkage.

Table 5-2. Technology Linkage Functionality Summary Table

Linkage No.	Technology Linkage Description	Functionality Type			
		Live Video	Recorded Video	Alarms	Geospatial Data
1	Port's "Integrated System"	Yes	Yes	Yes	Yes
2	Geospatial Security Mapping System (GSMS)	No	No	No	Yes
3	Truck Management System (TMS)	No	No	Yes	Yes
4	ITS: Outdoor PTZ cameras	Yes	Yes	No	No
5	ITS: Oakland VIDS cameras	Yes	No	Yes	No
6	ITS: East Bay Smart Corridor (EBSC) cameras	Yes	Unknown	No	No
7	ITS: Redflex cameras	Likely	Unknown	Yes	No
8	Automatic License Plate Reader (ALPR)	No	No	Likely	Likely
9	Secure Our Schools CCTV Project cameras	Yes	Yes	No	No
10	ShotSpotter	No	No	Yes	Yes
11	Computer Aided Dispatch (CAD)	No	No	Yes	Yes
12	Case/Records Management System	No	No	Yes	Yes
13	CrimeView Desktop	No	No	No	Yes
14	WebEOC/NC4	No	No	No	No
15	NCRIC	Yes	Yes	Yes	Yes
16	ARIES UASI	Yes	Yes	Yes	Yes

5.4.2 Description of Anticipated Improvements

5.3.2.1 Infrastructure and Hardware

The SAIC Team proposes to procure the hardware to support the DAC-TLS implementation. Under this section we describe the hardware components and their application use. SAIC team understands that the city of Oakland has Hewlett Packard (HP) hardware deployed for most of the systems to be integrated to the PSIM platform. Our solution is based on Dell hardware; however, SAIC is technology agnostic and open to HP and other hardware solutions that the City prefers in compliance with application needs and specifications. The proposed hardware is selected based on the City-Port systems criteria's to meet or exceed technical, functional and performance requirements.

The following figure is a visualization of the infrastructure and hardware components of the DAC.

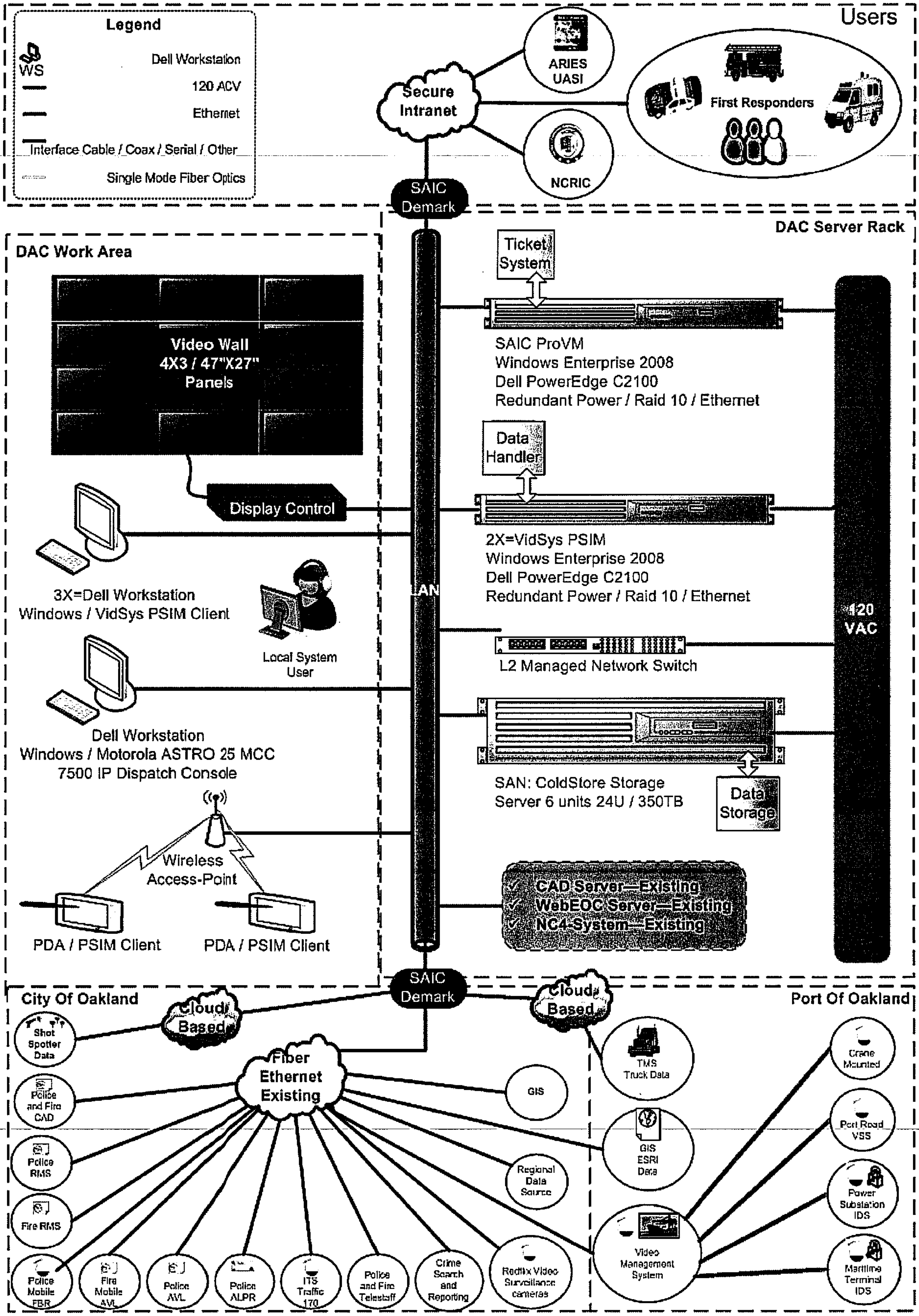


Figure 5-11. DAC Infrastructure and Hardware

Enterprise Application Servers

SAIC proposes Dell PowerEdge C2100 enterprise windows application servers for the development and production of VidSys/PSIM system and the SAIC ticketing system. The selected Dell PE C2100 is configured with the primary requirement of reliability and availability as the driving force. The servers are equipped with dual Intel Central Processing Units (CPU), dual hot swappable power supplies, Raid10 with data storage mirroring and backup capability to increase system reliability and availability. These servers are designed for ease of maintenance with tool-less chassis and modular hardware components to progress repair time therefore improving overall Mean Time to Repair (MTTR) response time.

Workstations

SAIC's proposed Windows desktops are Dell Precision T5600 models. These are the most robust workstations in the market with high speed processing power and high Random Access Memory (RAM) to allow operators to simultaneously work on multiple applications. The Dell Precision workstation has been configured with cutting edge and latest hardware components available in the market to serve users with smooth operation of video management clients installed for the VidSys PSIM system. SAIC will finalize configuration of workstations during the design phase, but based on our understanding of the system at this stage these workstations will meet technical, functional and most decisively performance requirements.

Cisco Switch

The Cisco Catalyst 2960 series managed network switch is proposed to deliver efficient and a cost-effective data communication environment to the DAC PSIM system. The proposed switch is configured with 48 ports to support current and future system needs. It offers high performance and robust communications between IP devices for high speed data. SAIC engineering selected the best communication median between the PSIM and the field data source subsystems which are designed to upload high volumes of video data reliability and near real time.

UPS

SAIC engineering proposes a rack mounted smart Uninterrupted Power Supply (UPS) to be installed in the server rack. The APC MA510 is a proven backup power source used by SAIC on many other deployments, one such case that is of similar scale is the Maryland Bridge Security Project implemented successfully by SAIC. This high-density UPS provided by APC offer a true double-conversion online power protection for servers. It is configured by SAIC to support the power load in the server rack cabinet for a truly uninterrupted power to servers during emergencies. The UPS adds an additional layer of reliability to the equipment installed in the rack and allows for servers to be managed flawlessly during power outages.

Cabinet

The server rack cabinet is a 42U, 19" industry standard to support the proposed hardware required to be installed in the cabinet. It comes with black finish to match the existing cabinets at the DAC server room and most importantly equipped with steel mesh doors for air circulation to help dissipate heat from the servers.

Video Wall

Video wall hardware descriptions are covered in the discussion provided in Section 5.7.3 PART B of this proposal.

5.3.2.3 Software

SAIC will deliver the VidSys PSIM software and connectors to Oakland. A full description of the VidSys PSIM software application is described in section 5.5. Section 5.5.2 provides a full description of the software connectors that will be delivered.

5.5 PSIM Proof-of-Concept Implementation Framework

5.5.1 Overview of PSIM Systems

In response to this RFP, the SAIC Team has conducted a scan of feasible and customizable PSIM COTS software available today to minimize risk to the City-Port. We received quotes from the following PSIM vendors specifically for this project based on our broad experience in the implementation of PSIM solutions in support of incident identification and response management, as we have conducted similar work for the [redacted]

- VidSys
- The Mariner Group – Command Bridge
- NICE Situator
- PROXIMEX

Based on our experience with the above PSIM vendor solutions, our evaluation of their respective proposals/quotes, and the requirements set forth by the RFP, the SAIC Team recommends/proposes herein the **VidSys PSIM** solution platform for the Oakland City-Port Joint DAC. We believe that the web-based user-interface, collaborative environment and expandable central system offered by the VidSys PSIM solution provide the Oakland City-Port Joint DAC the functionality and flexibility desired.

Should the City-Port have an interest or preference to have SAIC re-consider our recommended PSIM solution selection, SAIC offers the City-Port the flexibility to exercise an option to jointly collaborate post-award during the planning and scoping period of the project, to go through our evaluation process again in determining and selecting the PSIM solution for the DAC. This SAIC Team proposal is based on the design/build, implementation of the VIDSYS PSIM for the DAC.

5.5.2 Factors Considered in Evaluation of VidSys

The following factors were considered in the evaluation of VidSys as a suitable PSIM solution for the DAC system:

- ✓ Scalability and versatility;
- ✓ Support and maintenance responsiveness;
- ✓ Robust toolsets;
- ✓ Expansive selection of integration endpoints;
- ✓ Overall system life cycle cost;
- ✓ Hardware and software environment;
- ✓ Development standards;
- ✓ DAC-TLS system requirements;
- ✓ Current and anticipated data volumes;
- ✓ System performance requirements;
- ✓ Access requirements for system users; and
- ✓ Application maintainability.

VidSys outperformed the three other solution vendors in most factor categories. Moreover, the VidSys solution recently replaced a different PSIM vendor system in [redacted] has been successfully operating for over a year.

5.5.3 VidSys Solution and Architecture

VidSys is a leading provider of PSIM software and the only software company that provides truly collaborative situational awareness. Founded in 2005, VidSys pioneered PSIM applications. Today they provide an award-winning software platform to a multitude of public sector and corporate clients worldwide.

The VidSys PSIM software continuously fuses, instantly correlates, and effectively converts vast amounts of data into meaningful and actionable information gathered from virtually any type, brand or generation of physical security system or sensor – and from many other networked management applications. Deployments often integrate large numbers of security cameras, video recorders, access control systems, intruder detection systems and fire alarms, Computer Aided Dispatch (CAD) systems, bollards, and other more exotic or specialized sensors and applications. VidSys provides a single-view security operations platform for visualization – including images in 3-D – and powerful automated incident management tools. These automated tools support safe, effective and timely resolution of events and alarms *and* management of more complex incidents that involve multiple simultaneous alarms at one or more locations. As a secure web-based solution, the VidSys platform allows operators easily to manage assets for a single facility, a large campus or multiple locations dispersed across a city or around the globe. With a true web-based and open architecture, the VidSys platform is also fully enabled for mobile users. This allows decision makers from a single organization or multiple entities to collaborate real-time and to share time-sensitive, actionable information both with executives and incident responders *via* mobile devices.

If selected, VidSys will provide the integration software platform and professional services to support the City-Port DAC and the SAIC Team in a proof-of-concept. They are an integral team member for the requirements gathering and deployment tasks identified by the City-Port. Through the SAIC Team's experience in combining market-specific subject matter expertise and scalable software technology, VidSys will support the DAC with the following:

- Installation and configuration of RiskShield™ PSIM software.
- Overall operational efficiency by enabling seamless integration of disparate security systems to a single, universal management control point.
- Unlimited scalability and vendor independence allowing for best-of-breed selections for both present and future upgrades.
- Security standardization via a prescriptive architecture to achieve enhanced and immediate response capabilities.
- Real-time situational awareness through the correlation of multiple data sources and visual confirmation.
- Video sharing and information sharing capability with designated stakeholders, as required.

VidSys offers a web-based PSIM client user interface, a collaborative environment, and an integrated and expandable central system. By using PSIM integration, all systems can be viewed and controlled from one single interface, with integration capabilities to other Oakland systems, other state systems, and statewide and future systems. The use of commercial off-the-shelf products (COTS) ensures market adaptability. VidSys has designed RiskShield™ and VidShield™ architectures for easily adaptability in the customer environment. Our focus extends across the entire process of diagnosing, verifying, resolving and tracking situations. Other solutions have given minimal attention to the first two items and, as a result, do not have a simple solution for quick integration of new devices, fast diagnosis of situations, quick adaptation to the user's environment to reduce the number of false alarms or the ability to put the appropriate information in front of the user to quickly verify the situation. Instead they have focused on only setting up policies and rules for managing situations, something VidSys also provides.

The following table summarizes some of the key benefits of the VidSys Solution:

Table 5-3. Key Benefits to VidSys PSIM Solution

Feature	Benefits
Open Platform	Provides integration with virtually any known types of security systems and devices. It also supports third party systems such as building management, access controls and other sensors and systems.
Dynamic Geospatial Mapping	Enables precise location mapping and display of situations, people and alarms for fixed and mobile devices, and displays location data supporting incidents in real time for each specific situation or even globally across all situations.
Standardized API's and SDKs	Designed with a set of web services that adhere to standardized, open interfaces, simplifying integration with most physical security devices.
Rules Engine	Provides intelligent correlation of data from various systems, including time and geography, in order automatically to identify situations and then persistently update those situations as events unfold.
Automated Presentation of Standard Operations Procedures	When any situation arises, the VidSys software presents standard operating procedures to the operations center operator along with the information, devices and contact information required for resolution – all within a single user interface.
Modular Platform	Provides dynamic adaptation to changes in situations, devices, configurations, policies and reporting while the system is running. Also supports a distributed architecture of all these for extraordinary transparency.
Browser-based Web Interface	Enables easy access and collaboration among organizations and personnel, also supports mobile and operations center users – across town or around the world.
Dynamic Reporting	Gathers, records, and maintains all information (alarms, video, audio and so on), responses and results into a single folder for policy compliance monitoring, investigative support or post-situation analysis and training.
Expandability and Extensibility	The specified PSIM product has expansion and extension capabilities beyond what we believe would be required by Oakland in the next five years or beyond. Maintenance will provide updated software versions. Expansion is normally achieved without the need to reinvest in additional head end elements.
Mobile Data Sharing	Facilitates real-time sharing of incident data and images between the operations center, the security staff and senior management.

5.5.3.1 Architecture

The VidSys system is based on the **Open PSIM Platform**, an open software architecture that enables organizations to leverage existing or newly deployed networks of physical and virtual security and surveillance assets by integrating them into a single seamless infrastructure. It integrates, manages and correlates massive amounts of data collected from a wide array of detection, monitoring, and control systems or video sources. The unique hybrid architecture utilizes both analog and digital technologies. Users can leverage their entire surveillance network from a single console without the need to understand the underlying technology, enabling them to coordinate swift responses to critical situations.

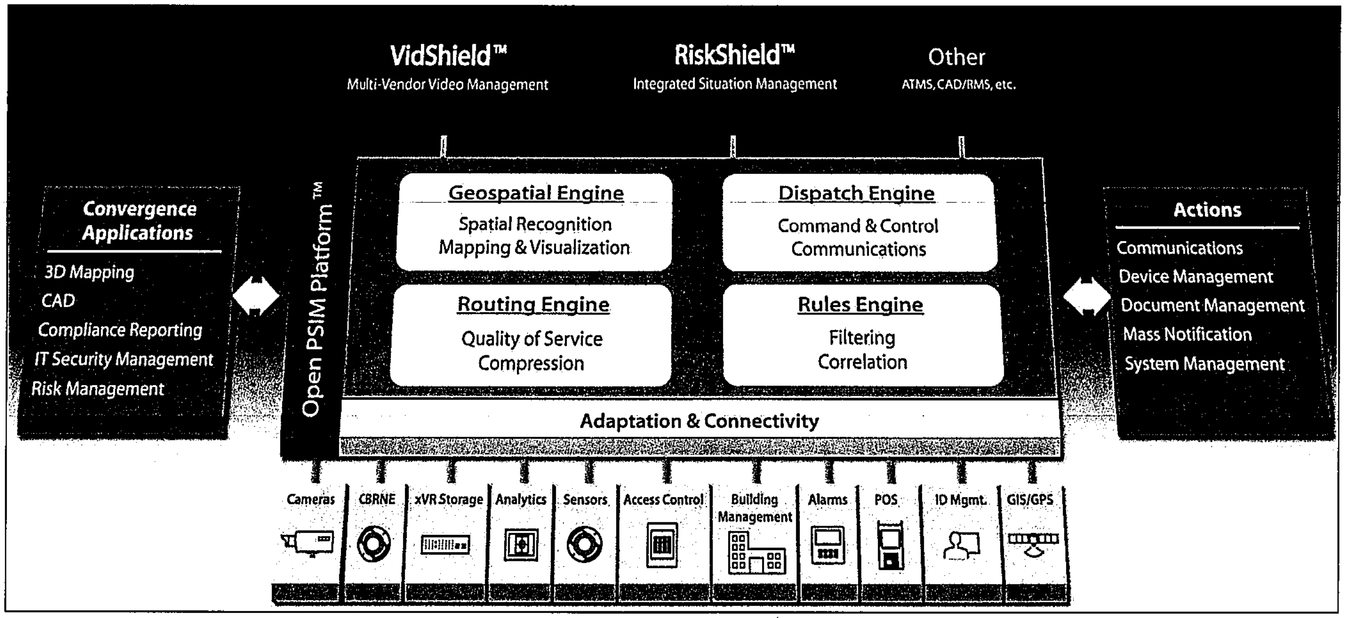


Figure 5-12. VidSys System Architecture.

VidSys provides **Situation Management** software that enables companies to integrate their disparate physical security devices and systems. Using the Open PSIM (platform enables the correlation of data from multiple sensor systems, applies analytics and intelligence through a series of robust engines, and helps filter out irrelevant information such as false alarms. This allows a command center to analyze the information, present to security personnel all the information necessary to verify the situation, and then provides the instructions and tools to resolve the situation. All this is accomplished through a web-based, open architecture platform that can tie into a variety of devices, including video (cameras, recorders, analytics), sensors, access control, Fire, RFID, CBRN, HVAC, Building Management and more. This enables VidSys to create a Common Operating Picture that graphically displays a collection of alarms, video, and data on a single display. Operators and Supervisors are able to view system resources from various locations, allowing for the remote viewing and monitoring of multiple systems simultaneously.

5.5.3.2 Features

The VidSys system also incorporates **VidShield** software – a product agnostic, video management software solution and does not compete with physical security devices or systems, but instead integrates and leverages all of the disparate products into one Common Operating Environment. This allows VidShield to fully leverage existing legacy systems (analog & digital), as well as, proven flexibility to add best of breed solutions in the future. VidShield can simultaneously communicate with nDVRs and cameras from multiple vendors through its unique user interface. For advanced visualization needs, video walls can easily be controlled as well, including preset layouts and drag and drop functionality. In addition to comprehensive video management, VidShield includes Rules, Routing, Dispatch, Mapping and Geospatial engines that allow for unsurpassed Command and Control capabilities within virtually any environment.

For emergency incidents, video can potentially be shared with local Police & Fire Departments, either by operators, or automatically based on a verified alarm. Additionally, should an emergency such as a fire occur, and the site is evacuated, all resources can still be viewed and managed safely from virtually any web-enabled computer. When patrols are performed, VidShield can push video out to police and security personnel on mobile devices such as laptops, PDA's and other handheld devices.

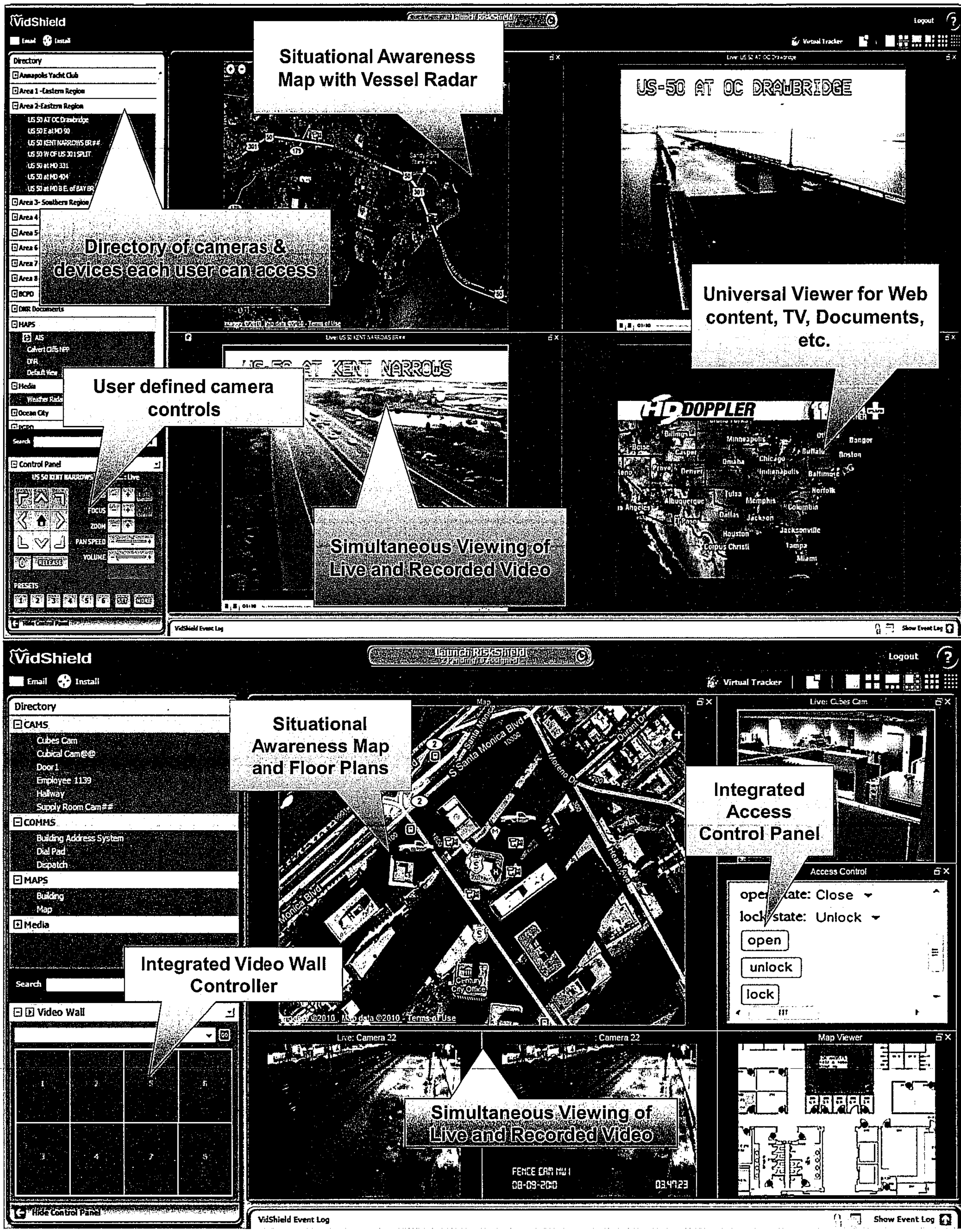


Figure 5-13. VidSys VidShield Video Management and Mapping Screen.

Within VidShield, the system contains the optional capabilities of **VirtualTracker**, a powerful feature that enables easy "tracking" of an object (person, asset, vehicle etc.) in real time, as it moves among a network of security cameras. Virtual Tracker uses the Geospatial Engine to calculate the nearest or best cameras available to view the object based on locations and presets. The video streams from multiple cameras are merged into a single screen view with on-screen controls. The primary camera view is displayed and views from the nearest cameras in each direction form a frame around it. Locations of the cameras involved are simultaneously displayed on a map or building layout. **BackTracker**, another feature within the application, allows operators to go back in time using recorded video for forensic analysis of events and to determine a suspect's point of origin. BackTracker can provide an operator with views of recorded video from multiple nDVR's vendors in one interface, greatly reducing forensic research time.

Figure 5-14.VidSys VidShield screen with VirtualTracker feature.

The DAC will add enhanced **Situation Management** with the implementation of the VidSys RiskShield solution. RiskShield goes beyond traditional event and alarm management systems using our **Open PSIM Platform** to provide event filtering and correlation. Data is filtered from all monitored systems and Situations are presented to an operator, in real time, with associated camera and map views for visual verification. Response plans are then launched, and resolution is achieved through a series of event specific steps. Written response plans are able to be automated within the RiskShield solution to rapidly streamline the security operator's efforts, enabling the efficient management of a situation.

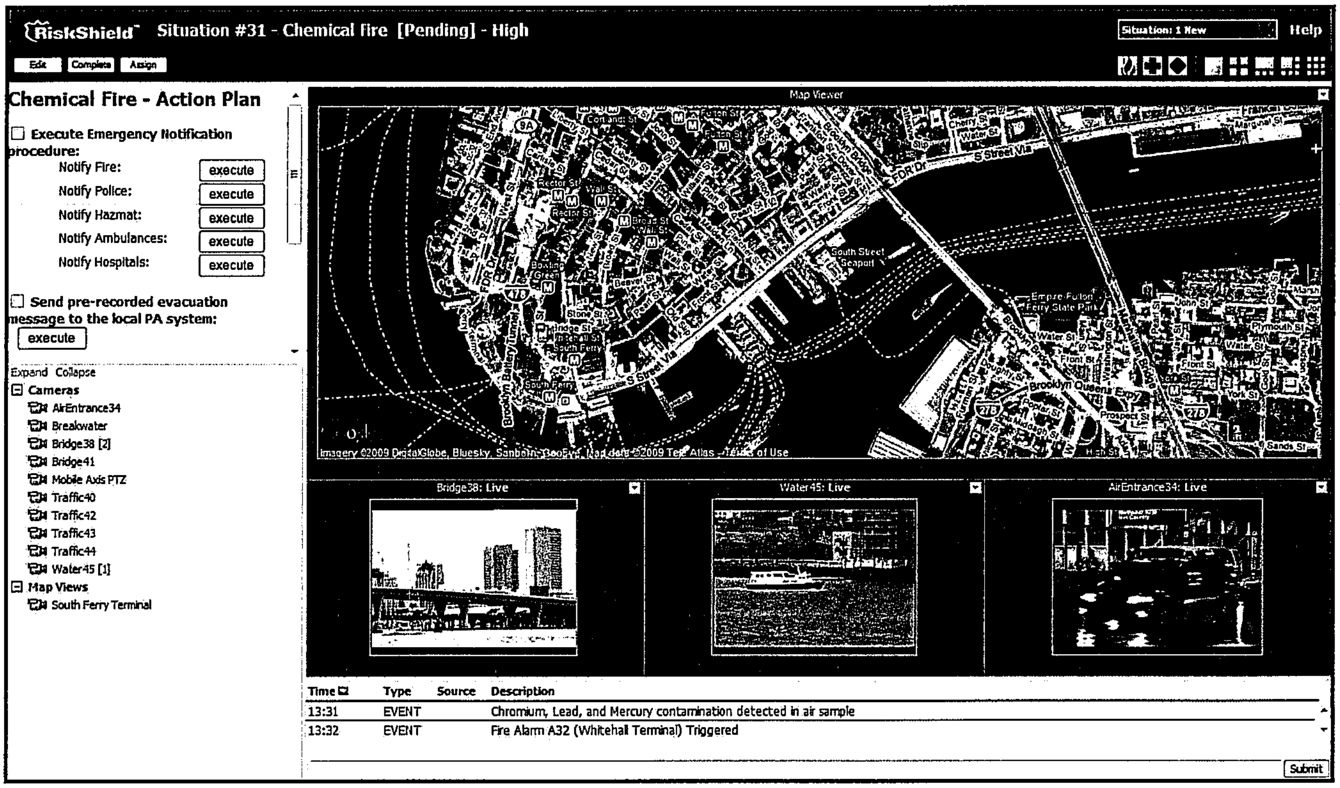


Figure 5-15. VidSys RiskShield screen with example of Chemical Fire situation management

Unlike Event Management systems, which focus on presenting alarm and device summaries, and leave it up to the operator to search for correlations, Situation Management fully correlates all pertinent information for you, including alarms across multiple devices or even systems. First, a situation is a collection of events, devices, maps, icons, action plans, etc. associated with one problem an operator must manage. Each situation brings together the right resources for the operator allowing them to quickly manage the task at hand (for instance, when opening a situation your screen would show where the event is occurring (map and icons), all nearby cameras and devices (allowing control of video, doors, etc.), related events that either created the situation or support it with additional information, operator instructions (Action Plan) allowing shortcuts to correct actions as well as logging and tracking.

The following table highlights some of the important features that show the strength and flexibility of the VidSys PSIM. These features improve the user experience, reduce response time and enhance incident management.

Table 5-4. Features of the VidSys PSIM

Feature	Description
Universal Viewer	Universal live and recorded video playback in the VidShield application to include analog and digital H.264, MPEG2, MPEG4, MJPEG and analog Proprietary vendor-specific MPEG4 streams Browser based deployment
Embedded Video Controls	Camera and NVR controls appear on selection of camera feed Pan, tilt and zoom controls for live cameras n/DVR controls to include stop, rewind, fast forward, pause, play and others
Configurable Directory Tree	Configurable to meet specific needs of the customer Includes the ability to build multiple layers in the directory Custom naming of cameras sources, maps, outputs, etc.
Video Tours	Allows users to display multiple sources in a looping tour

Feature	Description
	Adjustable hold times Dynamic tours can be played based on time or day of events programmed using the Correlation Engine Display multiple video windows per monitor, simultaneously
User Grouping & Priority Settings	Grouping allows users to view and access only predefined devices Priority determines which users have camera control and who can pre-empt lower priority users Multiple users can simultaneously access surveillance resources. Based on pre-assigned priority levels, supervisors or managers can take control of different system resources.
Single or Multi-head Support	Support for single or multiple monitors allowing users more comprehensive views of the systems Video Walls are controllable through interface
Audit Trail Logging	User access Resource usage Event handling
Device Adaptation and Connectivity	Integration and interoperability of multiple security assets including video, motion sensors, gunshot detection, analytics, etc.
Rules Engine	Allows for the assessment and filtering of alarms and events to present defined and undefined patterns of activity and to correlate the information and presentation in a common operating picture to the command center user in a single view of a situation across disparate devices.
Geospatial Engine	Provides geo-location of devices and supports the positional representation of cameras, alarms, sensors and other assets on geographic maps, floor plans, etc. Maps and drawings are easily navigated and zoomed to display detailed information.
Routing Engine	Intelligent switch that connects any security device to the command interface and accommodates the transmission of formats and protocols between connected devices
Dispatch Engine	Integrates with communications infrastructure to initiate external transmission of messages, video, data and commands to first responders, mobile users, other command centers, etc.

The VidSys system is an integral part of a DAC. It is comprised of a scalable and extensible interoperability platform as well as surveillance and situation management components that provide customers the ability to deliver complex solutions with a COTS product that are otherwise not possible without extensive and very costly custom services.

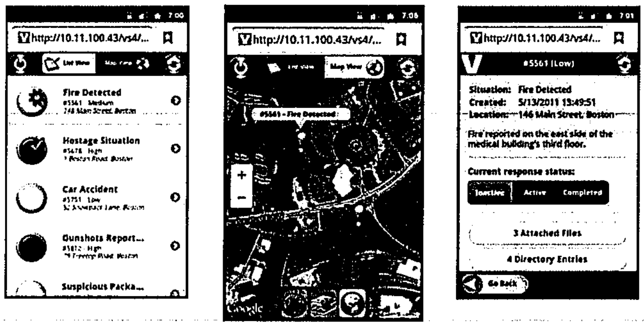
Expandability and Extensibility

RiskShield™ modular architecture facilitates both horizontal and vertical expansion. As enterprises evolve, so do the requirements to integrate with an increased number of different manufacturers' products. RiskShield™'s component design allows additional RiskShield™ device proxies to be deployed onto additional servers, allowing an increased number of manufacturer devices to be integrated without adversely affecting the existing footprint of device integration. To address increased demand for existing systems or to allow for additional devices within an existing RiskShield™ integration, RiskShield™ can be scaled as needed. Additional RiskShield rules engine instances can also be deployed onto additional servers. Additional rules engines enable more event correlation, filtering and aggregation, allowing for more devices to be integrated.

As server and workstation hardware increases in speed and capacity so does the rate at which they are deployed. RiskShield™ fully supports this vertical scaling by using all processors and cores available on the hosting server. RiskShield™ uses a multithreaded design to facilitate the most efficient usage of hosting hardware. Additionally, RiskShield™ performance can be increased by extending limits on caching and number of simultaneous database connections.

Mobile-Data Sharing: Leveraging Mobile Devices / Smart Phones

Mobile responders can be assigned to RiskShield™ situations and can view details of the situation from their Android or iOS device phones and/or tablets. Situation details include alarms and associated documents such as text or PDF files, snapshot images, or exported video clips. Mobile responder status and location is passed back to RiskShield™, so that RiskShield™ operators can monitor the responders who are assisting with situation management.



5.5.4 Summary and Evaluation of the Current Environment

The SAIC Team understands the current state of the system provides a facility with telecommunications and network access to the Oakland City security intranet with no DAC capabilities existing today. The City-Port, along with various regional, State, and Federal agencies, have a number of technological components that can be linked and integrated into the DAC. These systems are detailed in the section below:

5.5.4.1 Port Security System

Integrated CCTV System

The SAIC Team understands the following components to comprise the Port's "Integrated System". We also understand that the Genetec Security Center version 5.1 will be the video management application responsible for integrating the existing video systems at the Port of Oakland:

- Crane-mounted camera systems:
  - 34 cameras, color and IR
  - Integrated with Vigilant NVRs
- Port Road VSS/Power Substation IDS:
  - 21 PTZ and fixed cameras
    - Nine (9) ACTi cameras
    - Eleven (11) SightLogix cameras
    - One (1) substation camera
  - Integrated with Verint Nextiva NVR
  - Video analytic alarms from SightLogix cameras
- Maritime Terminal IDS
  - 21 of cameras
  - Integrated with Genetec Omnicast
  - Some cameras sending alarms from video analytics

Based on this understanding, SAIC proposes to integrate Genetec Security Center system capabilities with VidSys PSIM and provide the following functionality via the client user interface:

- Provide live video to the user
- Provide PTZ camera control
- Provide recorded video to the user
- Provide alarms from video analytics

Geospatial Security Mapping System (GSMS)

SAIC's understanding of the existing GSMS system is that the mapping capability is provided by an ESRI server owned and operated by the Port. Based on the CONOPS and Technology Linkage documents, we understand that the following systems are already integrated with ESRI as data layers:

- Vessel traffic
- Road traffic
- Weather
- Tides
- Earthquakes

Based on this understanding, SAIC proposes to integrate the ESRI mapping capability with VidSys PSIM and provide the following functionality via the client user interface:

- Use ESRI as the primary map interface within the VidSys client
- Provide the user the ability to turn mapping layers on/off

Truck Management System (TMS)

SAIC is the systems integrator responsible for the design and delivery of the TMS. As the developer and integrator, we have intimate knowledge of how the Fluensee Yard truck management system work and integrates with 3rd party systems. Based on this understanding, SAIC proposes to integrate the TMS system capabilities with VidSys PSIM and provide the following functionality via the client user interface:

- Send alarms from TMS to VidSys
- VidSys to create a situation for alarm management
- Alarm situation to include truck information: make/model, license plate, owner
- Map to show the location of the alarm event

5.5.4.2 *City Security and Law Enforcement Systems*

Intelligent Transportation System – Outdoor IP PTZ Cameras

SAIC's understanding of the ITS Outdoor IP PTZ cameras is that these cameras consist of twelve (12) Axis brand HD PTZ cameras at target locations throughout the city of Oakland. Our understanding is that these cameras are integrated to a Genetec Omnicast video recording and management system. Since these cameras are already integrated to the Genetec system, we would integrate Genetec with VidSys to include the capability of these cameras. Based on this understanding, SAIC proposes to integrate the outdoor IP PTZ cameras through the Genetec Omnicast system interface with VidSys PSIM and provide the following functionality via the client user interface:

- Provide live video to the user
- Provide PTZ camera control to the user
- Provide recorded video to the user
- Provide video and snapshot export to the user
- Map to show the location of each camera

Intelligent Transportation System – Oakland Video Image Detection System (VIDS) cameras

SAIC's understanding of the ITS VIDS cameras is that there are approximately 20 intersections with one camera covering each approach for a total of 80 cameras. We also understand that these cameras are integrated with an Iteris video system. Based on our research of the Iteris video system, we believe that the system processes the traffic video with video analytics and creates alarms in the event of a traffic incident. Based on this understanding, SAIC proposes to integrate the VIDS cameras through the Iteris system interface with VidSys PSIM and provide the following functionality via the client user interface:

- Provide live video to the user
- Provide alarms from Iteris to VidSys
- Create an alarm situation based on specific alarm types from Iteris
- Map to show the location of each camera and alarm

Automatic License Plate Reader (ALPR) cameras

SAIC's understanding of the ALPR cameras is that they are PIPS Technology brand cameras and there are sixteen (16) mobile units in operation. The cameras and the Police ALPR Graphical Interface System (PAGIS) that is operated within each patrol car. The system captures color images of each vehicle, as well as an infrared image of the plate, which is converted into a text file that is then checked against onboard databases of interest (stolen vehicles, wanted felons, AMBER alerts, etc.) stored in the local processor. The data from multiple PAGIS systems are fed into the Back Office System Server (BOSS) database application for licenses plate data mining and intelligence purposes.

After contacting PIPS Technology to discuss the potential of 3rd party integration, SAIC was told that PIPS ALPR cameras and the BOSS database do not support the integration of 3rd party systems. PIPS Technology has not developed an application programmers interface (API) or a software development kit (SDK). We have engaged PIPS and they agreed to collaborate with SAIC to identify ways to interface their technology with the PSIM solution and the DAC.

Possible integration functionality may include:

- Alarm integration (location, vehicle snapshot, licenses plate number)
- Information associated with the alarm (driver name, violation)

Intelligent Transportation System – East Bay Smart Corridor (EBSC) cameras

SAIC's understanding of the ITS EBSC cameras is there are approximately 6 intersections with one camera to cover each approach for a total of 24 cameras and some unknown number of cameras provided by Caltrans that monitor the I-80 ICM project, estimated six (6) cameras. We assume that each of these cameras are fixed and do not provide PTZ support. At this time, we are unable to determine if this video is integrated with a network video recorder system. Based on this understanding, SAIC proposes to integrate the EBSC cameras with VidSys PSIM and provide the following functionality via the client user interface:

- Provide live video to the user
- Map to show the location of each camera

Intelligent Transportation System – Redflex traffic system cameras

SAIC's understanding of the ITS Redflex traffic system cameras is that this is a red light camera system that is used to detect vehicles that violate red light traffic lights. Our understanding is that there are thirteen (13) Redflex camera systems within the City of Oakland. We assume that each of these cameras can provide live video and alarms. We have established a working relationship with Redflex and they have agreed to cooperate with SAIC to integrate the Redflex cameras with VidSys PSIM and provide the following functionality via the client user interface:

- Provide live video to the user
- Provide alarms from Redflex cameras to VidSys
- Map to show the location of each camera and alarm

5.5.4.3 Other Systems

Secure Our Schools (SOS) CCTV Project cameras

SAIC's understanding of the SOS CCTV Project camera is that the Oakland Police Department has viewing access to these cameras from the Oakland Unified School District. Information we have received indicates there is a combination of approximately 900 cameras either installed or under contract to be installed. Our assumption is that these cameras are connected to a network video recording (NVR) system which provides access to recorded video from these cameras. We are willing to work with the City-Port and Police Department to come up with solutions to best integrate these SOS CCTV feeds into the PSIM and DAC and provide the following functionality via the client user interface:

- Provide live video to the user
- Provide recorded video to the user
- School floor plans to show the location of each camera (assumes Oakland can provide school floor plans for integration)

ShotSpotter

SAIC's understanding of the ShotSpotter system is that the City of Oakland has these gunshot detection systems installed around the city. Previous integration experience with this system has provided alarm and alarm location information. Based on this understanding, SAIC proposes to integrate the ShotSpotter system with VidSys PSIM and provide the following functionality via the client user interface:

- Provide alarm on gunshot detection
- Map to show the location of the alarm
- Alarm to create a situation which incorporates Oakland CONOPS for managing a gunshot incident.

CAD System

SAIC understands that Oakland has already purchased Motorola Premier CAD version 7.0 as the CAD system. VidSys has previously been integrated with Motorola CAD. Based on previous integration experience, SAIC proposes to integrate the Motorola Premier CAD with VidSys PSIM and provide the following functionality to the Motorola CAD system:

- Send alarm information to Motorola CAD to notify dispatcher of an incident
- Send alarm location to Motorola CAD to aid in dispatching patrol units

Case/Records Management System

SAIC understands that the City has already purchased Motorola Infotrak Law Records Management System. Based on our understanding of the Motorola Infotrak system, SAIC proposes to integrate the Motorola Infotrak system with VidSys PSIM and provide the following functionality to the Motorola Infotrak system:

- Send alarm information to Motorola Infotrak to add alarm information to an incident report

- Send alarm location to Motorola Infotrak to add alarm details to the incident report

CrimeView Desktop

SAIC's understanding of CrimeView Desktop is that it is used for analysis and mapping of crime activity. CrimeView integration documentation indicates that it is intended for integration with CAD and RMS system. We know that Oakland already owns the CAD, RMS and CrimeView systems. We propose working with the City to evaluate opportunities to integrate these systems into the PSIM.

WebEOC/NC4

The SAIC Team is willing to explore opportunities for integrating the WebEOC/NC4 requirements during the proof-of-concept design phase.

Northern California Regional Intelligence Center (NCRIC)

SAIC proposes to provide a command center user license for NCRIC to use VidSys PSIM at their center.

Contra Costa County Regional Data Sharing Portal (ARIES UASI)

SAIC proposes to provide a command center user license for NCRIC to use VidSys PSIM at their center.

5.5.5 Requirements for the DAC System

Assessment of VidSys as a solution which could address PSIM functional requirements as defined by the DAC ConOps documentation must be taken into consideration.

5.5.5.1 System Usage Requirements

User access to the VidSys PSIM will be granted either through integration with Oakland's Active Directory system or credentials can be developed for local user accounts within the VidSys PSIM. All users must be part of a user group. User groups contain configuration to a group of users, allowing user priorities and privileges to be configured once for a defined group of users. User groups define the access to devices and set permissions for user functionality within the PSIM application. Users can be restricted to device types or geographic region. Users will also be assigned with a priority level where the user with the higher priority can take control of a device from a user with a lower level. This capability is important when the DAC operator needs full control of the system and devices in order to manage an incident. The SAIC proposes to deliver 20 PSIM user licenses for the baseline delivery of the DAC PSIM solution.

5.5.5.2 Operational Requirements

The following table compares the SAIC DAC-TLS solution to the DAC ConOps functional requirements. SAIC understands that some systems have already been purchased by Oakland since the ConOps was written and will indicate our understanding of these areas within the table. For example, SAIC understands that Oakland has already purchased the Motorola Premier CAD and Motorola Infotrak law records management system. Based on the functional requirements in the ConOps and the Technology Linkage documents, SAIC meets the functional requirements as stated.

Table 5-5. DAC ConOps Functional Requirements Checklist

DAC ConOps Functional Requirements	Requirement Satisfied by SAIC Solution
I. Security Management Services	SAIC understands these requirements to be primarily focused on the PSIM system.
1. 1. Specific monitoring of Port security technologies.	**Satisfied: VidSys PSIM**
1.2. Geospatial data integration, including capacity to integrate GIS (Port and City).	**Satisfied: VidSys PSIM**
1.3. Retention of security specific historical data.	**Satisfied: VidSys PSIM**

DAC ConOps Functional Requirements	Requirement Satisfied by SAIC Solution
1.4. Security Management: Ability to house incomplete information records with a process for adding records to primary database when record is indicated complete.	**Satisfied: Existing Police and Fire RMS**
2. Incident Management	SAIC understands these requirements to be primarily focused on the PSIM system.
2.1. Incident specific real-time assessment data.	**Satisfied: VidSys PSIM**
2.2. Retention of incident specific historical data.	**Satisfied: VidSys PSIM**
2.3. Ability to track incident specific information and outcomes.	**Satisfied: VidSys PSIM**
2.4. Ability to share incident level data across agencies, including communication links from the DAC software to 911 dispatch and the City and Port EOCs.	**Satisfied: VidSys PSIM**
3. Service Tracking	SAIC understands these requirements to be primarily focused on the Telestaff system.
3.1. Service/Report Delivery Management: Ability to document and retain history of agency specific services received by an agency from the DAC, including ability to document planning, scheduling and follow up on delivery of services or reports.	**Satisfied: Existing Police and Fire Telestaff**
3.2. Referral Management: Ability to document and retain history of incident specific referrals, including follow up, reminder capabilities, and status/outcome of incident for close-out/archive.	**Satisfied: Existing Police and Fire Telestaff**
4. Information and Referral	SAIC understands these requirements to be primarily focused on the Regional Data Sources.
4.1. Real time link to City or region Information and Referral database of available resources (i.e., 211, 311, 511) OR capacity to build and maintain an integrated I & R within the system	**Satisfied: Existing Regional Data Sources**
4.2. Electronic submission of requests to/from other agencies for data access (Push/Pull capability)	**Satisfied: Existing Regional Data Sources, ARIES UASI**
5. Data and Technical Standard Compliancy	SAIC understands these requirements to be primarily focused on the RMS technology.
5.1. System must meet all Criminal Justice and Privacy compliancy standards for data collection as well as the baseline compliancy standards for privacy and security outlined in federal and state data and technical Standards	**Satisfied: Police and Fire RMS**
6. Reporting Capacity	SAIC understands these requirements to be primarily focused on the RMS systems.
6.1. Capacity to generate security technology-specific, agency, and, collaborative level reports.	**Satisfied: Existing Police and Fire RMS**
	Satisfied: VidSys PSIM
6.2. Standard, built-in reports and forms required by the State of California and the Federal Government, including Incident Command System (ICS) forms for SEMS and NIMS compliance, table shells, data validation reports, an unduplicated incident count report, and basic incident analysis reports	**Satisfied: Existing Police and Fire RMS**
6.3. Integrated ad hoc reporting capacity that maintains user level security restrictions while allowing for user flexibility in choosing tables and fields as well as filtering and conditional report aspects.	**Satisfied: Existing Police and Fire RMS**
6.4. Capacity to import and export data through XML and CSV formats, including ability for regular, user initiated imports and exports and ability to securely strip data of identifiers and manage data transmission while insuring a high accuracy of un-duplication rate.	**Satisfied: Existing Police and Fire RMS**
7. System Security	SAIC understands these requirements to be primarily focused on the RMS systems.
~~7.1. Integrated technical safeguards to ensure a high level of privacy and security, including:~~	~~**Satisfied: Existing Police and Fire RMS**~~
7.2. Back end server(s), including data encryption and transmission.	**Satisfied: Existing Police and Fire RMS**
7.3. Administrator controlled user name and password access.	**Satisfied: Existing Police and Fire RMS**
7 .4. Automatic timeout/log-off.	**Satisfied: Existing Police and Fire RMS**
7.5. Administrator controlled user level read, write, edit and delete capabilities.	**Satisfied: Existing Police and Fire RMS**
7.6. Administrator controlled user level module and sub-module access.	**Satisfied: Existing Police and Fire RMS**
7.7. Automated audit trail.	**Satisfied: Existing Police and Fire RMS**
7.8. Information Security Industry Standard encryption and SSL certifications.	**Satisfied: Existing Police and Fire RMS**

DAC ConOps Functional Requirements	Requirement Satisfied by SAIC Solution
7.9. All technical safeguards required to be National Information Exchange Model (NIEM) compliant.	**Satisfied: Existing Police and Fire RMS**
7 .10. AU security safeguards required for compliancy to state and federal criminal justice and privacy Data and Technical Standards (including Code of Federal Regulations (CFR) 28 Part 23).	**Satisfied: Existing Police and Fire RMS**
8. System Support	SAIC understands these requirements to be primarily focused on the support and maintenance contract as well as the trouble ticket system.
8.1. Support DAC on complex technical issues including problems related to DAC software system architecture, including networks, servers and workstations.	**Satisfied: SAIC system support and maintenance**
8.2. Respond to requests and inquiries from DAC system operators within the pre-determined timeframe of a service level agreement (2 hour window recommended).	**Satisfied: SAIC system support and maintenance**
8.3. Investigate and resolve problems installing software as a result of complex environmental variables including integralion of other technologies to the DAC.	**Satisfied: SAIC system support and maintenance**
8.4. Identify solutions *to* work around open issues / problems that are under investigation or pending resolution.	**Satisfied: SAIC system support and maintenance**
8.5. Work directly with City and Port technology staff, and end users, to deploy and configure DAC system software.	**Satisfied: SAIC systems engineering and program management team**
8.6. Document and track, case histories, issues, and actionable steps taken.	**Satisfied: SAIC ProVM ticket management system**
8.7. Perform software research, testing, and recommendations.	**Satisfied: SAIC systems engineering team**
8.8. Improve documentation of support policies and procedures.	**Satisfied: SAIC systems engineering team**
8.9. Perform quality assurance testing of new software releases.	**Satisfied: SAIC systems engineering and quality assurance team**
8. I 0 Provided technical support training to other team members.	**Satisfied: SAIC technical training team**
8.11 If system support is integrated with the software solution purchase, grant funding could cover 2 years of post-implementation support. It is recommended that 3-5 years on site support, with technical training band-off to City and Port technology staff prior to support conclusion.	**Satisfied: SAIC system support and maintenance**

5.5.6 Identification of Proposed Systems for Integration into the PSIM

The SAIC Team, through strategic teaming arrangements and partnerships with key vendors and contractors, is proposing to integrate both the Port Security as well as the City Security and Law Enforcement systems into the VidSys PSIM. This includes all CCTV inputs, GSMS/GIS systems, the LPR monitoring system, and City ITS live camera surveillance systems.

The following represents what we propose to be Core Field Integration Systems for this project.

5.5.6.1 Proposed Core Systems for Integration into the PSIM

For <u>Core Field Integration Systems</u>, we propose the following:

- Port CCTV Genetec SC5.1
- Port Geospatial Security Mapping System (GSMS) GIS
- Port SAIC Truck Management System (developed by and currently maintained by SAIC-Fluensee for the Port)
- City Genetec Omnicast 4.X
- City VIDS System Cameras
- City ShotSpotter
- ESRI Mapping
- Motorola Premier CAD Compliant Interface
- Motorola InfoTrak Compliant Interface

Nearer-Term Additional Scalable Core Integration Systems that we may also include for this project, pending collaboration and mutually agreeable considerations, are the following:

- RedFlex Cameras
- East Bay Smart Corridor Cameras
- NOAA Service
- USGSM Service
- Bay Area 551 Service (operated and maintained by SAIC for the MTC)
- Oakland City Schools CCTV
- Oakland City Police Department ALPR
- Oakland City Public Safety Intranets

5.5.6.2 Proposed Future Systems for Integration into the PSIM

For Future Longer-Term Additional Scalable Future Integration Systems, under the current available budget constraints, we identify as the following:

- Police AVL
- Fire Mobile/AVL
- Integration of alarms to the CAD and RMS systems as required
- USGC Vessel Traffic Monitoring Service
- Northern California Regional Intelligence Center
- Chemical, Biological, Nuclear, Radiological, and Explosive (CBNRE) monitoring
- Automated Regional Information Exchange System (ARIES)

Of these above identified Future Longer-Term Additional Scalable Future Integration Systems, we are open to adopting to integrate the Police and Fire AVL and the USGC Vessel Traffic Monitoring Service much sooner, pending collaboration with the City and the Port.

For a diagram overview of the systems, see Figure 5-7.

5.6 Overall Project Delivery Schedule

Herein this subsection the SAIC Team presents our overall project delivery schedule as well as detailed schedules pertaining to specific work efforts.

For simplicity and comprehension ease, the overall project delivery schedule is segregated into 3 separate phase components as depicted in the figure below:

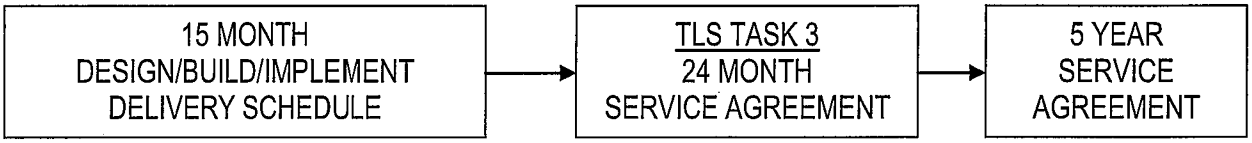


Figure 5-16. Overall Project Delivery.

The 15 Month Design/Build/Implement Delivery Schedule addresses the completion of the design/build/implementation work scope areas within 15 calendar months and is presented with a project start date of January 1, 2013 (pending a customer authorized Notice-To-Proceed) and an end date of March 30, 2014. This 15 Month Design/Build/Implement Delivery Schedule covers the following specific work efforts;

- Project Management and Communications (for Design/Build/Implement work phase)
- PART-B Existing Building Improvements (EBI)addressing the construction tenant improvements and the Video Wall Display System
- PART-A Technology Linkage System (TLS)covering the following two tasks only;
  - TASK 1: Planning and Scoping
  - TASK 2: Implementation

An overall project schedule in MS Project is provided at the end of this section and will be used as our baseline presentation for review with the City-Port of Oakland at the project kick-off meeting and will be maintained and updated during the project. The MS Project Schedule includes the following;

- TLS TASK 3 addressing the 24 Month Service Agreement
- 5 Year Service Agreement

5.6.1 15-Month Design/Build/Implement Delivery Schedule

SAIC Team has developed the 15 Month Design/Build/Implement Project Schedule with specific work flow sequencing showing the relationships between;

- Program Management and Communications,
- PART-B EBI work efforts, and
- PART-A TLS work efforts, specifically TLS TASK 1 and TLS TASK 2

SAIC Team proposes that the PART-B EBI work efforts and the PART-A TLS TASK 1 Planning and Scoping work efforts commence at the project start and our team has worked together to synchronize those two independent work flow activities so that they complete at the same timeframe thereby enabling a seamless workflow for the start of PART-A TLS TASK 2 Implementation work efforts.

Figure 5-17 depicts the work scope areas covered by the 15 Month Project Delivery Schedule and in the specific sequencing previously described.

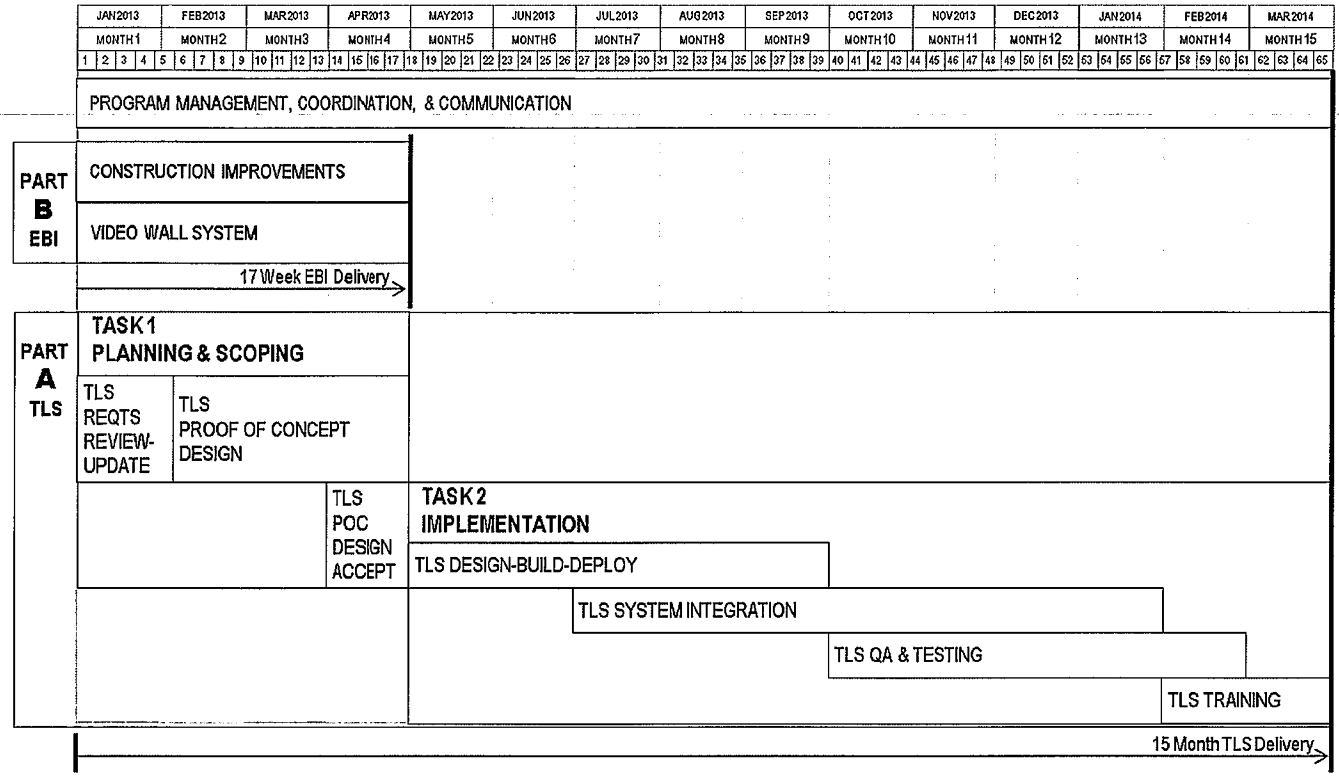


Figure 5-17. 15-Month Design/Build/Implement Project Delivery Schedule

More detail on each of the three major work scope areas are addressed under the 15 Month Design/Build/Implement Project Delivery Schedule is further described as follows:

- <u>Project Management and Communications</u> – this specific work effort, which is only separately called-out for and depicted within the 15 month design/build/implement delivery phase, the SAIC Team performs project management duties that include project controls, contracts, resource coordination, risk mitigation efforts, customer communications, and schedule management. After the 15 month design/build/implement delivery phase is complete, the project management and communications work efforts are covered/included under the TLS TASK 3 - 24 Month Service Agreement and also within the 5 Year Service Agreement activities.
- <u>PART-B Existing Building Improvements (EBI)</u> - this specific work effort covers the construction tenant improvements within the Emergency Operations Center (EOC) and the Video Display System design, install, and implementation which both efforts commence at project start and scheduled to be completed at the end of week 17 from project start, which is also aligned with the completion of PART-A TLS TASK1 Scoping and Planning.
- <u>PART-A Technology Linkage System (TLS)</u> – this specific work effort begins at project start with PART-A TLS TASK 1 Scoping and Planning which is scheduled to be completed by week 17 (aligned with completion of PART-B EBI described above) and then continuing with TASK 2 Implementation which begins at week 18 and ends at week 65 or at the end of Month 15. PART-A TLS includes the following work efforts:
    - <u>TASK 1</u> Scoping and Planning
        - TLS Requirements Review and Update
        - TLS Proof-Of-Concept (POC) Design

- TLS POC Customer Acceptance

- <u>TASK 2</u> Implementation
    - TLS Design, Build, Deploy
    - TLS System Integration
    - TLS Quality Assurance (QA) and Testing
    - TLS Training

5.6.2 17-Week PART-B EBI Delivery Schedule

SAIC Team has developed the 17 week delivery schedule for the PART-B Existing Building Improvements (EBI) that includes the completion of the construction tenant improvements and the design/build/implementation of the video wall system.

SAIC Team has worked together to also synchronize these two independent work flow activities so that they complete at the same timeframe at the end of the 17th week from project start. This along with the completion of PART-A TASK 1 Planning and Scoping work efforts also completing at the end of week 17 enable a seamless workflow for the start of PART-A TLS TASK 2 Implementation work efforts at week 18.

Figure XX depicts the work scope areas covered by the 17 Week PART-B EBI Delivery Schedule and in the specific sequencing previously described.

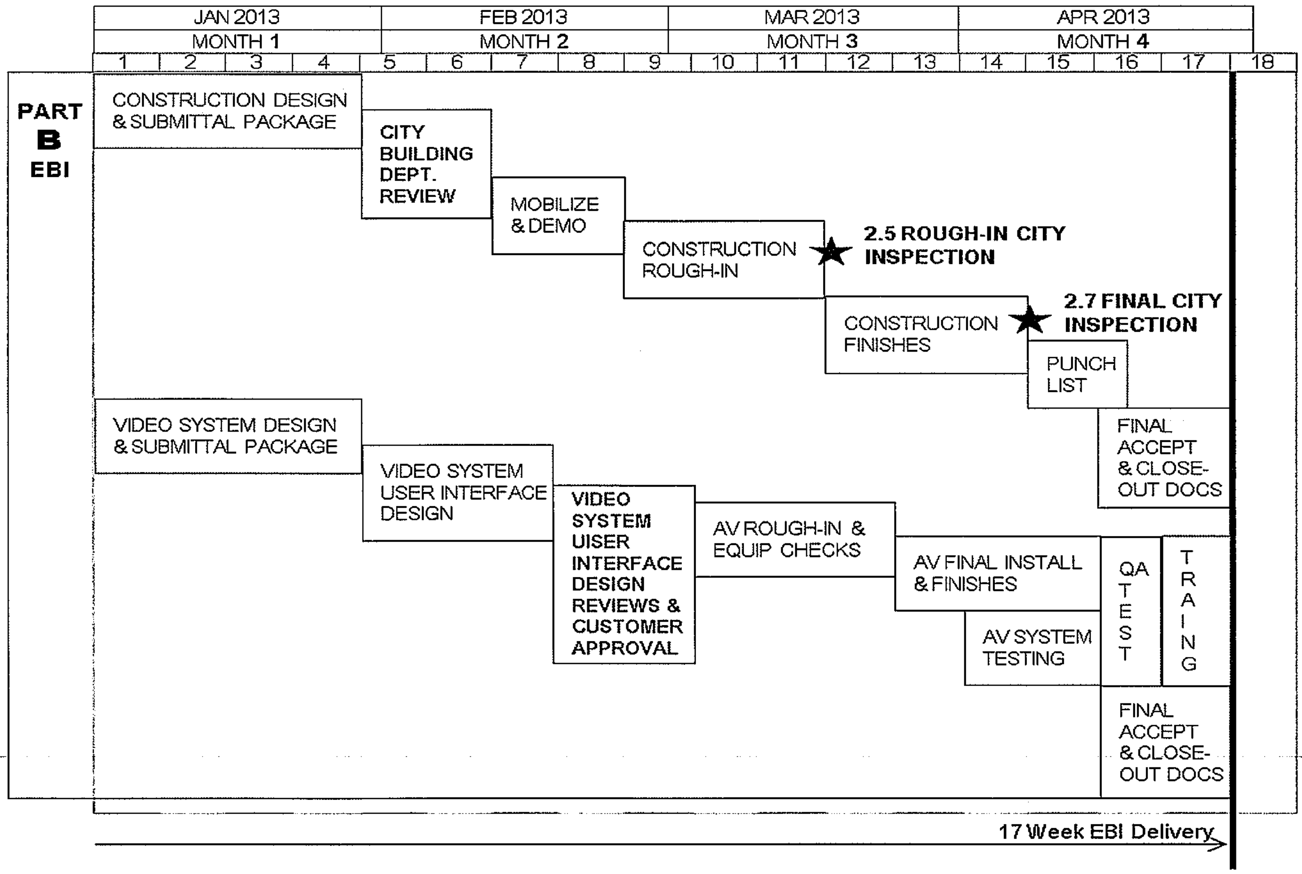


Figure 5-18. 17 Week PART-B EBI Delivery Schedule

More detail on each of the two major work scope areas are addressed under the 17 Week PART-B EBI Delivery Schedule is further described as follows:

- <u>**Construction**</u> – this specific work effort addresses the tenant improvements needed to address the construction requirements to support the video wall system. Specific work steps to be performed under this construction work effort are outlined here as follows and discussed in further detail in this Section 5, under Sub-Section 5.7.2:

- Construction Design and Submittal Package
- City Building Department Review
- Construction Mobilization and Demolition
- Construction Rough-In
- Construction Rough-In City Building Department Inspection
- Construction Finishes
- Final Construction City Building Department Inspection
- Construction Punch List
- Final Customer Acceptance and Close-out Documents

- **Video Wall System** - this specific work effort covers the design/build and installation of the video wall system in the Oakland EOC. Specific work steps to be performed by the SAIC team are outlined here as follows and discussed in further detail in this Section 5, under Sub-Section 5.7.2:
  - Video System Design and Submittal Package
  - Video System User Interface Design
  - Video System User Interface Design Reviews and Customer Acceptance
  - Audio/Visual Video System Equipment Checks and Rough-In Installation
  - Audio/Visual Video System Final Installation and Finishes
  - Audio/Video System Testing
  - Quality Assurance (QA) Testing
  - Video System Training
  - Final Customer Acceptance and Close-out Documents

5.6.3 17-Week PART-A TLS TASK 1 Planning and Scoping Delivery Schedule

SAIC Team has developed the 17 week delivery schedule for the PART-A Technology Linkage System (TLS) TASK 1 Planning and Scoping activities covering the following subtask work efforts;

- **TLS Requirements Review, Assessment, and Survey** – to ensure a complete understanding of the TLS delivery requirements mapped with the proposed PSIM solution and sensor/system integration plan and the over project implementation plan. This subtask work effort will commence at project start and be completed within 5 weeks.

- **TLS Proof-Of-Concept (POC) Design** – to prototype and bench test the PSIM solution using simulated data the interfaces for remote field devices and data sources establishing the minimum requirements for information exchange and communications. This subtask work effort will commence following the completion of TASK 1 and be completed in 12 weeks, by week 17.

- **TLS Proof-Of-Concept Design Customer Acceptance and Approval** – will be performed through a formal presentation of the proof-concept design, determined project costs, and final field sensor or data exchange end-points to be integrated with the PSIM. This acceptance-approval process is envisioned to take approximately 4 weeks and that the completion of such, the SAIC team will continue and proceed to PART-A TLS TASK 2 Implementation.

Figure 5-19 depicts the work scope areas covered by the 17 Week PART-A TLS TASK 1 Planning and Scoping Delivery Schedule.

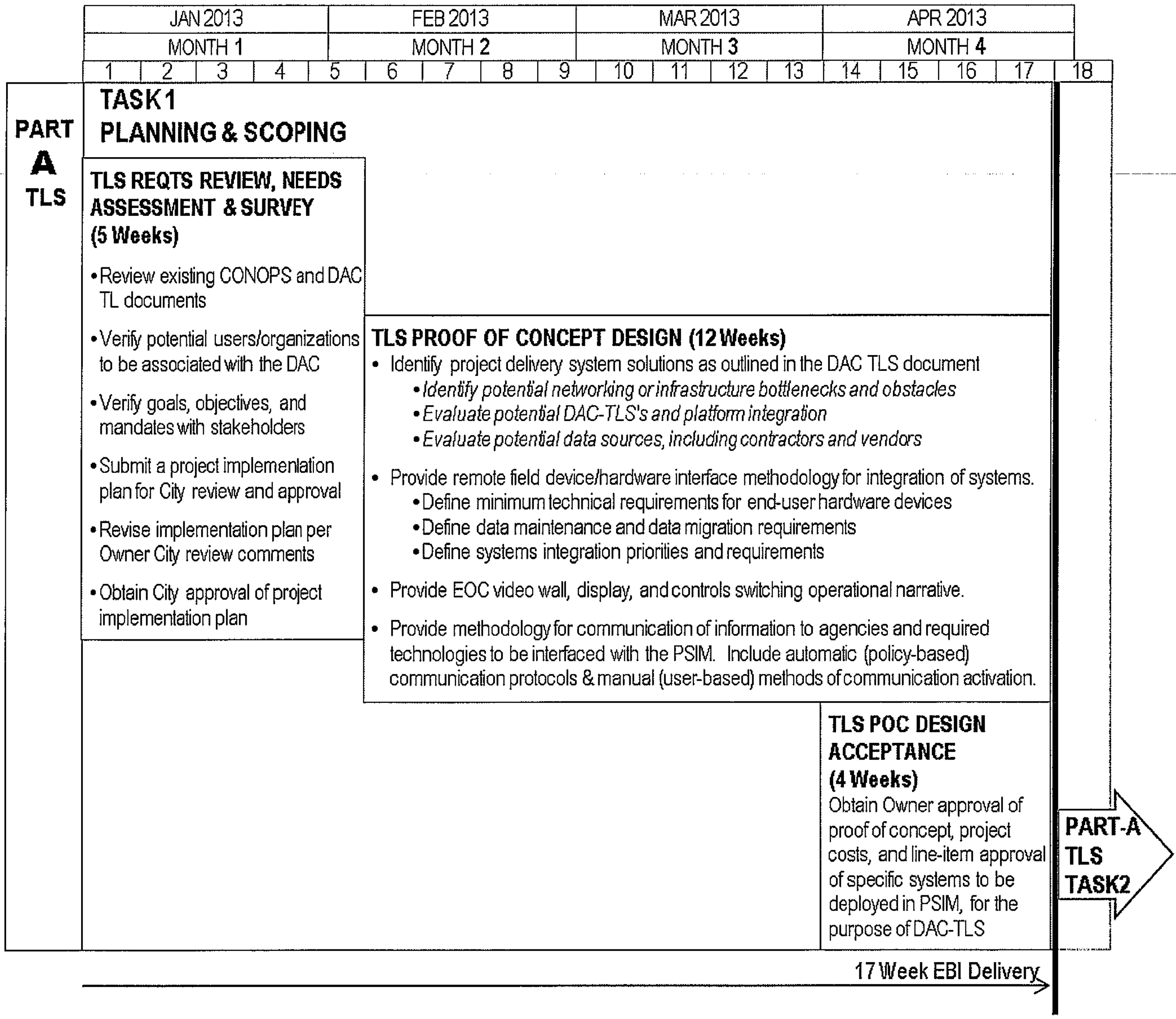


Figure 5-19. 17 Week PART-A TLS TASK 1 Planning and Scoping Delivery Schedule

5.6.4 48 Week PART-A TLS TASK 2 Implementation Delivery Schedule

SAIC Team has developed the 48 week delivery schedule for the PART-A Technology Linkage System (TLS) TASK 2 Implementation activities covering the following subtask work efforts;

- **TLS Design, Build, Deploy** – to ensure a complete understanding of the TLS delivery requirements mapped with the proposed PSIM solution and sensor/system integration plan and the over project implementation plan. This subtask work effort will commence after PART-A TLS TASK 1 and will be completed within 21 weeks.

- **TLS System Integration** – to establish operational interfaces between the field sensors and/or technology and/or other data sources agreed upon as the baseline and to place such interfaces under configuration management and control so as to maintain the integrity of the data exchange. This subtask work effort will take approximately 30 weeks to complete.

- **TLS Quality Assurance and Testing** – will be performed to ensure the design, build, deployed TLS satisfies the requirements agreed upon during the TASK 1 Planning and Scoping work efforts. This subtask work effort will take approximately 21 weeks to complete.

- TLS Training – will be performed to ensure that the envisioned identified users can utilize the TLS. This subtask work effort will take approximately 8 weeks to complete.

Figure 5-20 depicts the work scope areas covered by the 48 Week PART-A TLS TASK 2 Implementation Delivery Schedule.

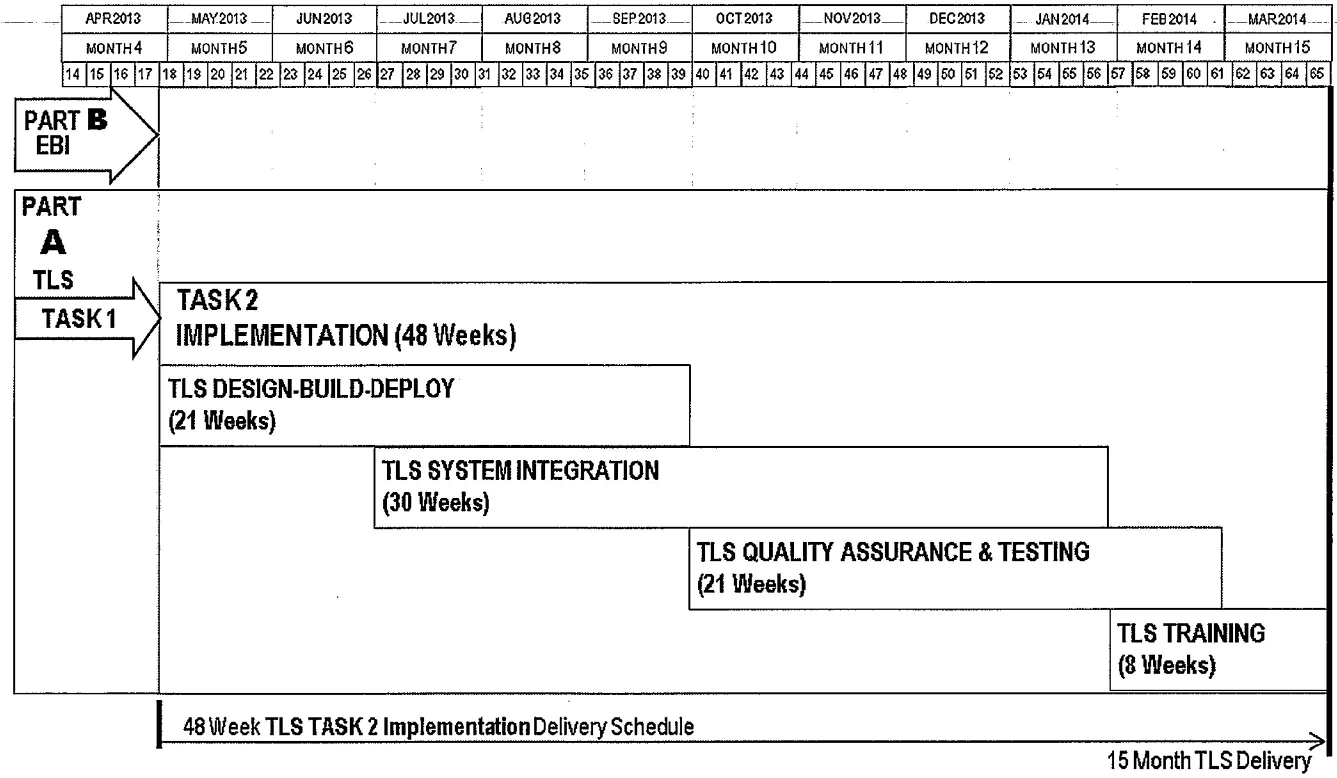


Figure 5-20. 48 Week PART-A TLS TASK 2 Implementation Delivery Schedule

The SAIC Team will work collaboratively with the City of Oakland and the Port of Oakland customer to prepare a project implementation plan to include any final delivery schedule adjustments and will submit the final project delivery schedule in MS Project. This MS Project Schedule will be maintained and updated during the project implementation period of performance.

5.7 Detailed Work Breakdown Structure (WBS)

In this sub-section 5.7, the SAIC Team presents our detailed technical Work Breakdown Structure (WBS) detailing our approach for technical delivery success. This section is broken out into four (4) distinct sub-sections outlining the major work scope task activities.

As the previous section outlining the delivery schedule depicts the Part-B EBI work scope activities start and parallel the Part-A TLS work scope activities, we elected to discuss/cover the Part-B EBI detailed work scope description before discussing the Part-A TLS because the Part-B EBI work activities are to be completed before the Part-A TLS is completed. Otherwise stated, Part-B EBI work scope will be completed before Part-A TLS work scope is completed, and thus we elected to discuss/cover herein the Part-B EBI work scope before discussing/covering the Part-A work scope. So the content herein for Section 5.7 is structured as follows:

Sub-Section 5.7.1 **Project Management and Communication**

Sub-Section 5.7.2 **PART–B Existing Building Improvements (EBI)**

- EBI Construction
- EBI Video Display System Installation

Sub-Section 5.7.3 **PART–A Technology Linkage System (TLS)**

- TASK 1: DAC-TLS Planning and Scoping
  - Needs Assessment-Survey
  - DAC-TLS Proof-of-Concept Design
  - Customer Approval of DAC-TLS Proof-of-Concept Design
- TASK 2: Implementation
  - DAC-TLS Implementation Design, Build, and Deploy
  - DAC-TLS System Integration
  - DAC-TLS Quality Assurance and Testing
  - DAC-TLS Training
- TASK 3: DAC-TLS 2 Year (24 Month) Service Agreement

Sub-Section 5.7.4 **DAC-TLS 5 Year (60 Month) Service Agreement**

5.7.1 Project Management, Controls, and Reporting

Project management involves tightly knit communication and cooperation between the PM and key support staff and subcontractors throughout all phases of this project: design, construction, and maintenance. As depicted in Figure 5-21, effective project management is a continual process of performance, tracking, and metrics, which we will discuss during various meetings throughout the project's duration.

The SAIC Program Manager, Mr. Taso Zografos, will prepare meeting agendas, meeting notes, action item capture and monitoring, and distribution of same to the SAIC Team, the City-Port, and required stakeholders. Meetings to be held include:

- A project kickoff meeting to establish objectives and timing of the project, including finalization of the roles and responsibilities of each team member.

- Monthly meetings with the City-Port will be held, and meeting notes that cover managerial and technical issues will be maintained. The SAIC Team will prepare the meeting notes.
- Internal Technical Interface Meetings: Internal meetings are held when necessary to ensure the continuity of information exchange necessary for the project. Action items will be maintained and monitored using an Action Item Register resident on a project SharePoint® collaboration site hosted by SAIC.

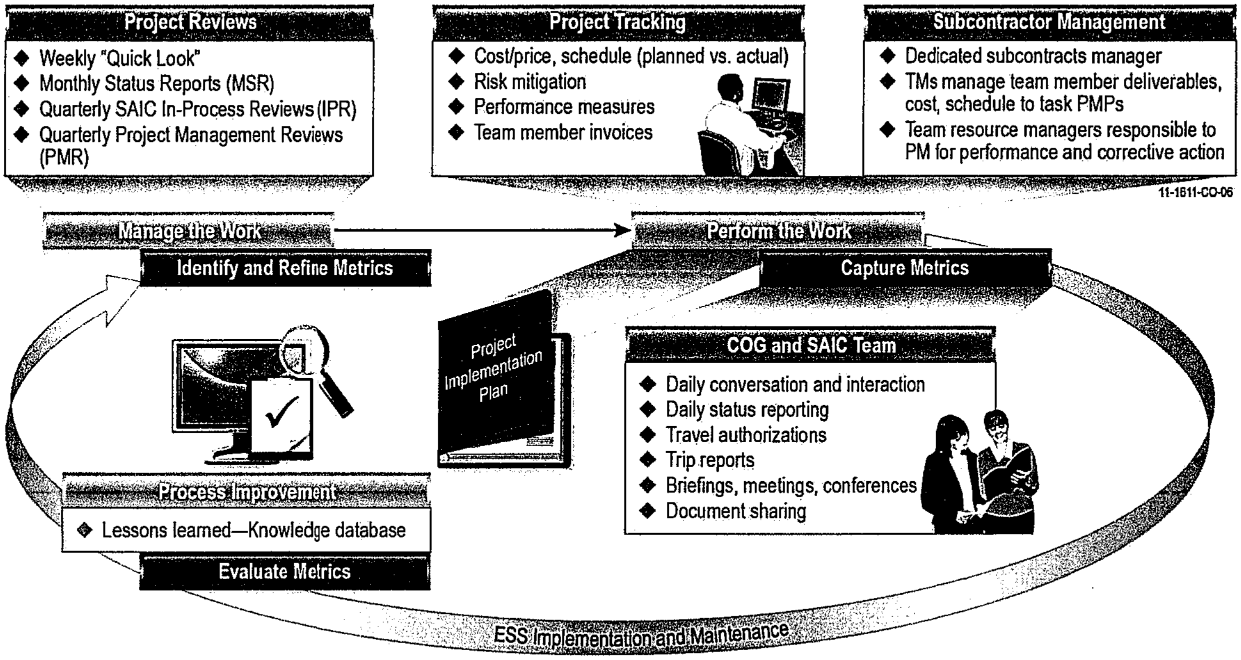


Figure 5-21. Project management combines flexibility with control and design phase management

Kick-Off Meeting

Mr. Zografos will hold a kick-off meeting at a location determined by the customer within 15 days following receipt of the Notice to Proceed (NTP). The kickoff meeting will serve as a working session for the SAIC Team to talk through the project goals, technical challenges, and mitigation options to determine the final and optimal path forward. At least two days prior to the kick-off meeting, the SAIC Team will provide the Oakland customer with a draft project schedule for review. The overall outcome of the kickoff meeting will be a refined and final schedule. The SAIC Key Staff will lead the kick-off meeting on behalf of the SAIC, with attendance from the Task Leads and any task advisors that will have a major role in shaping the development of the DAC.

Following completion of the kick-off meeting, Mr. Zografos will revise the draft schedule to address any comments or concerns raised during the kick-off meeting. He will also submit a final schedule within two weeks of the kick-off meeting.

Project Controls

SAIC's Project Control Mechanisms are built on industry-standard methodologies, specifically the Project Management Institute's Project Management Body of Knowledge (PMBOK). The methodologies have been effective, and we have taught them in SAIC University to the PM, Engineering Managers, QA Manager, Project Controller, Contracts Manager, and Subcontracts Manager assigned to this project.

Weekly Email Progress Updates

The development of the DAC will involve numerous activities spanning different members of the SAIC Team. The ensure that communications are continuously maintained as well as that the City-Port is aware of all activities occurring on the project, the SAIC Team plans to provide the City-Port with weekly email progress updates throughout the duration of this project. The purpose of these progress updates will be to provide a timely and detailed review of project status, activities, budget, risks, and immediate next steps. Further, these weekly updates will serve as a framework to the monthly meetings, described in Section 0, held between the City-Port and the SAIC Team.

Monthly Progress Reporting

Upon contract award, Mr. Zografos and Project Controllers will establish project charge numbers aligned with the project work breakdown structure (WBS) and project work packages. Mr. Zografos has the flexibility to organize the project charge numbers to achieve the level of granularity and visibility necessary to manage the project budget. SAIC uses the Deltek® Time Recording and Expense Reporting System with daily electronic time card entries. The software helps SAIC automate the collection, validation, approval, and processing of labor, expense, and human resources-related information. Automatic reminders are sent to any employee and his supervisor when timecards are not completed by the end of the business day.

Management Indicators

All SAIC projects use management indicators to help manage project status and communicate status to the customer. Project-level management indicators include status reports and schedules, as determined by Mr. Zografos, which are maintained in the Project Library.

Measurement and Reporting

Project control tracks all projects at the cost line and the revenue line for performance against budget. The PM is responsible for ensuring that all information is correct and maintained as required:

Minimum data requirements to be collected include:

- Contract type(s) used
- Actual costs and revenues (including subcontractor and offline company data) by period and actual cost of work performed (ACWP)
- Planned expenditures by period and budgeted cost of work scheduled (BCWS)
- Open commitments
- Funding per contract and change order
- Special project authorization (SPA) funding (SAIC own risk)
- Unbillable expenditures
- Estimate to complete (ETC)
- Estimate at completion (EAC)

Metrics to be reported include:

- Remaining funding
- Projected overruns
- Cost variance
- Completion variance
- Schedule variance
- Cost performance indices (CPIs).

This data and resulting metrics will be reported to business unit senior management in the project review format quarterly and will be tracked biweekly by the PM's organization.

Communications

The SAIC Team will initiate a monthly conference call with the City-Port to discuss all activities that occurred during the previous month. This call will be attended by the SAIC Team PM as well as any Task or subcontractor leads providing support during the previous month. The purpose of these calls will be to provide an opportunity for a more detailed discussed on the weekly email progress report updates as well as other topics or concerns as required by the City-Port. The SAIC Team will provide meeting summary notes to the City-Port following the completion of each meeting.

Further, SAIC will initiate a weekly conferences with subcontractors to cover the SAIC and subcontractor technical and project management status. The meeting will be chaired by SAIC's PM or his designated representative and attended by representatives from all subcontractors working during activities for that week as well as SAIC's Subcontract Manager. Issues that require resolution will be followed up by e-mail and/or direct contact or discussion.

Additionally, regular Construction Lead meetings will be attended by BBI Construction, SAIC's Program Manager, and, when necessary, the SAIC Technical Lead Systems Engineer. The PART-B Construction Lead, Mr. McCoy will produce meeting notes and will provide the notes to SAIC; these notes also will be discussed at the monthly meetings with the City-Port. Changes to the project schedule will be captured by the Project Controller with input from the applicable subcontractors. The updated schedule will be posted to the SharePoint site and included in the monthly status report to the City-Port.

Deliverables and Milestones

The SAIC Team will produce the following deliverables during Task 1:

- Kick-off meeting and meeting summary notes,
- Final project schedule,
- Weekly progress reporting updates delivered by email,
- Monthly Meetings with the port and meeting summary notes, and
- Monthly progress reports.

5.7.2 PART B: Design-Build Existing Building Improvements (EBI)

In this section 5.7.3 the SAIC team presents our proposed delivery approach to meeting the requirements for the PART-B Design-Build Existing Building Improvements (EBI). As an overview, this sub-section provides detail information as to what we propose to deliver as well as detail on how we propose to get the work completed to satisfactorily meet and satisfy the requirements for the PART-B EBI work scope.

The detailed delivery descriptions and approach information contained herein this sub-section is organized to address the following areas as follows:

SECTION REF.	PART-B EBI	SAIC TEAMMEMBER(s)
5.7.3.1	Construction Services	BBI Construction (LBE)
5.7.3.2	Architecture Design Services	Michael Willis Associates
5.7.3.3	Electrical – Video Wall Display System	Beaman's Inc. (SLBE) SAIC team Audio Visual

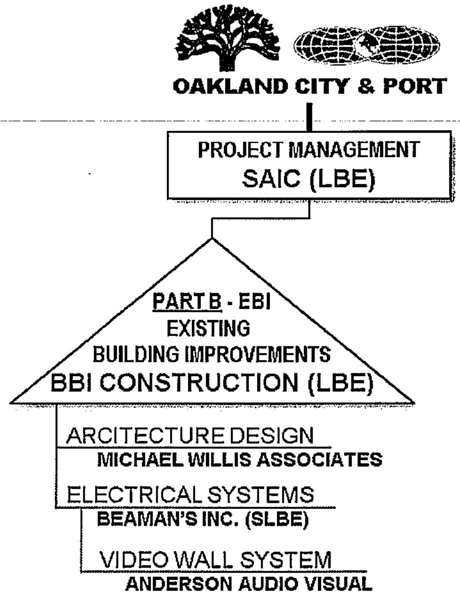


Figure 5-22. PART-B Roles and Responsibilities.

17-Week PART-B EBI Delivery Schedule

SAIC team has developed the 17 week delivery schedule for the PART-B Existing Building Improvements (EBI) that includes the completion of the construction tenant improvements and the design/build/implementation of the video display wall system. Figure 5-23 depicts the work scope areas covered by the 17 Week PART-B EBI Delivery Schedule.

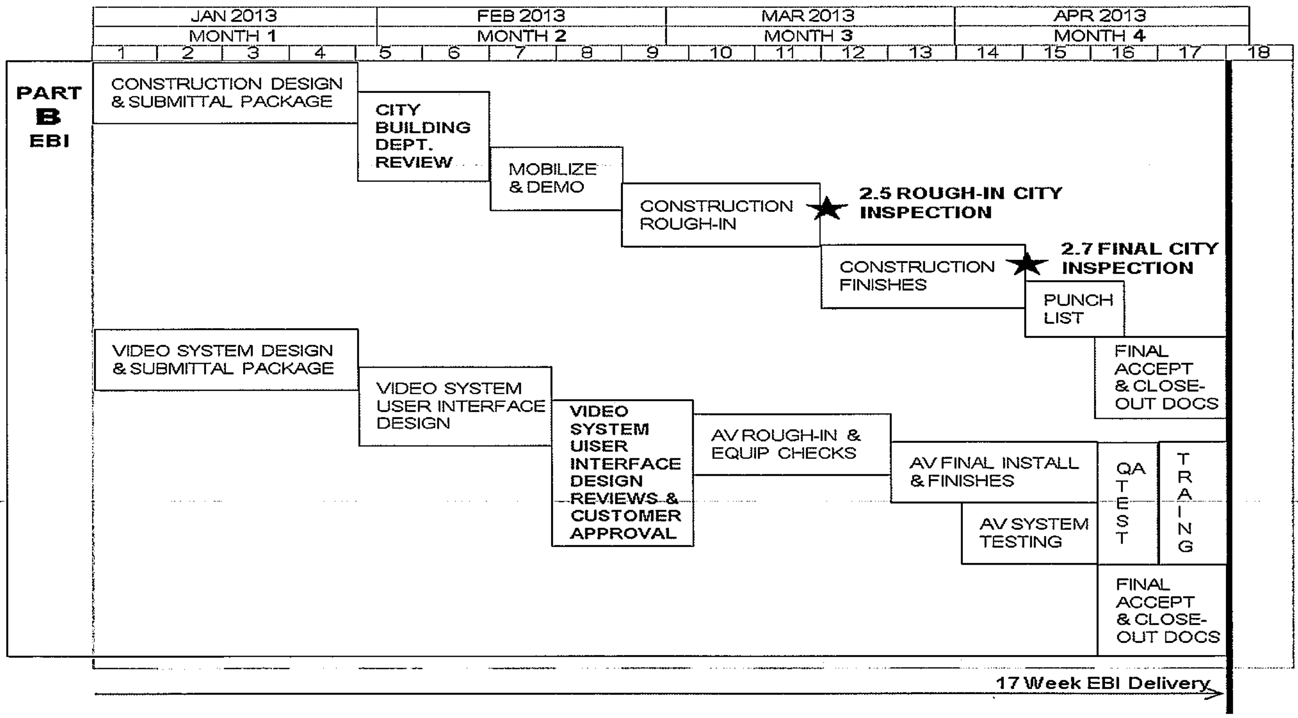


Figure 5-23. 17 Week PART-B EBI Delivery Schedule