425 S. Palos Verdes Street

Post Office Box 151

San Pedro, CA 90733-0151

Tel/TDD 310 SEA-PORT

www.portoflosangeles.org

February 15, 2006

CITY OF LOS ANGELES
RECEIVED
FEB 16 2006
ENGINEERING DIVISION
HARBOR DEPARTMENT

6/06757

Mr. Gill Hicks
Port of Long Beach
925 Harbor Plaza
Long Beach, CA 90802

Mr. John Doherty
Alameda Corridor Transportation Authority
1 Civic Plaza, 3rd Floor
Carson, CA 90745

SUBJECT: AGREEMENT NO. 2459 BETWEEN THE CITY OF LOS ANGELES AND THE CITY OF LONG BEACH AND THE ALAMEDA CORRIDOR TRANSPORTATION AUTHORITY TO SHARE COSTS FOR THE ADVANCED TRANSPORTATION MANAGEMENT INFORMATION AND SECURITY SYSTEM

At the special meeting held on Monday, December 12, 2005, the Los Angeles Board of Harbor Commissioners resolved that Agreement No. 2459 between the City of Los Angeles and the City of Long Beach and the Alameda Corridor Transportation Authority, be approved and authorized for execution.

Your executed copy of Agreement No. 2459 is enclosed for your files. (The Council review period ended on December 21, 2005.)

Very truly yours,

Audrey H. Yamaki

AUDREY YAMAKI
Commission Secretary

AY:kn
Enclosure

bcc: Audit Controller Demand, encs.
Treasury Mgmt., encs.
Risk Mgmt., encs.
Engineering, encs.
Sr. Asst. City Attorney, encs.
Accounting, encs.
Purchasing, encs.

12-12-05
11

RECOMMENDATION APPROVED
AND AGREEMENT NO. 2459 APPROVED
BY THE BOARD OF HARBOR COMMISSIONERS

December 12, 2005

Audrey H. Yamaki
SECRETARY

Transmittal No. 1

Executive Director's
Report to the
Board of Harbor Commissioners

DATE: **December 6, 2005**

SUBJECT: **APPROVAL OF AGREEMENT BETWEEN THE CITY OF LOS ANGELES, THE CITY OF LONG BEACH AND THE ALAMEDA CORRIDOR TRANSPORTATION AUTHORITY TO SHARE COSTS FOR THE ADVANCED TRANSPORTATION MANAGEMENT INFORMATION AND SECURITY SYSTEM**

SUMMARY:

The Advanced Transportation Management Information and Security System (ATMIS) will develop and apply Intelligent Transportation Systems (ITS) to improve traffic conditions in the Port Complex and its vicinity. The ATMIS system will be utilized to distribute "real time" traffic information and advanced warning of incidents to motorists, other agencies and private information providers via changeable message signs (CMS), internet video and other appropriate sharing means. The total cost of this agreement will not exceed $3,300,000, with the cost shared equally among the City of Los Angeles, through the Port of Los Angeles, Port of Long Beach, and Alameda Corridor Transportation Authority. The Port of Long Beach will oversee the design, implementation, and payment to designers and contractors for this project.

RECOMMENDATION:

It is recommended that the Board of Commissioners:

1. Approve the reimbursement of $1,100,000 to the Port of Long Beach pursuant to Port of Los Angeles, Port of Long Beach and Alameda Corridor Transportation Authority Cost Sharing Agreement; and

2. Authorize the Executive Director to execute and the Board Secretary to attest to an agreement covering the aforementioned transaction for and on behalf of the Board.

DISCUSSION:

The ATMIS project was formulated out of the I-710 Major Corridor Study which identified the San Pedro Bay Ports as likely candidates to benefit from Intelligent Transportation Systems (ITS) improvements. The project has been certified in the Caltrans Statewide Goods Movement ITS Action Plan and is contained in Caltrans' Global Gateways Development Program. The project is a component of the Port's Transportation Plan to improve traffic flow and goods movement for both Ports as well as the adjacent regional transportation system. The objective of this project is to inform motorists leaving the Port complex of "real time" traffic conditions in the Port area and vicinity, and to provide them with advanced warning about incidents in the Ports and on the regional freeway system. The project will exchange data, video, and information with local, subregional and regional agencies, and private information providers through a hybrid network of

SUBJECT: **APPROVAL OF AGREEMENT BETWEEN THE CITY OF LOS ANGELES, THE CITY OF LONG BEACH AND THE ALAMEDA CORRIDOR TRANSPORTATION AUTHORITY TO SHARE COSTS FOR THE ADVANCED TRANSPORTATION MANAGEMENT INFORMATION AND SECURITY SYSTEM**

wireline and wireless communication networks. As part of this project, there will be approximately 16 closed circuit cameras, 10 queue detectors, and 16 changeable message signs installed on Port of Los Angeles, Port of Long Beach, and City of Los Angeles, and City of Long Beach jurisdiction. The Port of Los Angeles, Port of Long Beach, and the Alameda Corridor Transportation Authority have committed to sharing the cost of design, implementation, and software in the amount of $3,300,000.

2. The project is currently funded by the various funding sources listed below:

ATMIS Cost Sharing Agreement (Design, Implementation and Software)

Port of Los Angeles	$1,100,000
Port of Long Beach	$1,100,000
Alameda Corridor Transportation Authority	$1,100,000
Subtotal	$3,300,000

Grant Funding (Construction)

Metro	$4,236,000
Caltrans	$ 414,000
Subtotal	$4,650,000

TOTAL PROJECT FUNDS $7,950,000

3. The total cost for this Cost Sharing Agreement will not exceed $3,300,000 and the costs will be equally shared among the Port of Los Angeles, the Port of Long Beach and the Alameda Corridor Transportation Authority. The $3,300,000 from this Cost Sharing Agreement will act as matching funds to the grant funding received from Caltrans and Metro and will be used for project design, implementation and software. The $4,650,000 grant funding from Caltrans and Metro will be used for project construction. The recommended $1,100,000 to be transferred to the Port of Long Beach is the Port of Los Angeles' share of the total project cost. Therefore, the Port of Los Angeles cost will not exceed $1,100,000.

ENVIRONMENTAL ASSESSMENT:

The proposed action is an administrative action for the transfer of money to the Port of Long Beach. The underlying activity is the installation of traffic signage and devices, as such, the Director of Environmental Management has determined that the proposed activities are exempt from the California Environmental Quality Act (CEQA) in accordance with Article II, Section 2(f) and Article III, Class 1(15) of the Los Angeles City CEQA Guidelines.

DATE: **December 6, 2005**

SUBJECT: **APPROVAL OF AGREEMENT BETWEEN THE CITY OF LOS ANGELES, THE CITY OF LONG BEACH AND THE ALAMEDA CORRIDOR TRANSPORTATION AUTHORITY TO SHARE COSTS FOR THE ADVANCED TRANSPORTATION MANAGEMENT INFORMATION AND SECURITY SYSTEM**

FINANCIAL IMPACT:

Funds for the Port of Los Angeles portion of this agreement is available in Account No. 54220, Center No. 1172, Program No. 000. Funding for Fiscal Year 2007 will be budgeted in the Fiscal Year 2007 Capital Improvement Program Budget. Funds are expected to be spent as follows:

Fiscal Year 05/06	-	$550,000
Fiscal Year 06/07	-	$550,000

TIDELANDS TRUST AND LEGAL ISSUES:

The Agreement was approved as to form by the Los Angeles office of the City Attorney and the Port of Long Beach.

TRANSMITTAL:

1. Map of project field element locations
2. Agreement between the City of Los Angeles and the City of Long Beach and the Alameda Corridor Transportation Authority to share costs for the Advanced Transportation Management Information and Security System (ATMIS)

ANTONIO V. GIOIELLO
Chief Harbor Engineer

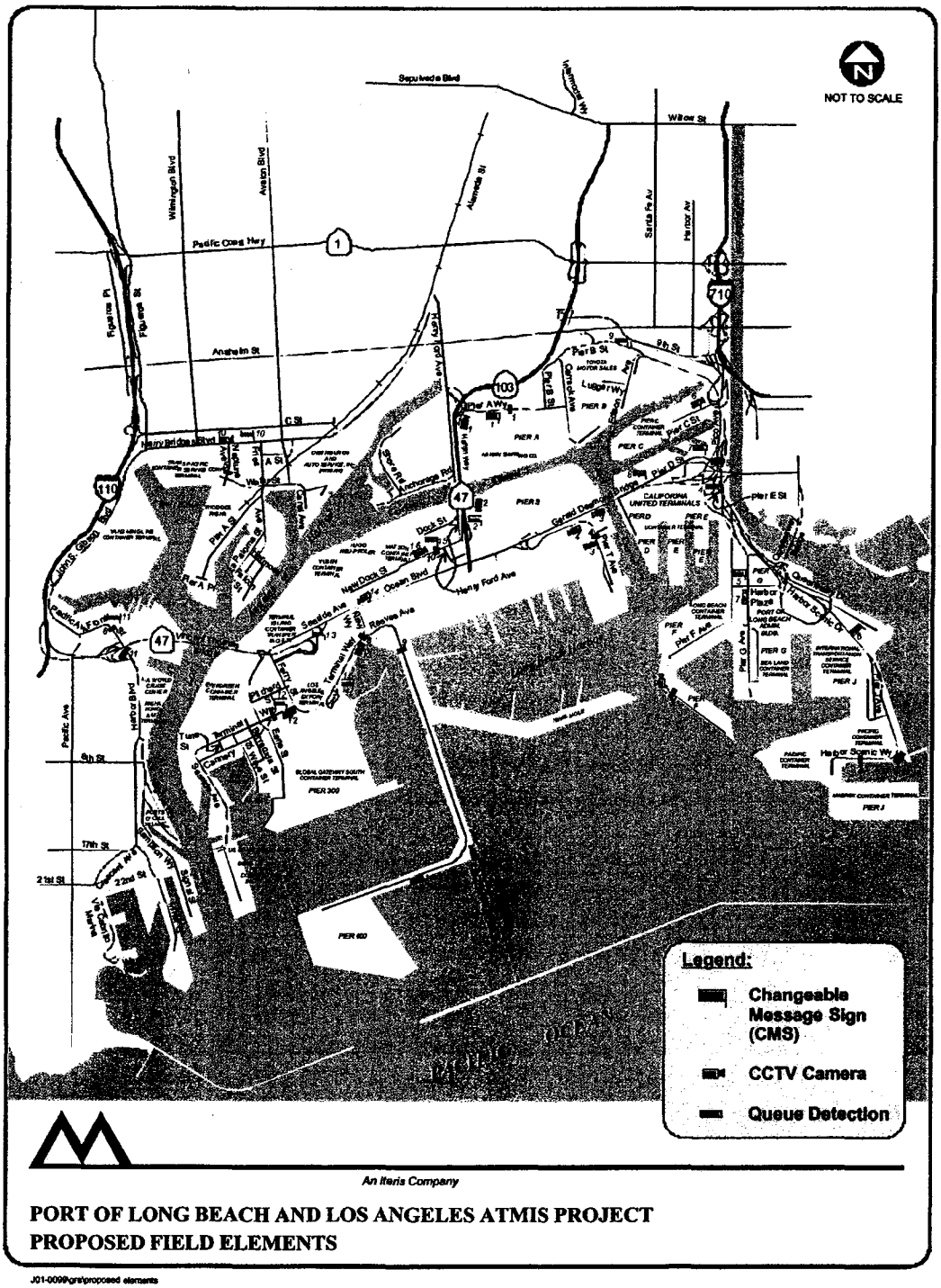
STACEY G. JONES
Dir. of Engineering Development

GM:py
24663b01
24663-1-5

APPROVED:

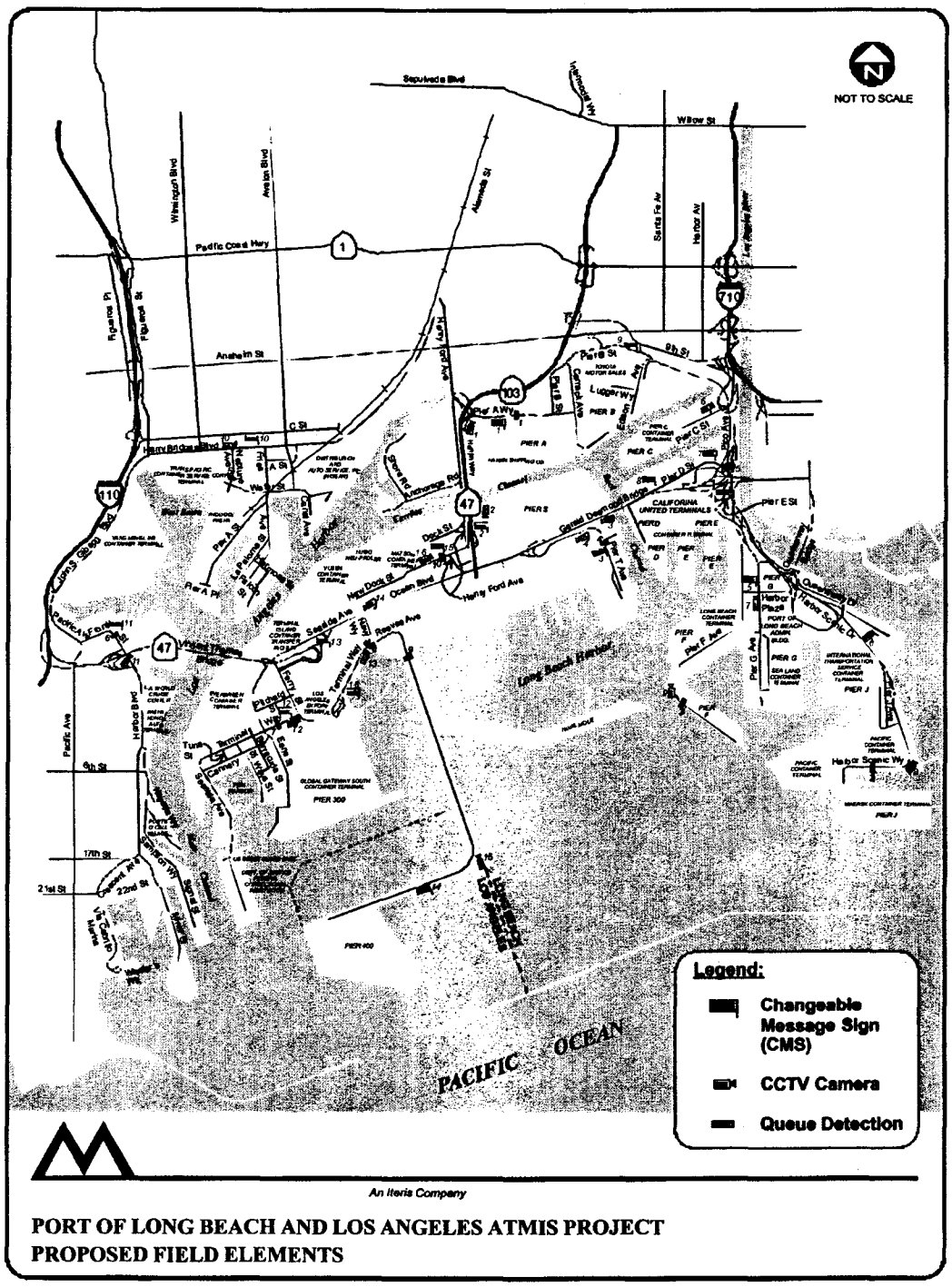
BRUCE E. SEATON
Interim Executive Director

Attachment
Map of Field Elements
PORTS OF LONG BEACH AND LOS ANGELES
ADVANCED TRANSPORTATION MANAGEMENT, INFORMATION, AND SECURITY SYSTEM (ATMIS)



J01-0099\gis\proposed elements

Attachment
Map of Field Elements
PORTS OF LONG BEACH AND LOS ANGELES
ADVANCED TRANSPORTATION MANAGEMENT, INFORMATION, AND SECURITY SYSTEM (ATMIS)



BHC Copy

Transmittal No.

Harbor Department
Agreement 2459
City of Los Angeles

COST SHARING AGREEMENT BETWEEN THE CITY OF LONG BEACH, THE CITY OF LOS ANGELES, AND THE ALAMEDA CORRIDOR TRANSPORTATION AUTHORITY FOR AN ADVANCED TRANSPORTATION MANAGEMENT INFORMATION AND SECURITY SYSTEM

THIS COST SHARING AGREEMENT ("Agreement") is made and entered into as of the 12th day of December, 2005, by and among the CITY OF LONG BEACH, a municipal corporation, acting by and through its Board of Harbor Commissioners ("Long Beach"), the CITY OF LOS ANGELES, a municipal corporation, acting by and through its Board of Harbor Commissioners ("Los Angeles"), and the ALAMEDA CORRIDOR TRANSPORTATION AUTHORITY, a joint powers authority created under the laws of the State of California ("ACTA").

1. RECITALS. This Agreement is made with respect to the following facts and objectives:

1.1 Long Beach has developed and circulated a Request for Proposals to identify a consultant ("Consultant") for the design and implementation of an Advanced Transportation Management Information and Security System ("ATMIS System") (the "Project"). The ATMIS System is expected to improve traffic conditions, safety and security for Long Beach and Los Angeles (collectively, "Cities") and the adjacent regional transportation system.

1.2 Staff at Long Beach has selected Siemens Energy & Automation, Inc. as the Consultant and expects to request that the Board of Harbor Commissioners of Long Beach authorize Long Beach to enter into a contract with Consultant ("Consultant Contract").

1.3 The information or work product resulting from the ATMIS System will enable the Cities to better manage the flow of traffic in and

Robert E. Shannon
City Attorney of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802-4664
Telephone (562) 570-2200

around the ports as well as the adjacent regional transportation system and provide planning, engineering, and environmental data necessary for the future development of areas of concern to Long Beach, Los Angeles, and ACTA.

1.4 Long Beach, Los Angeles, and ACTA are willing to share the costs associated with the development of the ATMIS System as provided in this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth below, the parties do hereby agree as follows:

2. SCOPE OF JOINT EFFORT.

A. The primary components of the Project include an Advanced Traffic Management System, an Advanced Traveler Information System, a Communication System, System Architecture and ITS Standards. The Project is more fully described in Exhibit "A" attached hereto and incorporated by this reference. The ATMIS System is a necessary step to evaluate the reliability and predictability of existing traffic control measures of the Cities. The steps required to complete the project are listed and described in Exhibit "B" attached and incorporated by this reference. The Scope of Work of the Project is attached hereto as Exhibit "C" and incorporated herein by this reference. The parties anticipate that the Project will be funded as described in Exhibit "D" attached hereto and incorporated by this reference. The last estimate for the Project Costs is attached hereto as Exhibit "E" and incorporated herein by this reference.

B. The work associated with the design of the ATMIS System will follow a systems engineering approach and will be the means by which the Cities can obtain sufficient technical information concerning each element of the ATMIS System to confirm, reject or modify the identified elements of the ATMIS System. The ATMIS System will be the means by which the Cities can improve the reliability and predictability of their respective transportation systems, the adjacent regional transportation system, and improve safety and security for each of the parties to this Agreement.

Robert E. Shannon
City Attorney of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802-4664
Telephone (562) 570-2200

3. PREPARATION OF SCOPE OF WORK AND AWARD OF CONTRACT.

A. Cities agree to establish a "Project Coordinating Committee" ("Coordinating Committee") consisting of one (1) representative from each City for the purpose of establishing mutually satisfactory scopes of work related to this Agreement for each separable element of work to be undertaken. ACTA shall receive written notices of all meetings of the Coordinating Committee and shall be entitled to attend all such meetings, but shall not be a voting member of the Coordinating Committee.

B. The Consultant Contract shall be in a form substantially similar to that set forth in Exhibit "F" attached hereto and incorporated by this reference. All costs and expenses associated with the Consultant Contract, any other contract executed in connection with the Project, and other Project expenses shall be shared in accordance with the provisions of Paragraph 5 of this Agreement.

4. ADMINISTRATION OF CONSULTANT CONTRACT.

A. Long Beach staff shall administer the Consultant Contract and consistent with paragraph 6D below, Long Beach shall absorb its staff costs associated with contract administration.

B. All correspondence from the Consultant to Long Beach shall be copied to Los Angeles and ACTA. Any written instructions from Long Beach to the Consultant shall be copied to Los Angeles and ACTA.

5. REIMBURSEMENT.

A. It shall be the responsibility of Long Beach to pay all monies due the Consultant under the terms of the Consultant Contract and to also pay any other expenses related to the design, construction and implementation of the ATMIS System up to a maximum of $3,300,000, two-thirds of which amount shall be reimbursed by Los Angeles and ACTA as set forth below. Los Angeles agrees to reimburse Long Beach for one-third (1/3) of all Project expenses paid by Long Beach to Consultant or any other third party, and likewise ACTA agrees to reimburse Long Beach for one-third (1/3) of all Project

Robert E. Shannon
City Attorney of Long Beach
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Long Beach, California 90802-4664
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expenses paid by Long Beach to a Consultant or any other third party; however, Los Angeles's share of Project expenses shall not exceed $1,100,000 and ACTA's share of Project expenses shall not exceed $1,100,000. Los Angeles and ACTA shall reimburse Long Beach within thirty (30) days of receipt of an invoice or billing statement sent by Long Beach. Long Beach shall bill or invoice Los Angeles and ACTA only for those Project expenses paid by Long Beach. If Long Beach anticipates or ascertains that its Project expenses, exclusive of sharing by Los Angeles and ACTA, are likely to exceed or have exceeded $3,300,000, Long Beach shall notify Los Angeles and ACTA and discuss with Los Angeles and ACTA amending this Agreement to increase the amounts to be paid by Long Beach, Los Angeles and ACTA as regards the Project.

B. If a dispute arises as to the scope of work, the Coordinating Committee shall resolve such dispute. If the voting members of the Coordinating Committee cannot resolve a given dispute, then the dispute shall be resolved by the Executive Directors of the two ports. If the Executive Directors cannot reach agreement, then either City may withdraw its participation in the sharing of costs and Long Beach, Los Angeles and ACTA shall be liable only for the percent of actual work completed and costs accrued, up to the date of withdrawal.

6. RIGHTS AND OBLIGATIONS.

A. Ownership of Data and Records. The parties agree that all records, exhibits, work product and all related data collected or reproduced by a consultant ("data and records"), for which the costs are shared pursuant to this Agreement, are to be the shared property of the Cities and ACTA. Said property (data and records) shall not be released to anyone or used by anyone other than the Cities or ACTA for any purpose or project without the written authorization of the Executive Director of each City or of the Chief Executive Officer of ACTA or a designee of such director or officer, except to the extent that such data and records may be classified as public records under the California Government Code and except for use and release of such data and records for the benefit of either City or ACTA.

Robert E. Shannon
City Attorney of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802-4664
Telephone (562) 570-2200

B. Notices. Any notices to be given under or pursuant to this Agreement shall be served by mail or by personal delivery. When so given, such notice shall be effective two calendar days after the date of mailing or upon personal delivery, if not mailed. For the purpose hereof, unless otherwise provided in writing by the parties hereto, the address for Long Beach and the proper person to receive any such notice on its behalf is the Executive Director, Port of Long Beach, P.O. Box 570, Long Beach, California 90802. For Los Angeles, the proper person to receive notices on its behalf is the Executive Director, Port of Los Angeles, P.O. Box 151, San Pedro, California 90733-0151. For ACTA, the proper person to receive notices on its behalf is the Chief Executive Officer, Alameda Corridor Transportation Authority, One Civic Plaza, Suite 350, Carson, California 90745.

C. Termination. Any of the parties to this Agreement shall have the right to terminate this Agreement upon ten (10) calendar days written notice to the other parties provided, however, such termination shall not affect the respective obligations of the terminating party for any reimbursement due under this Agreement as of the effective date of such termination.

D. Cooperation and Port Staff Costs. Long Beach, Los Angeles, and ACTA pledge to fully cooperate with each other and the Consultant. Long Beach, Los Angeles, and ACTA each agrees to absorb its respective staff costs necessary to implement and meet the obligations of this Agreement.

7. TERM. The term of this Agreement shall commence on the date of last execution by the parties and shall terminate upon completion of the ATMIS System or upon termination by a party as provided for in this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement

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//

Robert E. Shannon
City Attorney of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802-4664
Telephone (562) 570-2200

on the date first set forth above.

City of Los Angeles, a municipal corporation, Acting By and Through its Board of Harbor Commissioners

Dated: 2/14, 2006

By: _____
Executive Director

"Los Angeles"

_____
Board Secretary

City of Long Beach, a municipal corporation, Acting By and Through its Board of Harbor Commissioners

Dated: 12-22, 2005

By: _____
Executive Director

"Long Beach"

APPROVED AS TO FORM:
Los Angeles City Attorney

By: _____ 2/10/06

Its: Deputy

APPROVED AS TO FORM:
Long Beach City Attorney

By: _____

Its: Deputy City Attorney
12-15-05

Alameda Corridor Transportation Authority, a joint powers authority

Dated OCT 19, 2005

By: _____
Chief Executive Officer

"ACTA"

ATTEST:

By: _____

Its: Paralegal

ACTA (Co-General Counsel)

Account #	52220	W.O #	24663
Ord/Div #	1172	Job Fac. #	203-14
Proj/Prog #	000		203-24

Budget FY:	Amount
05/06	350,000
06/07	550,000

For Acct Div. Use Only:
Verified Funds Available
2/13/06

CMG:rjr08/30/05#05-01509/04-01934
L:\APPS\CtyLaw32\WPDOCS\D026\P004\00077368.WPD

Robert E. Shannon
City Attorney of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802-4664
Telephone (562) 570-2200

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Los Angeles } ss.

On Oct 19, 2005 (Date) before me, Ruby J. Williams, Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public"),

personally appeared John F. Doherty (Name(s) of Signer(s)),

☑ personally known to me

☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

RUBY J. WILLIAMS
Commission # 1574765
Notary Public - California
Los Angeles County
My Comm. Expires May 24, 2009

Place Notary Seal Above

WITNESS my hand and official seal.

Ruby J. Williams
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Cost Sharing Agreement

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Los Angeles } ss.

On Oct 19, 2005 (Date) before me, Ruby J. Williams, Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared Janine Garrison (Name(s) of Signer(s))

☑ personally known to me

☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

RUBY J. WILLIAMS
Commission # 1574765
Notary Public - California
Los Angeles County
My Comm. Expires May 24, 2009

Place Notary Seal Above

WITNESS my hand and official seal.

Ruby J. Williams
Signature of Notary Public

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Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____
☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of _____ } ss.

On _____ (Date), before me, _____ (Name and Title of Officer (e.g., "Jane Doe, Notary Public")),

personally appeared _____ (Name(s) of Signer(s)),

_____

☐ personally known to me

☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Place Notary Seal Above

_____
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

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Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of _____ } ss.

On _____ (Date), before me, _____ (Name and Title of Officer (e.g., "Jane Doe, Notary Public")),

personally appeared _____ (Name(s) of Signer(s)),

_____

☐ personally known to me

☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Place Notary Seal Above

_____
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

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Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

EXHIBIT "A"

Project Description:

The Advanced Transportation Management Information and Security (ATMIS) System will develop and apply Intelligent Transportation Systems (ITS) to improve traffic flow for both Ports as well as the adjacent regional transportation system in the Harbor area. The Port of Long Beach, the Port of Los Angeles, and the Alameda Corridor Transportation Authority are the primary partners for this project. The ATMIS System consists of the following components:

1. Advanced Transportation Management System (ATMS)
2. Advanced Traveler Information System (ATIS)
3. Communication System

This ATMIS System shall monitor vehicle traffic conditions through the use of vehicle detection devices on ports area roadways and at the terminal gates. The ATMIS System shall distribute the traffic information to motorists, other agencies, and industry through the use of strategically placed changeable message signs, internet video, and appropriate data sharing means.

This project involves regional, subregional and local agencies, planning authorities, emergency response agencies, private information providers and different modes of transportation, such as trucking companies and railroads.

CMG:rmb
L-5/4-4-05(LBLAACTATRANSPORTSECURITY.EXA)05-01509

EXHIBIT "B"

Steps required to complete the ATMIS Project:

1. Release a Request for Proposals and subsequent selection of Consultant to act as System Manager.

2. Upon completion of Pre-Award Audit by Caltrans, proceed with final Contract negotiations, sign contract and issue Notice to Proceed to Consultant.

3. Perform Preliminary Design, including updating Operational Concept, defining User and System Functional Requirements, Alternative Analysis and Recommendations and Conceptual Design Plan.

4. Perform Detailed Design, including Field Elements Design and System Software Design.

5. Perform System Implementation, including Construction of Field Components, Software Development/Integration and System Deployment/Integration/Acceptance Testing.

6. System Documentation, Training and Warranty Period.

CMG:rmb
L-5/4-5-05(LBLAACTATRANSPORTSECURITY.EXB)05-01509

SIEMENS

The Ports of Long Beach/Los Angeles

Advanced Transportation Management, Information and Security System

Scope of Work

Final

Submitted To:

The Ports of Long Beach and Los Angeles

Submitted By:

Siemens ITS

In Association With:

Kimley-Horn & Associates, Inc.

LIN Consulting, Inc

MTM Logistics, Inc.

TranSmart Technologies, Inc.

Last Updated

June 28, 2005

EXHIBIT "C"

SIEMENS

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Introduction

The objective of the PORTS ATMIS System Project is to design and implement IT solutions to manage and control the movement of commercial vehicles within the Port while increasing security. It is envisioned that upon completion of this project, the following potential benefits would be achieved:

- Improved security and safety
- Improved incident response time
- Improved reliability and predictability of the transportation system
- Improved multimodal mobility
- Enhanced goods movement
- Reduced travel delay and emissions

The System will consist of the following five subsystems:

- ATMIS Central Hardware and Software
- Vehicle Surveillance System
- Information Dissemination
- Information Sharing
- Communications System

1. Advanced Transportation Management, Information and Security System (ATMIS) Central Hardware and Software

This component consists of the development, design, selection, and implementation of central hardware and software for a complete interjurisdictional ATMIS. It includes the hardware and software necessary to allow monitoring, controlling, and coordinating the operation of, surveillance systems, and traveler information displays to be deployed on the Ports' facilities. The system will be operated from individual agency work stations which will have traffic surveillance capabilities through detecting and monitoring traffic signal status (future), traffic congestion and incidents, and will display this information through an integrated map-based user interface. The system will also be able to detect equipment malfunctions which will enable the operator to initiate appropriate maintenance operation responses and various other responses to traffic events and congestion either manually or automatically.

It is anticipated that the system will provide real-time monitoring and control of connected field devices, real-time communication with selected external systems involved in travel information dissemination or cooperative traffic management, and levels of security to restrict access to unauthorized users. Associated procedures will enable a coordinated response to incidents, congestion, and special events on Ports facilities and surrounding arterials, and freeways. The system will connect to the County of Los Angeles Information Exchange Network (IEN) for data sharing purposes. If and when needed and feasible, the system will provide connections to the traffic signal systems at the Cities of Long Beach and Los Angeles, and Caltrans, to the container tracking system to be deployed by the West Coast MTO Discussion Agreement (WTCMODA) in the future, and with the Corridor-wide CVO system to be deployed by the Priority Corridor. The ATMIS system will provide truck and terminal operators with congestion and travel information regarding travel conditions on Ports and surrounding roadway facilities.

2. Vehicle Surveillance System

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The Project will provide a Vehicle Surveillance System through a combination of devices such as detection devices and closed circuit television cameras. These systems will allow collection of real-time traffic data and information at entrance and exit gates and at other key locations in the Ports where monitoring of traffic is needed. Vehicle detection will be used for both queue length monitoring and traffic flow (volume and occupancy) monitoring. The Project may also provide closed circuit television (CCTV) cameras where needed to allow the Ports staff to monitor traffic through the Ports and confirm incidents. Where appropriate, cameras will be capable of pan-tilt-zoom control. It will also be possible for agencies to share images from any CCTV cameras. The Project will develop Memorandums of Understanding for interjurisdictional sharing of video and data.

The amount, type, and location of surveillance devices will be recommended by the Siemens ITS Team after careful consideration of the user needs, system functional requirements, and available funds.

3. Travel Information Dissemination

The Project will distribute relevant information to motorists using Port roadways and terminal entrances, with the objective of providing the advance information needed for more efficient use of these facilities and avoiding overcrowding. Changeable message signs will be installed on the Ports facilities and if feasible, on surrounding non-Port controlled roadways. If feasible, existing changeable message signs on non-Port facilities will also be used for this purpose. The ATMIS system will allow the Ports staff to control and monitor the CMSs in the Ports area and allow monitoring of signs in the non-Ports facilities. The Project will also develop Memorandums of Understanding for interjurisdictional operations of CMSs.

In addition to CMSs, the Project will explore the use of other travel information dissemination devices such as Highway Advisory Radio (HAR) and Highway Advisory Telephone (HAT) for their applicability to meet Project objectives.

The Project will also provide an automatic flow of relevant traffic information to related Information Service Providers; including eModal and MTC Voyager.

4. Information Sharing

The ATMIS Project will allow the Ports to receive traffic information which includes congestion, CCTV images and CMS status information from surrounding facilities. Interfaces will be developed with the Los Angeles County's Information Exchange Network (IEN) and to other external systems such as Caltrans' Freeway Management System. The ATMIS system will also be capable of providing information collected by the Ports to other agencies in a standard format.

5. Communication System

The project will provide a communications system capable of supporting the other components. The communications network will support center-to-field communications with devices such as traffic signals, vehicle detectors, CCTV cameras, and changeable message signs. Center-to-center communication links will also be provided as needed with computer systems operated by others, such as Caltrans, Los Angeles County, eModal, and MTC Voyager.

Design of the communications system will consider both present and future ITS elements. Primary considerations include the expandability of the system to include other potential stakeholders and users, additional numbers and types of field devices. Possible communications medium technology may include, but not be limited to, twisted pair cable, leased telephone lines, fiber optic cables, spread spectrum radio, or a combination of the above.

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Any recommendations made by the Siemens ITS Team for this project shall be for the implementation of "open systems" and shall be made after careful review of potentially suitable systems. This includes completed systems or systems currently under development.

This document presents the scope of work for designing, deploying and integrating Port of Long Beach/Los Angeles ATMIS System components. The work will be carried out in four distinct phases. In addition to the specific tasks to be carried out in each phase, the Project Management task will continue throughout the Project and is described first. In addition, Siemens ITS has in place a Quality Control and Quality Assurance Program which will govern all activities on the Project.

Task 0: Project Management

Objective: To ensure that the project progresses according to schedule and budget; ensure that integration with other relevant projects is achieved.

Deliverables:

- Project Management Plan
- Systems Engineering Management Plan
- Technical presentations/handouts (once a months)
- Monthly Progress Meetings, Meeting Agendas and Minutes (one a month)
- Monthly Progress Reports with Updated Schedule every three months
- Final Report
- Claims Billings and Financial Information

The Project management shall be conducted by Warren Tighe, PE, Project Manager, Arti Gupta, Ph.d., Deputy Project Manager, and Pierre Pretorius, PE, Deputy Project Manager. Warren and/or Arti will attend all monthly status meetings with the Ports, with Pierre joining them at these meetings as needed. Meetings with the Project agencies will always be attended by Arti, with Warren and Pierre joining them as appropriate.

The Siemens ITS Team Project Management Team shall be responsible for representation of the project to those meetings identified by the Ports as being necessary to attend. This is recognized as being an essential part of ensuring adequate knowledge of the project by other organizations and activities. Work shall include the preparation of presentation materials and appropriate handouts. Prior approval shall be obtained from the Ports for the use of any material.

Similarly, the Siemens ITS Team shall attend any specific project meetings requested by the Ports such as those required for the regular reporting to the Ports and the project agencies. In these cases, additional work shall be to prepare meeting agendas and minutes. Minutes shall comprise brief summaries of the discussed items together with action items (action/responsibility/due date). These shall be submitted to the Ports for distribution. E-mail shall be used extensively for the distribution of project material. Siemens ITS shall construct and maintain a project e-mail list of prime agency contacts.

The Siemens ITS Team shall attend monthly project meetings with the Ports staff. The Project Team shall present project progress including updated project schedule and discuss project issues with the Ports at these meetings for the purposes of receiving the Ports' input.

The Siemens ITS Team shall also provide support to the Ports at Ports Commission meetings as required.

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The Team shall also prepare invoices, and other financial information for review and approval by the Ports.

In order to aid project communications, Siemens ITS shall create a project web-site as part of the firm's web site. Web site content shall include project background, project scope of work and schedule, and list the agency contacts. In addition, project status reports, minutes of meetings and project deliverables shall be posted on the site for ease of access by the agencies. A shared web log shall facilitate capture of informal notes and annotations of project activities that otherwise may fail to be recorded in a sharable format.

Project Coordination

The Siemens ITS Team shall coordinate technical design activities with the involved public agencies for each system component of the project. This shall include:

- Coordination with the Ports of Long Beach and Los Angeles, the City of Long Beach, the City of Los Angeles and Caltrans to gather information on on-going or planned activities that affect this project.
- Coordination with public and private agencies involved with local and regional ITS projects including Caltrans, the County of Los Angeles, and the Los Angeles County Metropolitan Transportation Authority (LACMTA), to assure coordination of effort in design and construction.
- Coordination with other regional and subregional projects which may affect this project such as the South Bay Forum Project, the I-710/Atlantic Boulevard ATMS project, the Information Exchange Network (IEN) Project, RIITS, and Corridor-wide CVO Project.

Project Schedule and Budget

Project tracking starts with the preparation of a comprehensive Project Management Plan (PMP and Systems Engineering Management Plan (SEMP) based on the systems engineering process. The Siemens ITS Team shall generate a PMP and SEMP as follows:

PMP will address the following:

- Statement of Work, project tasks, and responsibilities
- List of Deliverables
- Work Breakdown Structure
- Activity Breakdown Structure
- Resource Tracking
- Glossary of Terms
- Schedule, Task dependencies
- Ports responsibilities
- Project Team Organization, contact information for key staff on the Project, the roles and responsibilities of each Team member firm on the project.
- Project Control Method, Quality Control Plan for the Project
- Software development process

SEMP will address the following:

- Technical milestones, inter-task relationships,
- intra-project relationships and inter-project relationships.
- Management Plans (configuration, interface, risk, training)

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- Systems Engineering life cycle model
- Gate and exit criteria (decision points)
- Technical plans (integration, installation, etc.)
- System description
- Specification tree
- Trade Studies

PMP and SEMP will be living document and will be expanded and amended during the course of the project as needed.

For each Team member firm, the staff shall be identified with specific responsibilities for deliverable submittal as well as review for quality assurance purposes. For each task, a work break down structure which would define the work elements in small manageable chunks. For each of these work elements schedule, deliverable and level of effort by staff category shall be defined.

PMP and SEMP shall be used to track the project progress. The need for remedial measures shall be identified and those measures enacted; from time to time, PMP and SEMP may need to be amended to ensure that a viable and agreed management plan is maintained.

Project progress shall be reported on a regular basis. The Project Manager will have primary responsibility to insure that continuous and accurate updates are made to PMP and SEMP and reflected in the internal project accounting systems. Progress status, will be monitored and analyzed using internal reporting and will include the monitoring of sub-consultant staff and progress. Updates will be made through a biweekly status meeting with all task leaders. The Project Manager will analyze progress and allocate resources between ongoing tasks as appropriate.

PMP and SEMP will then form the basis for the monthly reporting and review of progress with the Ports. The PMP will also include the format of progress reports and the methods for measuring project progress. The Project Manager will prepare and submit written monthly progress report that details the status of work being performed by the Siemens ITS Team. These reports, in a form acceptable to the Ports, will include: a narrative of the tasks accomplished in that month, an outline of the tasks anticipated to be accomplished in the next month, a summary of problems which occurred during the previous month, identification of any anticipated problems, an updated project schedule, an invoice detailing resources spent, and a summary of the percent completion for each task of the project.

The PMP will include Siemens ITS's software development process which will include details of version control and configuration management.

The SEMP will include descriptions of the configuration plans, training requirements and risk assessment of any issues pertaining to design and implementation of the project. The SEMP will also document the systems engineering process that would be used for the project with relevant metrics.

In addition, as part of the Siemens' risk management plan, Siemens ITS will prepare documents detailing the risks associated with the project approach and identify mitigation actions. This information will be shared with the Ports' staff.

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Phase 1: Conceptual Design

In this Phase, the Siemens ITS Team will develop a conceptual design for all Project components. This will be based on updates to Concept of Operations developed previously by the Ports, identification of system requirements, a system architecture, consideration of standards, and an alternatives analysis. The conceptual design will be used to prepare an operation, management and maintenance plan, and detailed requirements for use in detailed design. The Conceptual Design will also serve as the Basis of Design Document, which is used by the Port to gauge the design. The document will identify both technical and engineering issues which should be resolved before starting detailed design.

Task 1.1: Update Operational Concept

Objective: To identify how the Ports and other agencies will collect, distribute, and exchange traffic flow, and cargo flow information to manage traffic through the Ports area

Deliverables:

- 20 meetings with the identified stakeholders– Meeting agenda, and minutes from these meetings.
- Draft Operational Concept Report
- Final Operational Concept Report
- Draft System Validation Plan

The Siemens ITS Team will revise and finalize the Operational Concepts portion of the existing "Concept of Operations" report previously prepared for the Ports. The Operational Concept will identify the expectations, goals, concepts, institutional actions, roles and responsibilities that should be considered in the development of the ATMIS system. The Concept of Operations will also identify how the Ports and other agencies collect truck/traffic flow and cargo flow information from the trucking companies and tenants. This Concept will identify connections, cooperation, and coordination activities with other systems and agencies, and will be used as a basis for the update of the full Concept of Operations report into a comprehensive Conceptual Design Report for the Ports ATMIS.

The stakeholder meetings and Concept of Operations will also include a focus on and provide input for the Operations, Management, and Maintenance Plan to support and maintain the system (Task 1.6).

The following stakeholders have been identified to-date:

- The Port of Long Beach
- The Port of Los Angeles
- The City of Los Angeles
- The City of Long Beach
- Los Angeles County
- MTA
- Caltrans Districts 7, 8, 11 and 12
- Terminal Operators
- Trucking Companies
- Pacific Merchant Shipping Association (PMSA)
- The California Trucking Association (CTA)

- MTC Voyager
- EModal
- **Alameda Transportation Corridor Authority (ACTA)**

The team will conduct meetings with the above stakeholders to ensure that the policies, procedures, and objectives of each are the foundation of the Operational Concept, and hence, the Implementation Plan. Some of these meetings will be held individually with the agencies, some will be conducted in a workshop format.

The Siemens ITS team will prepare a draft System Validation Plan based on the identified user needs and concept of operations. At this stage, this document can include only generalized questions and high-level operational tests useful in confirming that the implemented system supports the high-level user requirements implied by the Concept of Operations. Further details will be added to the Validation Plan in the following task as more specific user requirements are identified.

When completed, the System Validation Plan will describe a process to confirm that the implemented system meets all user requirements and supports the Concept of Operation. It is assumed that prior to application of the validation plan, the system has previously been verified and accepted as described in a separate System Verification Plan, which includes acceptance testing. The Verification Plan tests the system for operational errors (failures and bugs) and satisfaction of functional requirements, while the Validation Plan tests the system for suitability for the intended purpose (user requirements). The completed Validation Plan will include checks ranging from very high-level questions, such as "Does the system allow use by both the Port of Long Beach and the Port of Los Angeles?" to quite detailed tests such as "Visually observe and count the number of vehicles passing the detector (including multi-trailer trucks) and compare this to the detector-based vehicle count recorded by the system for the same time interval". If such tests are also appropriate for the acceptance testing portion of the system verification plan (as in this example), the Validation Plan will not repeat the test, but cross reference the test in the verification plan, which is implemented first. The requirements traceability matrices will facilitate the cross-referencing of verification tests to system requirements validation.

The question-oriented components of the Validation Plan will include checks useful in the evaluation of prospective alternative system components, including alternative technologies for field equipment and alternative ATMIS software packages.

Task 1.2: Develop User Requirements and Functional Requirements

Objective: To identify how the Ports will operate to manage traffic and security through the Port and the requirements the system must meet for the desired level of operation and cooperation.

Deliverables:

- Draft User Requirements Report
- Final User Requirement Report
- Draft Functional Requirements Report
- Final Functional Requirements Report
- Draft System Verification Plan
- Expanded System Validation Plan

From the stakeholder interviews and the Concept of Operations, user requirements (needs) will be identified. These requirements identify how the users need the system to function, the capabilities that are expected, and constraints such as cost, reliability, and staffing expectations. User requirements will be developed for CCTV surveillance, vehicle detection, travel information dissemination, data sharing, communications, and future expansion.

User requirements, or needs, will then be used to identify high-level functional requirements, including functional requirements for each subsystem. The high-level functional requirements will include statements of required capabilities (e.g., functionality, user facilities), performance (e.g., timeliness, mean-time-between-failures), operating environment (e.g., temperature range, lighting level), and policy adherence (e.g., standards, regional ITS architecture). A requirements traceability matrix will be provided, showing the linkage between each functional requirement and the user requirement or need from which it is derived.

These high-level requirements will be refined and further broken down as needed to be implementation-specific and testable, in Task 1.7, after alternative approaches, applicable standards, conceptual designs, and operation and maintenance ramifications are considered in more detail. Task 1.7 will include an expanded requirements traceability matrix that links the detailed requirements back to functional requirements.

The user and functional requirements will be documented in a draft form and submitted to the Ports for their comments, and revised based on those comments. Any changes to the requirements from this point onwards will be tracked and documented.

The Siemens ITS team will prepare the first draft of the System Verification Plan. This initial version will identify high-level tests of the completed system needed to verify functional requirements. The plan will be refined as more details of the chosen technologies, hardware, and software become available during the project, so that test details are appropriate for the actual system implemented. The final System Verification Plan will include all criteria needed for acceptance of the system as a whole. Separate sub-system and component verification plans will be developed in later tasks.

The Siemens ITS team will expand the System Validation Plan to address the detailed user requirements.

Task 1.3: Develop System Architecture and Standards Report

Objective: Identify a proposed system architecture for the ATMIS System and prepare a Standards report detailing how the Project will be compliant with the National Architecture and ITS standards.

Deliverables:

- Draft System Architecture
- Final System Architecture
- Draft Standards Report
- Final Standards Report

In this Task the Siemens ITS Team will develop a Project level architecture based on the requirements identified in the previous task. The Project level architecture will identify the sub-systems and the physical and logical connections between them. The architecture will also identify the type and quantity of information to be exchanged between the various sub-systems and with external systems. The architecture will distinguish between initial and future elements

and will identify the interfaces to be developed as part of this Project and the interfaces to be developed in the future.

While developing the system architecture, attention will be paid to the regional ITS architecture to ensure that the ATMIS system architecture is compatible with IEN, RIITS, and Corridor-wide CVO. This analysis will consider the physical connectivity needed, the logical relationship between systems, and the type and quantity of information expected to be exchanged. The project concept of operations and high-level requirements will identify the opportunities and needs for information exchange with each of these regional networks. Siemens ITS will provide the Arterial ITS CM Committee with architectural changes so that the Turbo database and GIS mapping of ATIS projects throughout the Los Angeles County can be updated.

As part of this overall system architecture definition, the National ITS Architecture (NITSA) will be referenced and the Project architecture will be summarized in the form of the NITSA "sausage" diagram (high level) and market package diagrams (to show individual sub-system detail).

The Standards Report will identify and discuss each relevant standard, and make a recommendation as to the degree to which each standard should be used in the project. This analysis will consider the maturity of standards and risks associated with using immature standards, the availability of off-the-shelf components incorporating each standard, the projected popularity and support for standards over the likely lifetime of system components, the life cycle cost implications of using and not using standards, adherence to Federal rules, and the degree to which adoption of the standard is expected to lead to multi-vendor sources, interoperability, interchangeability and portability.

Together, the system architecture and standards reports will:

- Provide the framework within which the equipment will operate, and serve as a template for project development and design.
- Build upon any existing equipment or investments already made in the project area and the region.
- Support vendor neutrality, interoperability, interchangeability, and portability.
- Identify and incorporate existing and planned transportation management systems in the region and define their interaction.
- Identify communications and data flows among systems and components.
- Support the development of open systems (i.e. systems with interfaces that use standard or known communication protocols and functionality).
- Allow for integration of new technologies and system expansion in the future.
- Provide a framework for multiple design choices.

Task 1.4: Perform Alternatives Analysis and Recommendations

Objective: To identify suitable hardware and software components that meet the requirements identified for the Ports ATMIS System.

Deliverables:

- Draft Alternatives Analysis Report
- Final Alternatives Analysis Report

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In this task, the Siemens ITS Team will investigate the alternative technologies and products available for each system component. For each promising alternative, the following issues will be considered:

- Is it suitable for the project environment?
- How well does it address the high-level requirements identified in Task 1.2?
- Is it affordable, both initially and for on-going operation and maintenance?
- Is it proven and low-risk?
- Is it available within the required time-frame?

Evaluation of potential field devices and communications technologies will include consideration of their physical placement requirements, whether field conditions are suited to those placement constraints, and the need for installation of support structures where devices cannot be mounted on existing facilities. It will also consider tentative device locations (which may vary from one technology or product to another) and the quantity needed to meet project requirements, and therefore total costs.

For vehicle detectors, both in-pavement and off-road devices will be considered. An important consideration will be the ability of the detector to distinguish between vehicles with multiple trailers at low speeds and to operate effectively in fog. Information on deployment experience will be collected by contacting the agencies using the systems under evaluation for similar purposes.

The CCTV technology assessment will consider both field-to-central and center-to-center applications. With the availability of digital video, there are a number of options available for CCTV distribution that can have major impact on communications requirements. Both analog and digital video options will be investigated and their advantages and disadvantages clearly stated. The option for a fixed CCTV camera to provide both vehicle detection and visual surveillance will be considered.

For travel information dissemination, the Team will evaluate different media for disseminating information directly to truck drivers. The media evaluated will include Changeable Message Signs (CMS), Highway Advisory Radio (HAR), Highway Advisory Telephone (HAT), text messaging, and web pages. These media will be evaluated in terms of their ability to meet the needs of truck drivers and terminal operators. The CMS technology analysis will consider factors such as power requirements, preferred mounting structure configuration (cantilever, pole, or mounted on existing structures), aesthetics (small vs. large signs), message size (2 line, 3 line, or 4 line message capabilities), and cost.

As part of the evaluation of location of field devices, the Siemens ITS Team will make a site visit and walk the locations under consideration for various device placements.

The communications technology assessment task will consist of recommending the most appropriate communications technology and architecture based on the bandwidth requirements at various locations. All available technologies listed (the list may be updated if new technologies are added to the spectrum) in the RFP will be evaluated and the recommendation may result in a hybrid solution. The evaluation will consider flexibility for accommodating future expansion of the system and evolving technologies.

To assist in their evaluation of alternatives and review of work performed by the Siemens ITS Team, Ports staff will be provided with background briefing materials on the promising technologies, products, and options. These will be existing materials from available sources, and will not be developed specifically for this project. In the Alternatives Analysis Report, the

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Siemens ITS Team will provide an overview discussion of the alternatives and the rationale for selection of the recommended option.

Task 1.5: Develop Conceptual Design/Field Surveys

Objective: Bring together the results of prior tasks to form a cohesive conceptual level design for the project, and conduct field survey of the recommended equipment location.

Deliverables:

- Draft Conceptual Design
- Final Conceptual Design
- Field Survey Document

This task will bring together the analysis and decision making carried out in previous tasks to develop a comprehensive conceptual design. This will identify, and describe all the project's physical components and relate them together logically, physically and geographically.

The conceptual design will be divided into four major categories, or sub-projects. The following list describes the components of the conceptual design for each of the sub-projects:

- Field Hardware (vehicle detection (queue length monitoring and flow monitoring), travel information dissemination (e.g., CMS), and visual surveillance (CCTV cameras)): identification of location, mounting or placement, and hardware and firmware specifications.
- Central Monitoring and Control Facilities: identification of off-the-shelf software packages to be used, computers and other system-related equipment, any specialty furniture, and preliminary room layouts.
- Communications: identification of equipment and media specifications, "typical" configurations, and locations; for links between field elements and the central ATMIS system and between the ATMIS and external systems.
- System Integration: identification of overall open system architecture, communications protocols and interfaces between system components and between the ATMIS and external systems, data flows, and any needed software modifications.

The Conceptual Design will include preliminary cost estimates. If necessary, the number and location of field devices will be varied to address any mismatch between the estimated cost and the available funds. In this case, preliminary device locations will be revisited to identify the lowest priority sites for potential elimination and opportunities for replacing two devices with one in a compromise location. The priority of device sites will be based on information collected from stakeholders as to which areas are the most in need of monitoring or information dissemination and consideration of overall system functionality. The potential for using lower-cost, though less capable, devices will also be explored as an alternative approach to lowering costs if needed. Ports staff will be kept fully informed and involved in such trade-off decision making.

The field communications design will be developed iteratively to accommodate any changes in the number or location of field devices. The impact of field device location on communications infrastructure cost will be considered in choosing the location of field devices.

The Central Monitoring and Control Facilities element will address the need for separate operations facilities (user interface) at the offices of each of the two Ports. The pros and cons of

having one common server or shared server with redundancy will be explored. This evaluation will consider institutional and technical issues. In either case, staff at both Ports will have access to all system functionality from their respective offices. Under normal day to day circumstances, staff at both Ports will be able to only control devices in their own jurisdiction. However, the system will be designed so that in the event of an emergency, each Port can control all devices, for the safety of the public.

The System Integration portion of the conceptual design will describe the interfaces between system components and any modifications needed to enhance the functionality of off-the-shelf software or to provide interfaces between system components or with external systems.

The System Integration element will include an implementation plan that describes the work needed for each system component and the associated management information. The cost estimate will provide a preliminary program budget for each component. A preliminary contracting plan will be developed, identifying which components will be provided together or in separate construction contracts and the estimated form and time-frame (schedule) for each contract. A preliminary cash-flow analysis will be performed to identify the outlay of funds expected to be needed in each year. The implementation plan will be developed iteratively with the Operations, Management and Maintenance Plan to ensure that OM&M constraints and ramifications are considered.

This implementation plan will be refined periodically throughout the project through implementation/ construction to assist the Ports in managing the program and related funding and staffing.

For each of the sub-projects, the following will be developed:

Scope of Work: The Siemens ITS Team will prepare a Scope of Work for each sub-project that comprises the following items:

- A listing of tasks and subtasks to be performed for each phase and each component of the project.
- A description of the work to be performed for each task. This description will indicate what work is recommended for procurement through a separate contract or purchase (e.g., what software the Team will develop and what software will be purchased) and who is responsible for the performance of that task.
- A list of project deliverables associated with each task.

The Scope of Work will be based on the Port's Work Breakdown Structure (WBS).

Project Budget: The Siemens ITS Team will prepare a sub-project budget indicating the anticipated use of funds. The project budget will include an estimated cash flow chart by quarter and a breakdown of expenditures by task and subtask, and will be based on the Port's WBS.

Project Schedule: The Siemens ITS Team will prepare a sub-project schedule detailing the anticipated start and end dates of each task and subtask. The schedule will include project milestones, schedule of deliverables, project duration, and the critical path. The schedule will also include appropriate agency review periods for each document and work product so as to provide a realistic estimation of the project duration. It will be based on the Port's WBS.

The conceptual design documents will have enough details to proceed with the detailed design tasks in Phase 2. The document will identify both technical and engineering issues which should be resolved before heading into detailed design.

Field Survey: In this task, the Siemens ITS Team will conduct an inventory of recommended field elements. The field elements will include controllers, CMSs, detection system and CCTV. For controllers, data collected will include details of controllers (manufacturer, controller type, firmware), cabinet type, condition of the cabinet, equipment in the cabinet, condition of the conduit etc.
For CMSs and CCTV, locations of the poles will be identified. Where possible, alternate locations with their attributes will be presented. For CCTV cameras, an analysis of existing poles will be carried out to determine the feasibility of using them.

For communications, hub locations, demarcation boxes, antenna locations as needed will be identified.

The collected information will be documented in the tabular and text forms in a report.

Task 1.6: Develop an Operations, Management, and Maintenance Plan

Objective: Develop an Operations, Management, and Maintenance (OM&M) Plan that includes preliminary projections of OM&M costs for elements of the project's proposed Conceptual Design.

Deliverables:

- Draft Operations and Maintenance Plan
- Final Operations and Maintenance Plan

Various "lessons learned" reports assembled by MTA, the County of Los Angeles and others, have verified the importance of OM&M Plans for ITS projects. The OM&M Plan will provide the Ports a clear picture of ongoing investment expectations to effectively deliver and preserve the benefits of the project. The project OM&M Plan will assess key issues, define OM&M cost streams, and identify funding and cost-savings opportunities for near-term (first-year) and long-term (five-year) periods. This will be achieved through a fundamental *Process / Format / Content* (PFC) approach. The PFC approach begins with the basic premise that gaining stakeholder endorsement of an overall strategy for development of an OM&M Plan is important to securing a later understanding and commitment to the Plan. The OM&M Plan can thus serve multiple functions, including budgeting functions, public-policy functions, and grant-application functions.

The Siemens ITS Team proposes that a project OM&M Plan be developed through a designated *OM&M Plan Review Group* to be jointly identified by the Ports project manager and the Siemens ITS Team project manager. The *OM&M Plan Review Group* will meet at the beginning, middle, and end of this task and will guide the consultant's development of the OM&M Plan.

The OM&M plan will consider all Project components with respect to the required personnel skill levels and staffing costs, and the recurring and life cycle costs for equipment and services. The Plan will address:

- Staffing Plan for operation and maintenance of ATMIS system.
- Vehicle detection and Queue detection maintenance.
- Maintenance of other ITS field devices (CMS and CCTV).
- Maintenance of Communications infrastructure.

- Periodic assessment of operating system and software for potential upgrades.
- The process for making future software enhancements.
- Periodic computer hardware enhancements and/or replacements.
- Computer database management and maintenance.
- Field traffic operations / traffic enforcement requirements / guidelines.
- Periodic assessment of system operations for identifying refinements.
- Periodic assessment of user requirements (needs) to verify applicability.
- Periodic assessment of functional requirements to verify applicability.

OM&M requirements will be determined both in terms of staff requirements (number as well as required technical capability) and equipment requirements. These requirements will be compared against existing resources at the Ports. For additional resources, alternatives considered will include using Ports-owned resources or contracting out OM&M activities. The optimal solution may be a combination of the two. Under certain circumstances, it is more economical to contract out activities that require specialized equipment or skills, as this requires resources to both buy the equipment and train the staff. Siemens ITS staff will have prior discussions with the Ports staff before considering any contracting options to make sure that there are no conflicts with any Union contracts.

Task 1.7: Develop Detailed System Requirements

Objective: Develop functional requirements that are adequate for detailed system design and testing.

Deliverables:

- Draft Detailed System Requirements
- Final Detailed System Requirements
- Draft Sub-system Verification Plan

In this task, the Siemens ITS Team will refine the high-level requirements developed in Task 1.2 and derive detailed requirements suitable for use in detailed design, system configuration, and acceptance testing. Operational scenarios and use cases will be described and, together with the high-level requirements will be used to identify specific requirements relevant to the technologies, products, device locations, and architecture identified in the conceptual design. Examples of detailed functional and performance requirements include:

- The minimum polling rate for field device communications
- The minimum frame rate for video feeds
- The minimum number of alternating message pages provided in the CMS
- The geographic area to be included in the central software's main user-interface map
- The maximum number of devices on each field communications channel

Whereas the high-level requirements developed in Task 1.2 were adequate for developing the conceptual design, additional detail is needed to guide the detailed design which will include system configuration and any customization needed.

The requirements traceability matrix first developed in Task 1.2 will be expanded to include these detailed requirements and how they relate to the high-level requirements. Some high-level requirements may flow down directly without refinement or expansion, while others may map to multiple detailed requirements.

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The Siemens ITS team will develop the first draft of the Sub-system Verification Plan. This document will address testing requirements and procedures for each sub-system. It will be updated during detailed design.

Phase 2: Detailed Design

In Phase 2, the Siemens ITS Team will prepare detailed design documents for field elements and will design software interfaces as identified in the Conceptual Design Plan. These design documents will form the basis for construction contracts for field and communications infrastructure to be issued by Ports and for the development of software interfaces to be developed by the Siemens ITS Team.

Optional Task 2.1: Conceptual Design and System Requirements Update

Objective: Update the conceptual design and system requirements to take into account any changes in opportunities or constraints since their original development.

Deliverables:

- Draft updated conceptual design
- Final updated conceptual design
- Draft updated system requirements
- Final updated system requirements

This task will not be needed if Phase 2 work commences immediately after completion of Phase 1. However, if there is any significant delay in commencing Phase 2 work, such as may be required due to funding constraints, technological advances and changes at the Ports may warrant a revision of some elements of the conceptual design and system requirements.

For each system component and device, the conceptual design and system requirements recommended in Phase 1 will be reviewed and refined taking into considerations any new developments since completion of Phase 1. The device locations will also be reviewed with the Ports staff and refined based on any new developments in the Ports area since the completion of Phase 1.

Task 2.2: Field Elements Design

Objective: Design each of the field components consistent with the Conceptual Design and System Requirements

Deliverables

- Draft Basis of Design Document
- Final Basis of Design Document
- 15% Plans, Specifications and Estimates
- 50% Plans, Specifications and Estimates
- 100% Plans, Specifications and Estimates
- Final Plans, Specifications and Estimates
- Draft Component Verification Plan

The field element design will be based on the conceptual design and detailed system requirements developed in Phase 1.

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Field Review

The Siemens ITS team places a strong emphasis on field review. Accurate and complete information is essential for preparing concise and logical plans. The majority of the field activities will need to be performed for the 50% submittal. Early identification of right-of-way, utilities (and potential conflicts), and details relating to other construction projects will be the primary input into the initial submittal. Functional requirements of the field-related equipment will also be essential early in the project to identify right-of-way and easement needs at the initial submittal. The Siemens ITS Team will conduct a field inventory of relevant infrastructure related to this project including relevant field measurements and photos. Road segments that may involve installation of underground conduit for field devices will be field reviewed to identify constructability issues and potential conflicts that may have an impact on conduit routing. Existing communication locations, conduit and pull boxes will be field reviewed as needed. Physical features identified in the field will be measured, logged, and photographed for discussion with the POLB Project Manager. The Siemens ITS Team will coordinate with participating agency staff to arrange for technicians to open existing traffic signal cabinets as required.

It should be noted that work related to HAZMAT analysis, geotechnical analysis and surveying will be Ports' responsibility and will be performed by Ports' staff.

Utility Notification and Coordination

The Siemens ITS team will provide draft plans and utility notification letters to utility companies and public agencies identified as potentially having facilities in the immediate vicinity of work to be performed. The companies will be requested to identify, review, and comment on the plans. The Siemens ITS Team will notify the participating agency of any utility conflicts. Known utilities in the vicinity of underground construction (i.e. conduit, cabinet and pole foundations) will be shown on the design plans. The Siemens ITS team will also utilize the USA Underground Dig Alert agency/website to facilitate the search for utilities. Coordination required for the provision of telephone and power services required for the project will be performed by the Siemens ITS team. The Construction contractor will be responsible for resolving utility conflicts discovered during the construction phase of the Project.

Basis of Design Documnet

The Siemens ITS Team will prepare a Basis of design document which will detail the recommended design approaches which will include details such as the types of communications to be used by location, protocols, conduits and innerducts, fiber type, and preliminary size, video formats, etc. This document will also outline the design standards to be used in the preparation of plans, and specifications.

Additional requirements: The following additional information will be included in this document:

- List of other projects at the Port or elsewhere that may affect this project and a description of the potential interface(s) between such other projects and this project.
- A construction packaging plan establishing composition of project elements into construction bid packages and defining the relationships between packages
- A construction phasing plan.

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Preliminary Design (15%)

Sample sheets will be provided identifying the features and layout that the submittal will follow. The preliminary design documents will identify the specific location of each field device and the utilities in the vicinity of any proposed underground work. The concept of limiting the identification of utilities on plan sheets to the area in which underground work would be performed could potentially provide a design cost savings. The merits of this approach will be discussed with the Ports. Conduit and pullboxes will be located, along with the proposed CMS, CCTV, vehicle monitoring and the gate queue detector stations, as applicable. The Siemens ITS team will identify power and communication opportunities as well as constraints for each location, and will make allowances for future expansion of field devices. Right-of-way or easements, if needed, will be identified at this stage of the development. A preliminary, itemized cost estimate will accompany the submittal.

Plans, Specifications, and Estimates

A clear definition of the operational requirements of the Project will be developed in the preliminary design phase to facilitate the refinement and translation of functional design into the basic stages of the PS&E. The Siemens ITS Team will develop a detailed work plan, including using a checklist of guidelines to be followed by our design teams, which will outline the specific tasks and requirements for developing each submittal. We propose to include a period to review design decisions made by the design team on the monthly progress meeting agendas. This will facilitate input into the design and will shorten the formal review process. Throughout the project, we will systematically document the decisions made along with the action items, individuals responsible for each action item, and dates for completion to facilitate meeting the schedule established for this project. The plans will be developed using the design guidelines provided by Ports and following any local standards where needed. The bid documents will be prepared in accordance with the funding requirements.

Organization of the Plan Set

The plan set may be organized in one of two logical manners, each with advantages and disadvantages:

Separate different field element types into different plan packages.

The advantage of this method is that the project can more easily be split into separate, smaller construction projects, which may increase competition and reduce construction cost. This will also allow staged construction, if needed. An obvious disadvantage of this method is the effort required to maintain consistency between different contracts. Also, more sheets will be required.

Provide one plan package for the entire project.

An advantage of this method is that the project is put out to bid as a whole, and requires less coordination on Agency's part to keep consistency across different elements. The disadvantage of this method is the difficulty in splitting the construction if needed.

A hybrid approach is also possible; that is, combining elements when they are geographically adjacent and separating them when they are not. Conceptually, this is similar to ordering the sheets in a combined plan package by function to the extent possible. The Siemens ITS Team has extensive experience in preparing plans using both approaches, understands the issues, and will develop an approach in conjunction with the Ports Staff as appropriate.

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Submittals

The Siemens ITS will prepare each design submittal in accordance with the specified requirements. Our approach to the design and each of the PS&E stages are presented below.

50% Submittal Upon receipt of comments on the 15% design submittal, the Siemens team will prepare the 50% design submittal in accordance with the Port's requirements. The electrical power distribution, communications cabling, cabinet contents, structural drawings, and any special details required to construct the system will be developed. The 50% design documents will also identify the known utilities in the vicinity of any proposed underground work. The concept of limiting the identification of utilities on plan sheets to the area in which underground work would be performed could potentially provide a design cost savings. The merits of this approach will be discussed with the Ports. All right-of-way and easements will also be shown. A draft copy of the Special Provisions and revised preliminary construction cost estimate will be developed as part of the 50% design. We suggest an early constructibility review be conducted at the 50% design level to ensure that potential problems are avoided.

100% Submittal- Following review of the 50% design documents and incorporation of the accompanying comments, the 100% plan set will be prepared. This step in the design process involves completion of the design with all of the general sheets, title sheets, summary of quantities, block diagrams, and other details required for the system. Special details for attaching conduit to structures, location plan sheets, signing and marking plans, and any required traffic control plans will be prepared. This submittal will include a contingency plan that will outline the requirements for minimizing the disruptions to the goods movement trucks, motoring public and businesses. Final revisions to the cost estimate and Special Provisions will also be made, and a detailed bidding schedule listing all bid items with their descriptions, quantities, and units of measurement will be incorporated. At the conclusion of 100% design, the PS&E documents will be essentially complete. Following submittal of the 100% PS&E package, a utility and agency coordination meeting will be scheduled to obtain any final comments.

Final Submittal -The final design stage will incorporate any final review comments from the 100% design submittal, the preparation of the final bidding schedule, and detailed cost estimates in the approved format. We will coordinate with the Ports to provide a sealed and signed PS&E ready for advertisement. The final PS&E package will include an estimate of the construction time frame including construction, testing, and operational milestones.

Estimate of Probable Construction Cost

Project scope and construction cost expansion are major issues that face project managers once a project is programmed. At each design submittal, a progressively more detailed cost estimate will be prepared to validate that the estimated cost for implementing the project is consistent with the budget for the program. The Siemens ITS Team will prepare estimates of probable costs commensurate with the design effort to ensure that all estimates incorporate appropriate costs and items of work. Any escalation in the construction costs will be identified early and options offered to keep the costs within the budgeted amount.

Component Evaluation

The infrastructure/field element/TMC equipment design will rely on technologies that have already been deployed by others, very likely locally in Southern California. Therefore, to verify the proposed design will work, the Siemens ITS Team will arrange for up to three site visits to up to three public agencies that use the key technologies recommended by our team. In

addition to verifying the design, this will better acquaint the Port staff and/or other end users with the technologies.

The Siemens ITS team will develop the Component Verification Plan. This document will address testing requirements and procedures for each component of the system not being supplied and installed by the field construction contractor. Examples of such components may include computers, communications end equipment, and any other equipment purchased separately from the field construction contract. Testing and verification of components supplied and installed by the field construction contract will be covered in the field construction contract specifications.

Task 2.3: System Software Design

Objective: Develop a detailed design for integrating software components as identified in the conceptual design

Deliverables:

- Draft System Software Design Specification (including list of hardware and COTS software)
- Final System Software Design Specification (including list of hardware and COTS software)
- Draft Interface Control Document
- Final Interface Control Document
- Draft System Integration Plan
- Final System Integration Plan
- Final System Validation Plan
- Final System Verification Plan
- Final Sub-system Verification Plan
- Final Component Verification Plan
- Draft Acceptance Testing Plan and Procedures
- Final Acceptance Testing Plan and Procedures

In this task, the Siemens ITS Team will develop a detailed design for the ATMIS software components identified in Phase 1. This will include the specification and detailed description of how the software components within ATMIS will work. This includes description of the current software design for existing off-the-shelf systems and a description of how that software will be augmented and/or modified to include any necessary extensions and interfaces required for this project. Descriptions of augmented, modified, and/or extended components will include:

- Mock-ups of new or modified user interfaces
- Technical specifications of any new functionality data elements and/or communications protocols
- Identification of which components in the software architecture are impacted by the changes
- Identification of how much each software component requires modification in the system, at an approximate level of detail (i.e. high, medium, low)

The design will also include specification of system configuration where configuration options exist. This includes mock-ups of site-specific graphics (e.g., maps) for user interfaces for Ports' approval and detailed description of how interfaces will operate between ATMIS components,

and how the ATMIS components will interface to external systems such as the IEN. The details of interfaces to external systems will be documented in a separate document.

As part of this task, the Siemens ITS Team will also prepare a System Integration Plan which will document the integration strategy for the ATMIS system. This will detail how different modules of the system will be integrated and in what order.

In this task, the Siemens ITS Team will also finalize the four systems engineering documents developed in draft forms in the previous tasks. The documents will be updated to reflect the final system software design.

As part of this task, Siemens ITS will also develop an acceptance testing plan and acceptance testing procedures. The acceptance test plan identifies how the Ports can be satisfied that the delivered software system meets the detailed system requirements developed in Task 1.7. In the first phase of the project, this test plan will provide a high-level view of acceptance test procedures to be used at each incremental delivery of software. As the project progresses, the detailed procedures for each test will be developed and provided for the Ports' review and approval before the tests are executed in Phase 3.

The software design report will also contain a detailed plan for incremental software development and integration, and phased delivery and acceptance testing. Phased delivery of software minimizes the Ports' risk and allows the Ports' insight into the progress of the overall system.

The Siemens ITS Team will work with the Ports' Independent Validation and Verification (IV&V) consultant during this phase and conduct design reviews as needed.

Phase 3: System Implementation

This phase of the project involves field construction, central hardware and software procurement, systems integration and configuration, acceptance testing, training, and system documentation.

Task 3.1: Construction Support Services

Objective: To provide post-design construction support on an as-needed basis.

Deliverables:

- Assistance during bidding and construction
- Attendance at meetings with construction contractor as required
- One set of Record Drawing Mylars

The Siemens ITS Team will provide bidding and construction support and Inspection services in accordance with the Port of Long Beach Consulting Services Guidelines, August 2003 edition, as follows:

- The Siemens ITS Team will attend a partnering session with the Ports staff.
- During the Bid Phase support the Ports as follows:
  - Respond through the Port Project Manager to all questions by potential bidders in a timely manner.
  - Prepare Bid Addenda or Clarification documents and a revised Cost Estimate and/or Bid Estimate, as necessary, at the direction of the Port Project Manager, and per Port formatting and standards.

- Attend the pre-bid conference and/or site inspection.
- Assist in evaluating construction bids as requested by Port staff.
- Provide Port staff with a comparative analysis of the bid tabulation versus the Consultant's Cost Estimate.

- The Siemens team will attend pre-construction meeting and be prepared to answer Contractor questions concerning design.
- The Siemens team will respond to reasonable Requests for Information RFI's regarding the traffic components of the construction. Review will be for conformance and consistency with the intent of the contract documents, and compatibility with the design concept of the completed project as specified in the contract documents. Such review and approvals or other actions will not extend to means, methods, techniques, equipment choice and usage, sequences, schedules, or procedures of construction or to related safety precautions and programs.
- The Siemens team will review contractor submittals and all shop drawings . Review will be for conformance and consistency with the intent of the contract documents, and compatibility with the design concept of the completed project as specified in the contract documents. Such review and approvals or other actions will not extend to means, methods, techniques, equipment choice and usage, sequences, schedules, or procedures of construction or to related safety precautions and programs.
- Change Orders—The Siemens team will be available during construction as needed to review field change orders or design those change orders requiring specialized expertise not available in the field. Change order recommendations will be made to the Port of Long Beach, not to the Contractor.
- Nonconformance Reports—The review and approval of field-generated "Nonconformance reports" (NCR's) is included. The contractor is responsible for the recommended solution for any NCR, but we will review the proposed solution and provide a recommendation to the Port. All direct and indirect costs for this process will be tracked separately so that the Port can recover costs from the construction contractor.
- Timely coordination with regulatory agencies such as the City of Long Beach, the City of Los Angeles, Caltrans, and other agencies as necessary to respond to permit conditions and requirements;
- Timely review of the Construction Documents to assist in resolution of conflicts raised by the construction contractor. We will be responsible for all redesign work necessary for correcting design errors in the Work of the Consultant at no additional cost to the Port.
- Where redesign changes the data in the ASCII, DWG, or DGN files provided in Section 10.F.5, new such files are to be provided at the time of redesign.
- Timely technical support as requested by the Port in support of the negotiation or evaluation of: contractor's proposals regarding change orders; change order documentation or backup; determination of changed site conditions; providing an acceptable changed design for the changed site condition; and claims.
- Attend construction coordination meetings if so requested by the Port;
- Observation of the testing and start-up of any Project Systems and verification of the performance of same.
- Provide archive quality "As Built" Drawings of the constructed Project in accordance with Port CADD Manual, including a digital copy of all Drawings.

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Task 3.2: Software Development / Integration

Objective: Develop the system software, integrate the COTS modules and carry out in-house testing

Deliverables:

- Results of internal software/systems testing

This task will consist of developing software to integrate with the COTS modules as detailed in the System Design Report and approved by the Ports. The Siemens ITS Team develops software using industry-standard *Unified Software Development Process*. The key elements of this process are twofold – first, software is developed to comply with user and functional requirements. No software is written that does not address a user need. Second, the process of development is *iterative* and *incremental*. From the list of user and functional requirements, and in coordination with the schedule for field device construction and deployment (through the previously-described "sub-projects" concept), a logical schedule for software development and integration is developed in Task 2.2. In this Task 3.2, software is written and integrated according to the schedule. This allows the team to demonstrate ATMIS functionality and execute acceptance tests incrementally and minimizes the Ports' risk over the project duration. For this project, Siemens ITS proposes a three-stage development and delivery of ATMIS functions.

All Siemens ITS software development uses CMM Level 2 recommended practices including requirements management, source code control, defect and feature tracking systems, and traceability matrices for tracking of requirements, to features, to acceptance test cases. Development practice audits are available from other Siemens ITS customers for the Ports' review if necessary.

Task 3.3: System Deployment / Integration / Acceptance Testing

Objective: Ensure the deployment of the ATMIS and communication equipment; integrate the systems with their field equipment and the regional systems and carry out component and end-to-end system testing.

Deliverables:

- Fully operational ATMIS System with connections to both Ports, regional agencies, Terminal Operators and Truckers.

In this task, the Siemens ITS Team will install the ATMIS system and associated hardware and software at the Ports facility. The system will be connected to the field components and external systems one by one and tested according to the acceptance test procedures developed in previous tasks. Integration will be carried out on per sub-system basis which will allow easy isolation of problems and solution implementation. Once all field elements and external systems are connected and tested individually, Siemens ITS will carry out an end-to-end system test to test the ATMIS system as a whole. Any problems found during the acceptance testing will be found and fixed and the test will be re-run. All testing will be done in the presence of and conjunction with Ports' staff and the Ports' IV&V consultant.

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Task 3.4: As-Built Plans

Objective: To document the project as constructed.

Deliverables:

- As-Built Plans in both reproducible and electronic copy

The Siemens ITS Team will work closely with the contractor(s) to document accurate as-built plans and records. Variances in the field as-builts will be reviewed with the contractor and documented through field inspection. Final reproducibles and electronic copies of plans will be provided.

Task 3.5: Overall Field and System Integration

Objective: To provide overall field and system integration services.

Deliverables:

- Purchasing equipment not supplied by other contractors
- Connecting field equipment to communication network in field cabinet
- Integration of field units into overall system
- Perform testing of the central system software with the new field units

In this task, the Siemens ITS Team will provide services to purchase and install end communications equipment in the field as well as central and carry out integration of field units into the overall system and perform testing of the central system software using the new field units. It is assumed that the construction contractor will be required to install dark fiber and devices such as CCTV, CMS and detection devices in the field. The construction contractor will provide for testing of that equipment and communications locally in the field. It will be the responsibility of the Siemens ITS Team to purchase (or assist the Ports in purchasing) other components, make final connections, and test the overall system for its functionality.

Task 3.6: System Documentation

Objective: To provide the Ports with sufficient documentation for operations and maintenance of the installed systems.

Deliverables:

- Systems Operations Manual
- Systems Maintenance Manual
- Software Documentation
- Final Report

Siemens ITS will provide system documentation to ensure that the agencies can adequately operate, manage, and maintain the installed systems. The requirements of the RFP will be strictly adhered to. The Team will compile equipment and software documentation into "Operations Manuals" and "Maintenance Manuals". Additional sections will be authored by the Team to ensure a complete OM&M manuals for the ATMIS. Software provided under the project will be thoroughly documented to provide a clear understanding of the overall system structure. As far as is possible, electronic versions of the documentation will be provided on CD-ROM in addition to appropriately packaged hard copies.

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As part of this task, the Siemens ITS Team shall also prepare a Final Report to close-out the Project. This report shall include the following:

- Current Parts List and Configuration Details
- Completed Configuration Management Plan
- Final walk through punch list
- Listing of date and amount of final payments to vendors, if any
- Receipt of all warranties
- Date of submittal of final "As-Built" Plans

Task 3.7: Training

Objective: To provide operational and maintenance training to agency and stakeholder personnel.

Deliverables:

- Training Procedures Manual
- Training Materials
- Required Classroom Training Sessions

The Siemens ITS Team will develop an appropriate and effective training program designed to meet specified training goals including familiarization with systems operations, development of desirable levels of operator confidence, and ordinary system maintenance. Training materials will outline the operational and maintenance requirements of the ATMIS and will be supported by the system documentation developed in the previous task. Strategies to meet training objectives will be developed in consultation with the Ports.

Training sessions will include (in addition to related unique needs):

- System Operations - Hands on system training
- System Administration - Explanation of system commands, their function and usage
- System Maintenance including required preventive maintenance procedures; servicing procedures; system troubleshooting; and problem identification procedures

The training plan and materials will be prepared in draft form and revised based on review from Ports Staff. Additional training may be provided based on requirements identified by the Ports.

Task 3.8: 60 – Day Operational Testing

Objective: Conduct 60 day operational test of the system per the requirements detailed in the RFP.

Deliverables:

- Resolution of the issues resulting from the operational testing
- Updated System documentation

After the system has undergone end-to-end acceptance testing and the Ports' staff have been trained, the system will enter into a 60 day operational testing period per the requirements detailed in the RFP. The Siemens ITS Team will be available to answer any questions and provide any fixes if required. The System documents will be updated and re-submitted as required to address staff questions and comments.

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Persistent Intermittent Failures

No intermittent hardware, software, communication, or control operation or other malfunctions not related to a specific hardware or software malfunction shall be permitted to persist during the test period. If such problems are encountered, the test shall be suspended until the problems are corrected.

System Shutdown for Testing/Correction

During any period that the system operation is restricted or limited in any way as a result of testing, the 60-day System Acceptance Test shall be halted and shall not continue until a period of 72 to 168 hours of successful performance, as determined by the PORTS, has proved that any corrections or modifications made are valid, the problem is corrected, and no new system problem or deficiency has been created as a result of the change. Diagnostic testing that does not result in changes to system hardware or software shall result only in the loss of acceptable test time.

Maximum Downtime

Total system downtime in excess of 72 hours during the 60-day test period shall cause the System Acceptance Test to be restarted. System downtime is defined as a condition that, due to central control hardware, software, or communications equipment malfunctions, causes the system to operate in a standby mode, causes the central system to cease operation, or causes any subsystem to revert to its locally generated standby timing program.

Actions Resulting from Hardware Failure

Failure in any mission critical piece of hardware item during the acceptance test period, shall necessitate restarting the 60-day test period for its full 60-day duration for that item after its repair or replacement.

Action Resulting from Software Failure

Any failure of system software or discovery of a software deficiency that causes a system malfunction or discovery of software operation that is not in compliance with the specifications shall cause the 60-day test to be halted and repeated in its entirety after correction of the software problem. If no further software problems are discovered, and if no software problems are introduced as a result of correcting the initial deficiency, the PORTS may reduce the restarted 60-day test period for software to not less than 30 days. In no case shall the total test period be reduced to less than 60 days.

Phase 4: Warranty Period

In this Phase, the Siemens ITS Team will provide on-call trouble shooting and maintenance services for all software and hardware provided through this Project to the Ports for a period of one year following written acceptance by the Ports of operational testing of the ATMIS system.

Schedule

The proposed schedule for the Ports ATMIS Project is presented in Figure 1. The schedule is largely determined by the need to provide adequate review time of the project deliverables by the involved agencies. No document has less than 15 working days for review, and some, more comprehensive documents have four full weeks. As a mitigation measure, tasks dependent upon the output of previous tasks, are shown, wherever possible, to start using the material from the draft report.

Siemens Employee Rate Schedule

Last	First	Staff Category	Current Rate	Average Rate to be Used For the Project Year 1	Year 2	Year 3	Year 4
Clelland	Alan	Principal In Charge	$227	$227	$235	$243	$252
				$222	$230	$238	$246
Tighe	Warren	Project Manager	$220				
Randall	Jeffrey	Deputy Project Manager	$177	$164	$169	$175	$182
Gupta	Arti	Deputy Project Manager	$179				
Marshall	Pete	Deputy Project Manager	$167				
Gettman	Doug	Deputy Project Manager	$165				
Massaranc	Glenn	Deputy Project Manager	$163				
Kacir	Kent	Deputy Project Manager	$156				
VanDillen	Diederick	Deputy Project Manager	$151				
Wieck	Michael	Deputy Project Manager	$151				
Townsend	Walt	Senior Engineer	$147	$136	$141	$146	$151
Nichols	Del	Senior Engineer	$148				
Carey	David	Senior Engineer	$134				
Holmes	Jim	Senior Engineer	$127				
Shelby	Steve	Senior Engineer	$126				
Gilbert	Charles	Engineer	$112	$103	$106	$110	$114
Bhadha	Rayomand	Engineer	$109				
Wright	Michael	Engineer	$102				
Zinn	Matt	Engineer	$99				
Clissold	David	Engineer	$102				
Johnson	Shane	Engineer	$98				
Montigny	Pete	Engineer	$96				
Wang	Jun	Junior Engineer	$84	$80	$83	$86	$89
Zhu	Chongkang	Junior Engineer	$82				
Pu	Lili	Junior Engineer	$78				
Guo	Zhiyong	Junior Engineer	$76				
Tarico	Douglas	Senior Programmer	$164	$148	$153	$159	$164
Keaton	Sherilyn	Senior Programmer	$163				
Horton	Bruce	Senior Programmer	$141				
Clance	Michael	Senior Programmer	$140				
Engle	Jonathan	Senior Programmer	$132				
Nelson	Luke	Programmer	$129	$111	$115	$119	$124
Crawford	Doug	Programmer	$130				
Gallagher	J.Michael	Programmer	$120				
Edgar	Scott	Programmer	$95				
Tripathi	Nagendra	Junior Programmer	$85				
Webb	Carol	Administrative/Scheduler	$102	$102	$106	$109	$113
Johnson	Brandon	Administrative/Graphics	$84	$84	$87	$90	$93
Kubendran	Kalaivani	Intern	$61	$61	$63	$65	$68
Patterson	David	Administrative/Grahics	$53	$53	$55	$57	$59
Leela	Vera	Administrative Assistant					

s of Long Beach/Los Angeles Advanced Transportation Management, Information and Security Systems
Cost Estimate - Siemens ITS Team, Date - May 23, 2005

	Firm Name	Siemens ITS								KHA				TranSmart		LIN Consulting			MTM		
		$227	$220	$178	$136	$86	$148	$111	$69	$186	$150	$98	$105	$74	$91	$120	$130	$60	$191		
	Task Name	PIC Alan Clelland	PM Warren Tighe	DPM Arti Gupta	Sr. Eng.	Jr. Eng	Sr. Prog	Jr. Prog	Admin	DPM	Sr. Eng.	Jr. Eng	CADD	Sr. Eng.	Jr. Eng	Sr. Eng.	Sys. Insp.	CADD	Sr. Eng.	Totals Hours	Total Cost
e 1	**Preliminary Design**	40	456	790	540	722	16	70	40	132	460	568	0	0	0	0	0	0	104	3,938	$664,093
ask 0	Project Management (Phase 1)	40	136	68		24		40	40	40	0	0	0							388	$67,735
ask 1.1	Update Operational Concept	0	72	336	0	130	0	0	0	20	60	0	0	0	0	0		0	40	658	$106,709
ask 1.2	User and System Functional Performance Requirements		48	66	120	80				4	40	60	0						16	434	$60,802
ask 1.3	System Architecture and Standards Report		24	24	120	104				4									24	300	$39,586
ask 1.4	Alternative Analysis and Recommendations	0	0	120	0	0	0	0	0	52	280	380	0	0	0	0		0	0	632	$110,394
ask 1.5	Conceptual Design Plan	0	120	120	160	264	0	0	0	8	80	128	0	0	0	0		0	24	904	$121,407
ask 1.6	OM& M Plan		24		80	80				4										188	$23,327
ask 1.7	Develop Detailed System Requirements		32	56	60	40	16	30												234	$34,152
e 2	**Detailed Design**	40	308	284	192	36	220	250	40	590	1,276	1,972	300	80	0	292	0	1,420	40	7,344	$880,398
ask 0	Project Management (Phase 2)	40	80	36		36			40	160		0	0							392	$68,526
ask 2.1	Conceptual Design and System Requirements Update		24	40						24	40									128	$22,910
ask 2.2	Field Elements Design	0	128	8	128	0	0	0	0	406	1,236	1,972	300	0	0	292	0	1,420	0	5,890	$653,057
Task 2.3	System Software Design	0	76	204	64	0	220	250	0	0	0	0	0	80	0	0		0	40	934	$135,903
se 3	**System Implementation**	60	308	604	602	906	1,058	2,000	40	120	220	280	8	504	1,240	40	500	150	0	8,840	$989,249
Task 0	Project Management (Phase 3)	60	96	48		84			40	40	0	0	0							368	$60,224
Task 3.1	Construction Support Services									80	220	280	8				500			1,088	$141,177
Task 3.2	Software Development/Integration		28	104	44		650	1,300						200	600					2,926	$317,321
Task 3.3	System Deployment / Integration / Acceptance Testing		48	144	112	360	280	700						200	400					2,244	$235,051
Task 3.4	As-Built Plans		8	16												40		150		214	$18,424
Task 3.5	Overall Field and System Integration		80	80	350	350														860	$107,609
Task 3.6	System Documentation		24	124		32	128							24	120					452	$56,891
Task 3.7	Training		24	48	96									40	80					288	$34,004
Task 3.8	60-day Operational Testing			40		80								40	40					200	$18,548
Phase 4	**Warranty Period**				240															240	$32,715
	Total Labor Cost	140	1,072	1,682	1,574	1,564	1,294	2,320	120	842	1,956	2,820	308	584	1,240	332	500	1,570	144	20,162	$2,466,455

Subconsultant Oversight - Siemens ITS (3%)	$32,758
Travel/ODC	$92,770
Software Licenses	$240,000
Computer Hardware/COTS Software/Central Comm. Equipment	$246,000
Cost of Living Adjustment (3.5%/year)	$104,830
Total Project Cost	**$3,182,813**

Total Cost by Phase/Team Member

Phase 1	$9,070	$100,393	$141,354	$73,609	$57,703	$2,369	$7,800	$2,733	$24,580	$89,000	$55,664	$0	$0	$0	$0	$0	$0	$19,620
Phase 2	$9,070	$87,609	$51,531	$26,172	$2,877	$32,567	$27,857	$2,733	$109,884	$191,400	$193,256	$31,500	$5,696	$0	$35,040	$0	$65,200	$7,623
Phase 3	$13,605	$87,809	$108,073	$62,060	$72,408	$158,617	$222,858	$2,733	$22,345	$33,000	$27,440	$840	$37,160	$63,500	$4,800	$85,000	$9,000	$0
Phase 4	$0	$0	$0	$32,715	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$31,748	$236,011	$300,958	$214,556	$132,988	$191,553	$258,515	$8,198	$156,789	$293,400	$276,360	$32,340	$43,058	$63,500	$39,840	$85,000	$94,200	$27,444

Total Cost by Phase/Firm

	Total Costs						% Allocations				
Firm	Siemens ITS	KHA	Transmar LIN		MTM	Grand Total	Siemens	KHA	Transmar LIN		MTM
Phase 1	$395,029	$149,244	$0	$0	$19,820	$564,093	70.03%	26.46%	0.00%	0.00%	3.51%
Phase 2	$220,617	$526,020	$5,696	$120,240	$7,623	$860,396	25.06%	59.76%	0.67%	13.68%	0.87%
Phase 3	$728,183	$83,825	$100,680	$78,800	$0	$989,249	73.41%	8.45%	10.18%	7.97%	0.00%
Phase 4	$32,715	$0	$0	$0	$0	$32,715	100.00%	0.00%	0.00%	0.00%	0.00%
	$1,374,524	$758,889	$106,559	$199,040	$27,444	$2,466,455	56.73%	30.77%	4.32%	8.07%	1.11%

Travel			
Round Trips From Northern California	96 Units		
Air Fare	96 Trip	$250	$24,000
Car Rental - 2 days	192 Days	$50	$9,600
Meals	192 Days	$50	$9,600
Hotel Stay	96 Nights	$115	$11,040
Round Trips From Arizona	24 Units		
Air Fare	24 Trip	$250	$6,000
Car Rental - 2 days	48 Days	$50	$2,400
Meals	48 Days	$50	$2,400
Hotel Stay	48 Nights	$115	$5,520
Round Trips From East Coast	6 Units		
Air Fare	6 Trip	$600	$3,600
Car Rental - 5 days	30 Days	$100	$3,000
meals 5 Days	30 Days	$50	$1,500
Hotel Stay 5 Days	30 Nights	$115	$3,450
Mileage			
200 miles per month	7200	0.375	$2,700
Total Travel			**$84,810**
ODC			
Fedex	96	10	$960
Color Copies	2000	1	$2,000
Copying Plans/Sheets	400	10	$4,000
Copy/binding	4000	0.25	$1,000
Total ODC			**$7,960**
Total Travel/ODC			**$92,770**

Software Licenses			
ATMIS Server License	2	$50,000	$100,000
ATMIS Workstation Licenses	4	$5,000	$20,000
CCTV Module	2	$25,000	$50,000
CMS Module	2	$35,000	$70,000
Total Software Licenses			**$240,000**

Computer Hardware/COTS Software/Central Comm. Equipment

Servers	4	$12,000	$48,000
Workstations (dual 19" displays)	4	$4,500	$18,000
Central Communications Equipment	2	$30,000	$60,000
Commercial-off-the-Shelf Software	2	$60,000	$120,000

(includes, data bases, Operating System, video distribution software etc.)

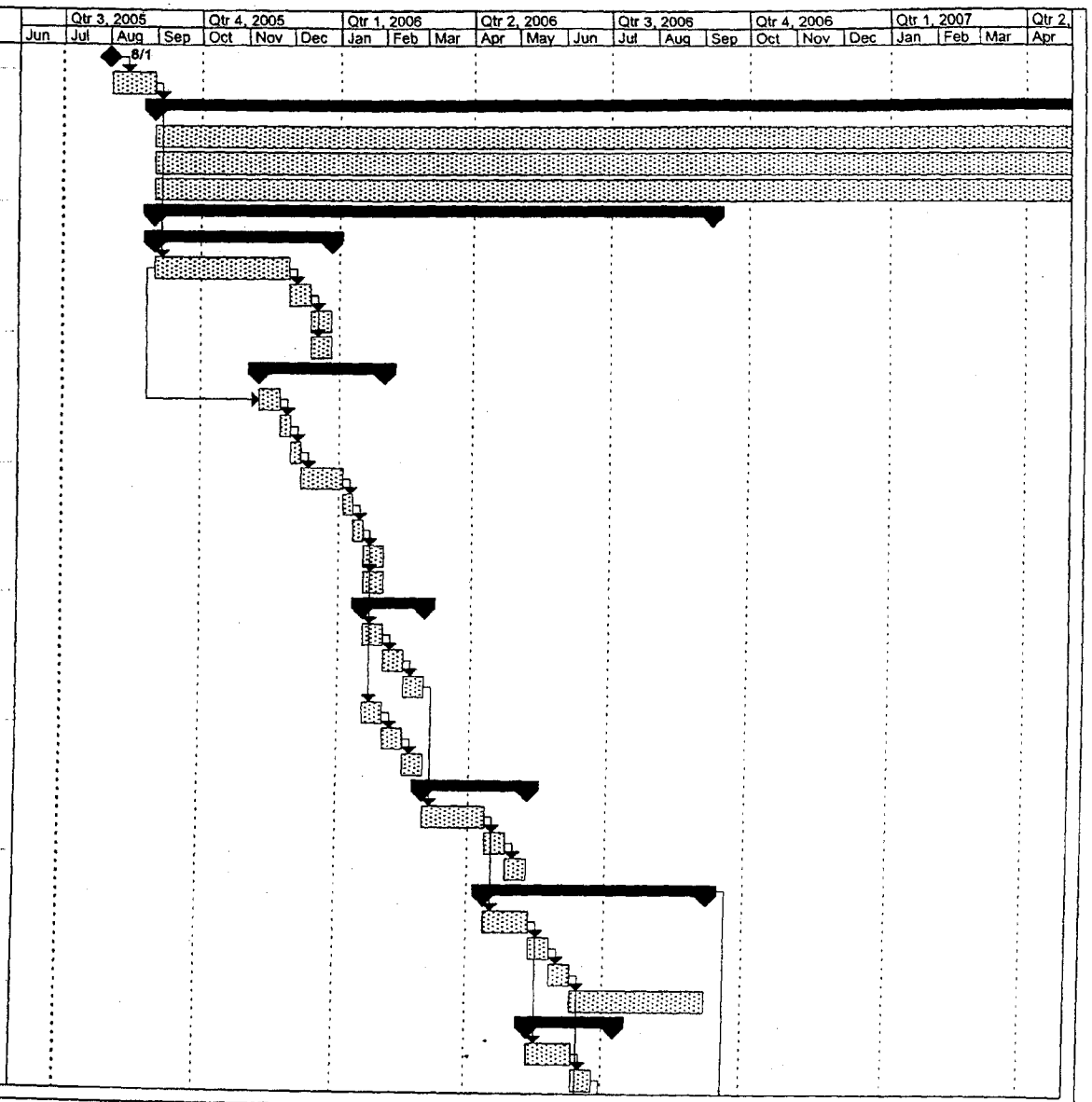
Total Computer Hardware/COTS Software/Central Comm. $246,000

Cost of Living Adjustment

Phase	Amount	% Adjustment	No of years	Adjutment Amount
Phase 1	$564,093	0%	0	$0
Phase 2	$880,398	3.50%	1	$30,814
Phase 3	$989,249	3.50%	2	$70,459
Phase 4	$32,715	3.50%	3	$3,557
Toal Cost of Living Adjustment				**$104,830**

Transmittal No. 1

ID	Task Name
1	NTP
2	Contract Mobilization
3	**Project Management**
4	Project Meetings and Project Reports
5	Project Coordination
6	Project Schedule and Budget
7	**Phase 1: Conceptual Design**
8	**Update Operational Concept**
9	Deliverable: Draft Operational Concept Report
10	Agency Review
11	Deliverable: Final Operational Concept Report
12	Deliverable:Draft System Validation Plan
13	**Develop User Requirements and Functional Requirements**
14	Deliverable: Draft User Requirements Report
15	Agency Review
16	Deliverable: Final User Requirements Report
17	Deliverable: Draft Functional Requirements Report
18	Agency Review
19	Deliverable: Final Functional Requirements Report
20	Deliverable: Draft System Verifications Plan
21	Deliverable: Expanded System Validation Plan
22	**Develop System Architecture and Standards Report**
23	Deliverable: Draft System Architecture
24	Agency Review
25	Deliverable: Final System Architecture
26	Deliverable: Draft Standards Report
27	Agency Review
28	Deliverable: Final Standards Report
29	**Perform Alternatives Analysis and Recommendations**
30	Deliverable: Draft Alternatives Analysis Report
31	Agency Review
32	Deliverable: Final Alternatives Analysis Report
33	**Develop a Conceptual Design Plan**
34	Deliverable: Draft Conceptual Design
35	Agency Review
36	Deliverable: Final Conceptual Design
37	Field Survey Document
38	**Develop an Operations & Maintenance Plan**
39	Deliverable: Draft Operations and Maintenance Plan
40	Agency Review

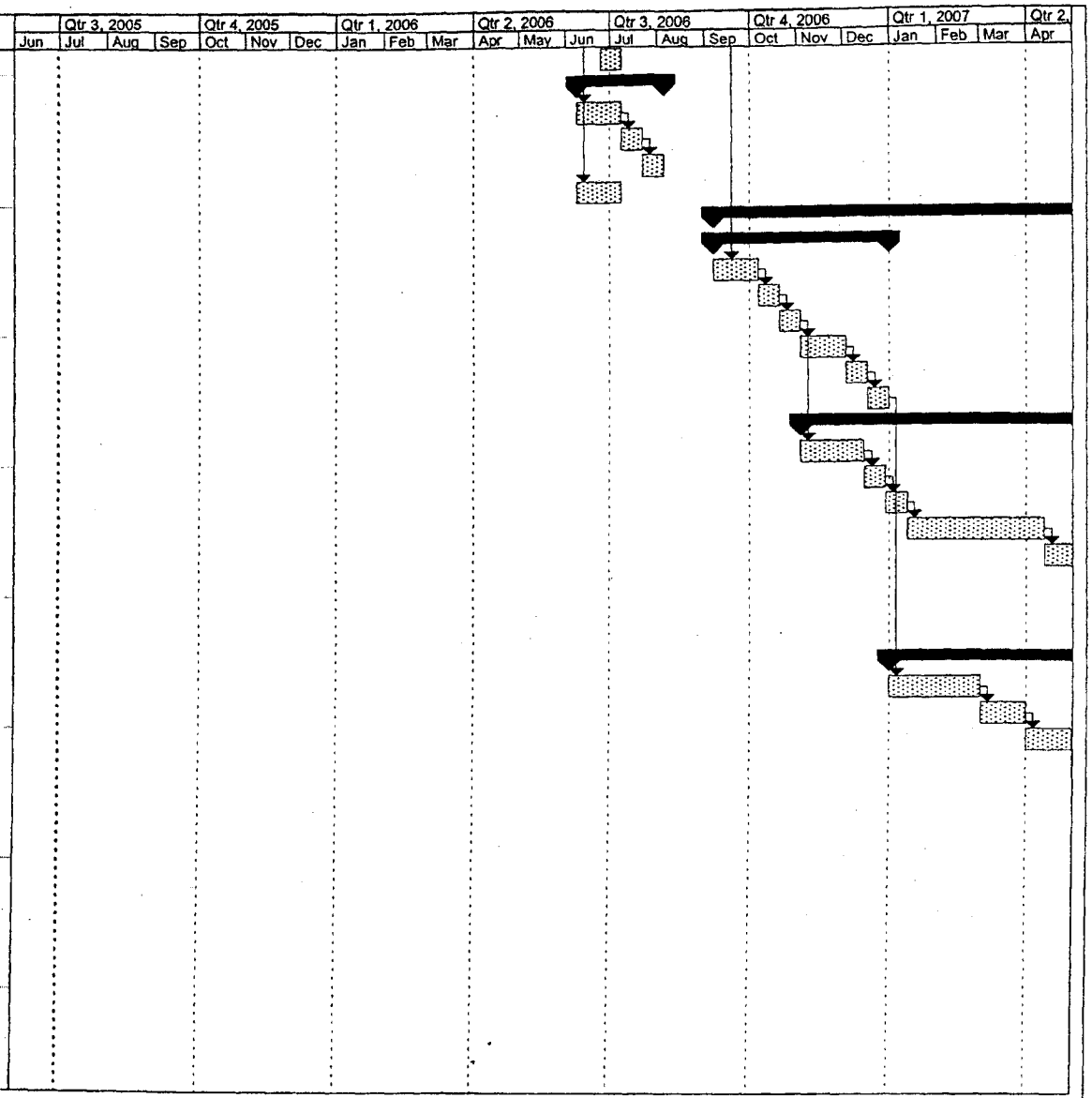


Project: POLB ATMIS System
Date: Thu 6/30/05

Task
Split
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
External Milestone
Deadline

Transmittal No. 1

ID	Task Name
41	Deliverable: Final Operations and Maintenance Plan
42	**Develop Detailed System Requirements**
43	Deliverable: Draft Detailed System Requirements
44	Agency Review
45	Deliverable: Final Detailed System Requirements
46	Deliverable: Draft Sub-System Verification Plan
47	**Phase 2: Detailed Design**
48	**Conceptual Design and System Requirements Update**
49	Deliverable: Draft Updated Conceptual Design
50	Agency Review
51	Deliverable: Final Updated Conceptual Design
52	Deliverable: Draft Updated System Requirements
53	Agency Review
54	Deliverable: Final Updated System Requirements
55	**Field Elements Design PS&E**
56	Draft Basis of Design Document
57	Agency Review
58	Final Basis of Design Document
59	15% PS & E
60	50% PS & E
61	100 PS & E
62	Final PS & E
63	Draft Component Verification Plan
64	**System Software Design**
65	Deliverable: Draft System Software Design Specification
66	Agency Review
67	Deliverable: Final System Software Design Specification
68	Draft Interface Control Document
69	Agency Review
70	Final Interface Control Document
71	Draft System Integration Plan
72	Agency Review
73	Final System Integration Plan
74	Deliverable: Final System Validation Plan
75	Deliverable: Final System Verification Plan
76	Deliverable: Final Sub-system Verification Plan
77	Deliverable: Final Componenent Verification Plan
78	Deliverable: Draft Acceptance Testing Plan and Procedures
79	Agency Review
80	Deliverable: Final Acceptance Testing Plan and Procedures

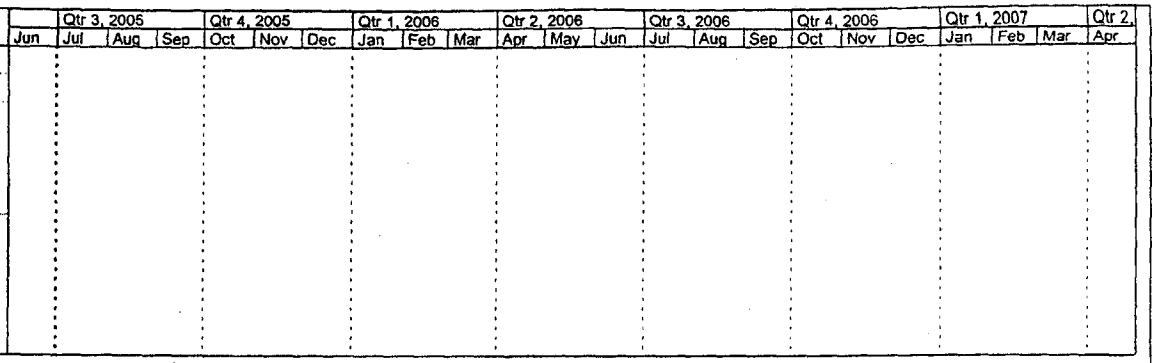


Project: POLB ATMIS System
Date: Thu 6/30/05

Task
Split
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
External Milestone
Deadline

Transmittal No. 1

ID	Task Name
81	**Construction (To be done by Others)**
82	**Phase 3: System Implementation**
83	Construction Support and Inspection Services
84	Software Development / Integration
85	System Deployment / Integration/Acceptance Testing
86	As-Built Plans
87	Overall Field and System Integration Services
88	System Documentation
89	Training
90	60 - Day Operational Testing
91	**Phase 4: Warranty Period**



Project: POLB ATMIS System
Date: Thu 6/30/05

Task
Split
Progress
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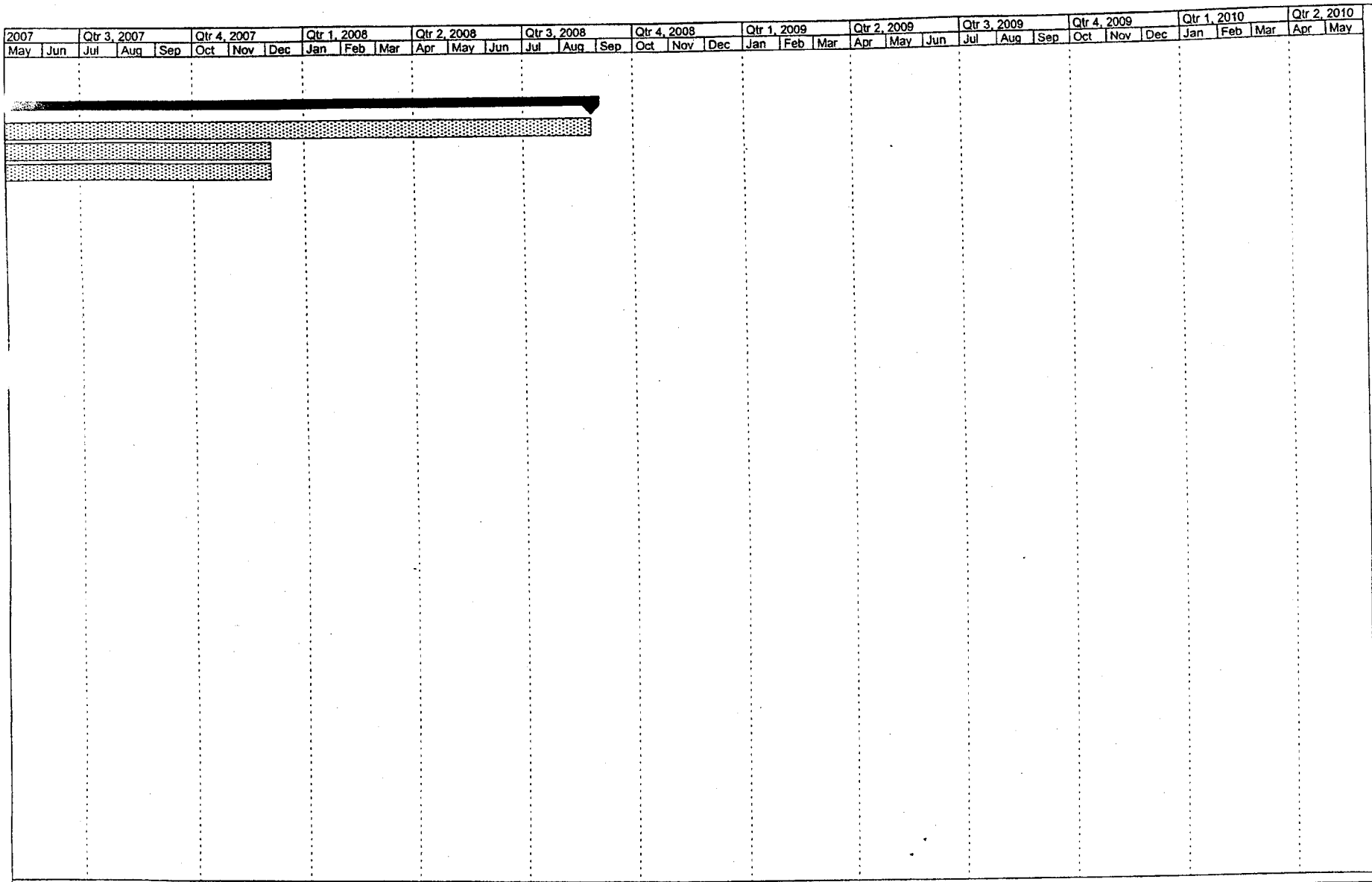
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
External Milestone
Deadline

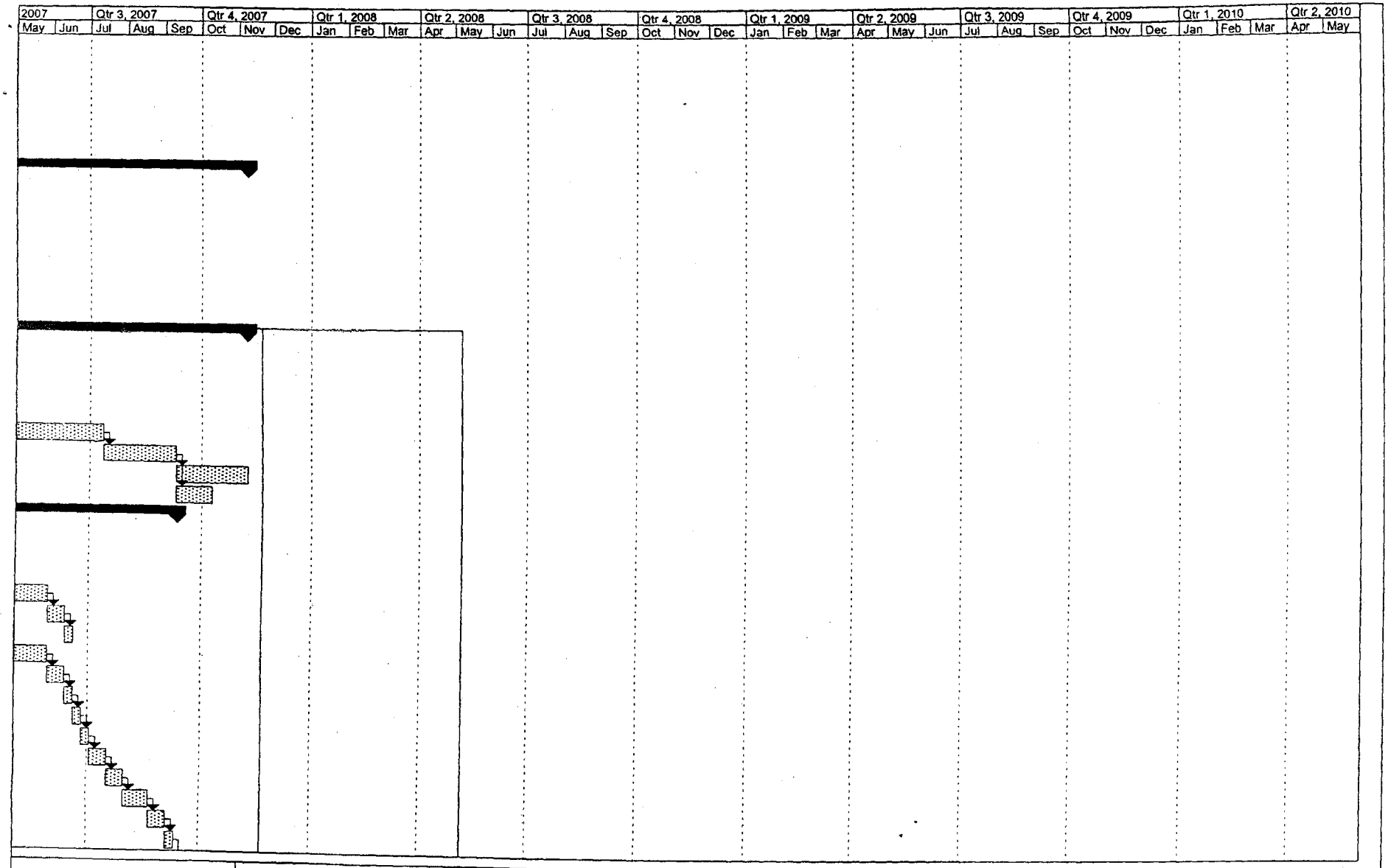
Transmittal No. 1



Project: POLB ATMIS System
Date: Thu 6/30/05

Task	Summary	Rolled Up Progress	Deadline		
Split	Rolled Up Task	External Tasks			
Progress	Rolled Up Split	Project Summary			
Milestone	Rolled Up Milestone	External Milestone			

Transmittal No. 1



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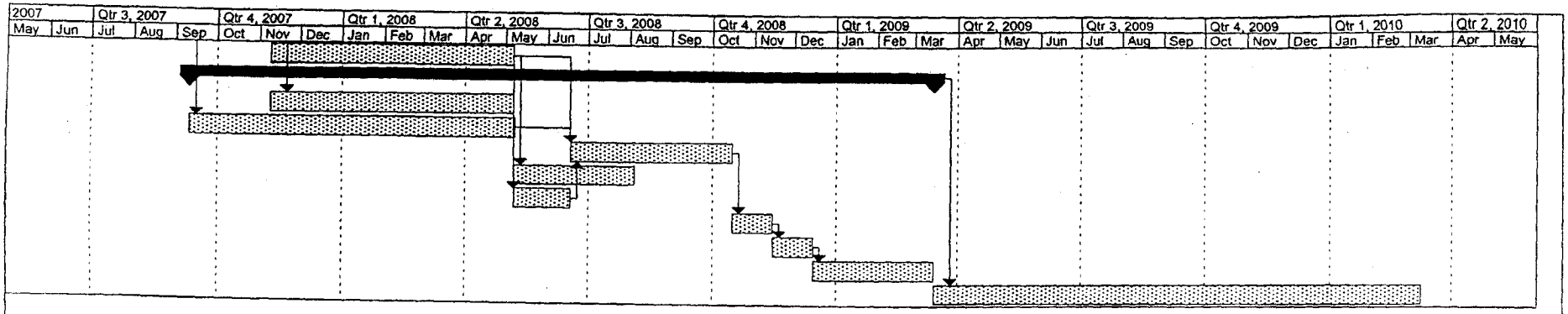

Project: POLB ATMIS System
Date: Thu 6/30/05

Task	Summary	Rolled Up Progress	Deadline
Split	Rolled Up Task	External Tasks	
Progress	Rolled Up Split	Project Summary	
Milestone	Rolled Up Milestone	External Milestone	

Exhibit "D"

Advanced Transportation Management Information and Security System (ATMIS) Project

Project Funding breakdown, per Agency

Agency	Amount
Port of Long Beach	$1,100,000
Port of Los Angeles	$1,100,000
Alameda Corridor Transportation authority	$1,100,000
Los Angeles Metropolitan Transportation Authority ("Metro")	$4,236,000
Caltrans	$414,000
Total	**$7,950,000**

EXHIBIT "D"

Exhibit "E"

Advanced Transportation Management Information and Security System (ATMIS) Project

Project Cost Estimate

1. ATMS	**Amount**
1.1 Terminal Gate Queue Detectors at 17 terminals ($65k per terminal)	$1,105,000
1.2 CCTV surveillance at 16 locations ($40,000 per camera)	$640,000
1.3 Links to other ITS external systems	$550,000
2. ATIS	
2.1 CMS at 15 locations ($100,000 per CMS)	$1,500,000
3. Communication System	
3.1 Equivalent to approx. 10 miles of fiber installation ($150,000 per mile)	$1,500,000
Subtotal	**$5,295,000**
Design/PS&E @ 12% of subtotal	$423,600
System Integration at 8% of subtotal	$635,400
Construction Management @ 15% of subtotal	$794,250
Contingency @ 15% of subtotal	$794,250
Total	**$7,942,500**

Note: This preliminary estimate is based on the estimate presented in the Concept of Operations.

EXHIBIT "E"

CONTRACT FOR CONSULTING SERVICES

BETWEEN THE CITY OF LONG BEACH AND

SIEMENS ENERGY & AUTOMATION, INC.
250 WEST COLORADO BOULEVARD, SUITE 110
ARCADIA, CALIFORNIA 91007
(626) 294-9255
FAX NO. (626) 294-9259

THIS CONTRACT is made and entered into, in duplicate, as of the date executed by the Executive Director of the Long Beach Harbor Department ("Executive Director"), by and between the **CITY OF LONG BEACH**, a municipal corporation, acting by and through its Board of Harbor Commissioners ("**City**"), pursuant to authority granted by said Board at its meeting of _____, 2005; and **SIEMENS ENERGY & AUTOMATION, INC.**, a Delaware corporation ("**Consultant**").

Robert E. Shannon
City Attorney of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802-4664
Telephone (562) 570-2200

1. This contract is made with reference to the following facts and objectives:

1.1 City has the need for consulting services regarding the proposed Advanced Transportation Management Information and Security System.

1.2 Consultant represents that it has in its employ licensed and experienced personnel who are qualified to render these services.

1.3 City wishes to employ Consultant upon the following terms and conditions to render such services.

2. Consultant shall provide, in accordance with generally accepted professional and technical standards currently in effect and the current version of the Port of Long Beach Guideline for Engineering Professional Services, which are

EXHIBIT F

incorporated by this reference, such services within the scope of work as may be requested in writing by City's Chief Harbor Engineer. The scope of work is Phases 1 and 2 described in the Final Cost Estimate included within Exhibit "A" attached hereto and incorporated by this reference. Any additional phases described in Exhibit "A" would be authorized and funded only if City decides to proceed with the project after environmental review and if the contract is amended to include those phases. However, Consultant agrees to do the work on all phases described in Exhibit "A" for the amounts set forth in Exhibit "A" if the contract is so amended. Any equipment purchases must be approved in advance in writing by the Chief Harbor Engineer and shall be made in accordance with 49 CFR, Part 18.32.

3. The term of this contract shall commence on September 1, 2005, and, subject to the provisions of paragraph 9, shall terminate on August 31, 2010. The term shall also be the performance period for the scope of work set forth in Exhibit "A."

4. Charges made by Consultant for such services shall be on the basis of firm fixed hourly rates as set forth in Exhibit "A" and incorporated by this reference. Other direct costs approved in advance by the Chief Harbor Engineer shall be reimbursed based on the net cost without mark-up. The rates set forth in Exhibit "A" shall not be increased except with the prior written consent of the Chief Harbor Engineer, whose consent may be withheld in his sole and absolute discretion. If approved, rate increases shall not exceed the lesser of the cost of living adjustment set forth in Exhibit "A" or direct salary increases for the individuals providing services under this contract, and shall

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be substantiated by audit and/or consultant employee pay records.

5. Consultant shall submit a separate statement not later than the tenth day of each month for services which have been performed during the immediately preceding month, referring in each of the statements to the charge point for such project previously furnished by the Chief Harbor Engineer and detailing the services performed and expenses, if any, incurred. The monthly statement shall also include a one page progress report as described in the Engineering Professional Services Guidelines. All payments to Consultant shall be made by City in due course, not to exceed thirty (30) days, after approval of invoice by the Chief Harbor Engineer.

6. Subject to the provisions of subparagraph 6.1, the total amount which shall be payable by City to Consultant for Consultant's services during the term of this contract shall not exceed $1,600,000 ($564,093 for Phase 1, $880,398 for Phase 2, and $155,509 as an allowance for actual expenses in Phases 1 and 2 and subconsultant oversight, travel/ODC, and cost of living adjustment).

6.1 If, during the course of the described services, additional work beyond the scope of services described in Exhibit "A" is, in the opinion of the Chief Harbor Engineer, required or desired for Phases 1 or 2, the Chief Harbor Engineer may authorize such additional work by Consultant; provided, total compensation to be paid hereunder, including compensation for such additional services, shall not exceed $1,900,000.

7. All designs, sketches, drawings, specifications,

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data and other information, in whatever form or medium, compiled or prepared by Consultant in performing its services or furnished to Consultant by City shall be the property of City and City shall have the unrestricted right to use or disseminate same without payment of further compensation to Consultant. Copies of Consultant's work product may be retained by Consultant for its own records.

8. In performing its design services hereunder, Consultant shall be responsible for the following:

8.1 Consultant shall research record information relevant to the design project, which may include, but not be limited to, underground utility maps and records, survey data, soil reports, etc. City shall provide such information in its possession, but the providing of same shall not relieve Consultant of its obligation to review and research such information in order to assure its completeness and accuracy.

8.2 If this contract includes construction support services by Consultant, Consultant shall review and respond to any contractor submittals within seven (7) calendar days.

9. City shall have the right to terminate this contract at any time upon ten (10) days' written notice to Consultant. If the contract is so terminated prior to the expiration of the term, Consultant shall be paid for those charges which have accrued but not been paid through the effective date of termination. Consultant agrees to accept such amount, plus all amounts previously paid, as full payment and satisfaction of all obligations of City to Consultant.

10. Neither City nor any of its employees shall have any

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control over the conduct of Consultant, or employees of Consultant, except as herein set forth, and Consultant and employees of Consultant shall not, at any time or in any manner, represent that Consultant or employees of Consultant, or any of them, are the officers, agents, or employees of City. It is expressly understood and agreed that Consultant is, and shall at all times remain, as to City a wholly independent contractor, and each party's obligations to the other party are solely such as are set forth in this contract. Consultant shall be free to contract for similar services to be performed for others during this contract.

11. Consultant agrees, subject to applicable laws, rules, and regulations, not to discriminate in the performance of this contract against any employee or applicant for employment on the basis of race, color, national origin, religion, sex, sexual orientation, AIDS, HIV status, age, disability, handicap, or Vietnam Era veteran status. Consultant shall ensure that applicants are employed and that employees are treated during employment without regard to any of these bases, including but not limited to employment, upgrading, promotion, demotion, transfer, recruitment, recruitment advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. Consultant agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by City setting out the provisions of this nondiscrimination clause. Consultant shall in all solicitations or advertisements for employees state that all qualified applicants will receive consideration for employment without regard to these bases.

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12. Any notices to be given under this contract shall be given in writing. The notices may be served by personal delivery, facsimile transmission or by first class regular mail, postage prepaid. Any notice, when served by mail, shall be effective two (2) calendar days after the date of mailing, and when served by facsimile transmission or personal delivery shall be effective upon receipt. For the purposes hereof, the address of City, and the proper person to receive any such notices on its behalf, is: Executive Director, Long Beach Harbor Department, P.O. Box 570, Long Beach, California 90801, FAX number (562) 901-1733; and the address and FAX number of Consultant as indicated above.

13. This contract contemplates the personal services of Consultant and its employees, and it is recognized by the parties hereto that a substantial inducement to City for entering into this contract was, and is, the professional reputation and competence of Consultant and its employees. Neither this contract nor any interest therein may be assigned by Consultant except upon the prior written consent of the Executive Director. Any attempted assignment or delegation without such consent shall be void, and any assignee or delegate shall acquire no right or interest by reason of such attempted assignment or delegation. Furthermore, Consultant shall not subcontract any portion of the performance contemplated and provided for hereunder without the prior written approval of the Chief Harbor Engineer. Nothing herein shall prevent Consultant from employing or hiring as many employees as Consultant may deem necessary for the proper and efficient execution of this contract.

14. Consultant covenants that both itself, in its

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corporate capacity, and its principals presently have no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this contract.

15. Consultant shall maintain the confidentiality of all proprietary or confidential information obtained as a result of any assignment pursuant to this contract. Consultant shall not divulge to any person or entity other than City any conceptual designs, technical details, pricing or other such information regarding new or existing proprietary technology presented by prospective or current vendors who have requested that the information be kept confidential.

16. Consultant shall defend, indemnify, hold, protect and save harmless the City of Long Beach, the Board of Harbor Commissioners, and their officials, commissioners, employees, and agents ("indemnified parties") from and against any and all actions, suits, proceedings, claims, demands, damages, losses, liens, costs, expenses or liabilities, of any kind or nature whatsoever ("claims") which may be brought, made, filed against, imposed upon or sustained by the indemnified parties, or any of them, alleging or relating to injury to or death of persons or damage to property, including property owned by or under the care and custody of City, and that such injury, death or damage arises from or is attributable to or caused by the negligence or willful misconduct of Consultant, its officers, agents or employees, in connection with or pertaining to this contract. City shall notify Consultant of any such claim, shall tender its defense to Consultant, and assist Consultant, as may be reasonably requested,

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in such defense. Upon such notification and tender, Consultant shall have independent duties to defend such claim, and to indemnify the indemnified parties except to the extent that such injury, death or damage is determined by a court of competent jurisdiction to have been caused by the negligence or willful misconduct of the indemnified parties or any of them. Payment of a claim shall not be a condition precedent to an indemnified party's right to defense and indemnity.

17. As a condition precedent to the effectiveness of this contract, and without limiting Consultant's obligations of indemnity set forth above, Consultant, at its cost, shall procure and maintain in full force and effect during the term of this contract, and at such other times as may be required under "claims-made" insurance if such form of insurance is provided, the following types and levels of insurance:

(a) commercial general liability insurance with coverage at least as broad as Insurance Services Office Commercial General Liability Form CG0001, with a per occurrence limit of not less than $1,000,000 and, if written with an annual aggregate, an aggregate limit of not less than $2,000,000;

(b) automobile liability insurance with coverage at least as broad as Insurance Services Office Form CA0001 covering automobile liability code 1 (any auto), with a per accident limit of not less than $1,000,000;

(c) workers' compensation insurance, as required by the State of California, and employer's liability insurance, with a limit of not less than $1,000,000 per accident for

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bodily injury and disease, endorsed to waive all rights of subrogation against indemnified parties for losses paid arising from the work performed by Consultant pursuant to this contract;

(d) professional liability insurance, with a limit of not less than $1,000,000 per claim without environmental restrictions.

Each such policy shall be from a company or companies with a current A.M. Best's rating of no less than A:VII and authorized to do business in the State of California, or otherwise allowed to place insurance through surplus line brokers under applicable provisions of the California Insurance Code or any federal law. Any deductible or self-insured provision must be approved in writing by Executive Director and shall protect City, its officials, employees and agents in the same manner and to the same extent as they would have been protected had the insurance not contained such provision. The deductible or self-insured amount shall be shown on any evidence of insurance provided to City, and City reserves the right to limit the amount and to review Consultant's financial statements if the amount exceeds a level acceptable to City.

Each such policy shall be endorsed to provide that the policy shall not be cancelled or the coverage reduced until a thirty-day (30) written notice of cancellation has been served upon the Executive Director of the Harbor Department by registered or certified mail except ten (10) days notice shall be sufficient upon cancellation for non-payment of premium.

In addition, the policy or policies required under

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paragraphs (a) and (b) above shall be endorsed to provide as follows:

(i) That the Indemnified Parties, while acting within the scope of their authority, shall be additional insureds.

(ii) That such insurance is primary and any other insurance, deductible, retention or self-insurance maintained by the Indemnified Parties shall not contribute with such primary insurance.

(iii) That in the event of one insured incurring liability to any other insured, the policy shall cover the insured against whom claim is or may be made in the same manner as if separate policies had been issued to each insured, except that the limits of insurance shall not be increased thereby.

(iv) That the coverage provided therein shall apply to the obligations assumed by Consultant under the indemnity provisions of this contract, unless the policy or policies contain a blanket form of contractual liability coverage.

(v) That any failure by the named insured to comply with reporting provisions of the policy or policies or breaches or violations of warranties shall not affect coverage provided to the indemnified parties.

If any of the required insurance is provided on a "claims-made" basis, any "prior acts" coverage or "retroactive date" on such insurance and all subsequent insurance shall be as of the first date of the term of this contract. Upon expiration or

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termination of coverage of required insurance, Consultant shall procure and submit to City evidence of "tail" coverage or an extended reporting coverage period endorsement for the period of at least three (3) years from the time that all work under this contract is completed.

All subconsultants shall be included as additional insureds under Consultant's policies, or Consultant shall cause subconsultants to purchase the appropriate insurance in compliance with the terms of this contract.

Consultant shall deliver either certified copies of the required policies or endorsements on forms approved by the City ("evidence of insurance") to the Executive Director for approval as to sufficiency and to the City Attorney for approval as to form. At least fifteen (15) days prior to the expiration of any such policy, evidence of insurance showing that such insurance coverage has been renewed or extended shall be filed with the Executive Director. If such coverage is cancelled or reduced, Consultant shall, within ten (10) days after receipt of written notice of such cancellation or reduction of coverage, file with the Executive Director evidence of insurance showing that the required insurance has been reinstated or has been provided through another insurance company or companies. Consultant agrees to suspend and cease all operations hereunder during such period of time as the required insurance coverage is not in effect and evidence of insurance has not been furnished to the City. City shall have the right to withhold any payment due Consultant until Consultant has fully complied with the insurance provisions of this contract.

18. Consultant shall obtain and maintain any necessary

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licenses and permits required under Title 3 and Title 5 of the Long Beach Municipal Code. City may withhold any payment to Consultant until Consultant comes into compliance with such licensing and permitting requirements.

19. This contract shall be deemed made in the State of California and shall be governed by the laws of said State (except those provisions of California law dealing with conflicts of law), both as to interpretation and performance.

20. In the event of any conflict or ambiguity between this written agreement and any exhibit hereto, the provisions of this agreement shall govern.

21. If there is any legal proceeding between the parties to enforce or interpret this contract or to protect or establish any rights or remedies hereunder, the prevailing party shall be entitled to its costs and expenses, including reasonable attorneys' fees.

22. This contract shall not be amended, nor any provision or breach hereof waived, except in writing signed by the parties which expressly refers to this contract.

23. This contract, including all exhibits, constitutes the entire understanding between the parties and supersedes all other agreements, oral or written, with respect to the subject matter herein.

24. The Disadvantaged Business Enterprise ("DBE") participation for this contract is 12.8% of the contract amount. Consultant submitted Form PF-12 regarding DBE participation which is attached as Exhibit "B" and incorporated by this reference. Consultant and its subconsultants shall comply with applicable

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requirements of 49 CFR, Part 26, of the Code of Federal Regulations, entitled "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs," in the award and administration of DOT-assisted contracts. The regulations in their entirety are incorporated by this reference. Consultant and its subconsultants shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. Failure by Consultant and its subconsultants to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as deemed appropriate.

25. The Consultant shall include the following in each subcontract the Consultant signs with a subconsultant:

25.1 A subconsultant shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract.

25.2 The subconsultant shall carry out applicable requirements of 49 CFR, Part 26, in the award and administration of this contract.

25.3 Consultant shall include in their subcontracts language providing the use of appropriate alterative dispute resolution mechanisms to resolve payment disputes.

26. The Consultant shall not be entitled to any payment for the work or material, unless it is performed or supplied by the listed subconsultants (DBE or nonDBE), or by the Consultant's own forces, pursuant to prior written authorization of the Chief Harbor Engineer. This is the case even if other contract work is not completed and has not been accepted in conformance with the terms

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of the contract.

27. The Consultant shall pay all DBE subconsultants and nonDBE subconsultants for satisfactory performance of their contracts within ten (10) days from receipt of each payment from the City to the Consultant. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the City. The Consultant agrees further to release retainage payments to each subconsultant within thirty (30) days after the subconsultant's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the City. This clause applies to both DBE and nonDBE subconsultants.

28. Consultant shall prepare and submit a Monthly Report of DBE Participation, in the form included as Exhibit "12," throughout the duration of the contract. The updated Monthly Report shall be furnished to the Deputy Chief Harbor Engineer of Construction with each monthly invoice. The Consultant shall maintain records of all Consultant and subconsultant agreements entered into with DBE subconsultants and records of materials purchased from DBE suppliers. The records shall provide for each subconsultant and vendor, their name and address, the date of payments and the total dollar figure paid to each. Upon completion of the contract, a summary of these records shall be prepared on Form "17-F," "Final Report Utilization of Disadvantaged Businesses" of the Caltran's Assistance Procedures Manual and certified correct by the Consultant or the Consultant's authorized representative, and shall be furnished to the Chief Harbor Engineer. The summary

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shall be furnished to the Chief Harbor Engineer with the final invoice. Failure to provide the summary of DBE payments with the final invoice will result in the invoice being in dispute and will result in City withholding Twenty Thousand Dollars ($20,000.00) from payments otherwise due Consultant until the report is received.

29. The Consultant may not substitute, or terminate for convenience a subconsultant listed in the original bid/proposal without the prior written approval of the Chief Harbor Engineer. However, the Consultant may add a firm to perform work originally planned to be done by the Consultant's own forces. The Consultant must make an adequate good faith effort to find another certified DBE subconsultant to substitute for the original DBE. The Consultant will be required to make good faith efforts to replace the original DBE subconsultant with another DBE subconsultant to the extent needed to meet the contract goal. DBEs must be certified at the time of the substitution or addition.

30. Consultant shall submit requests for substitution in writing to the Chief Harbor Engineer. Prior to approval of the Consultant's request for substitution to the Chief Harbor Engineer, the Consultant shall give notice in writing to the listed DBE subconsultant of the Consultant's request to substitute and reasons for the request. The notice shall be served by certified or registered mail to the last known address of the subconsultant. The listed subconsultant who has been so notified, shall have five (5) working days within which to submit written objections to the substitution to the Chief Harbor Engineer. Failure to respond to a written objection shall constitute the listed subconsultant's

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consent to the substitution.

31. In conformance with Federal DBE regulation Sections 26.53(f)(1) and 26.53(f)(2), Part 26, 49 CFR, the Consultant shall not:

31.1 Terminate for convenience a listed DBE subconsultant and then perform that work with its own forces (personnel), or those of an affiliate, unless the Consultant has received prior written authorization from the Chief Harbor Engineer to perform the work with other forces or to obtain materials from other sources.

31.2 If a DBE subconsultant is terminated or fails to complete its work for any reason, the Consultant will be required to make good faith efforts to replace the original DBE subconsultant with another DBE subconsultant to the extent needed to meet the contract goal.

32. If a DBE subconsultant is decertified during the life of the contract, the decertified subconsultant shall notify the Consultant in writing with the date of decertification. If a subconsultant becomes a certified DBE during the life of the contract, the subconsultant shall notify the Consultant in writing with the date of certification.

33. The dollar value of work performed by a DBE is credited/counted toward the goal only after the DBE has been paid.

34. Credit for materials or supplies purchased from DBEs will be as follows:

34.1 If the materials or supplies are obtained from a DBE manufacturer, one hundred percent(100%)of the cost of the materials or supplies will count toward the DBE goal.

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34.2 If the materials or supplies are purchased from a DBE regular dealer, sixty percent (60%) of the cost of the materials or supplies will count toward the DBE goal.

34.3 Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not DBE regular dealers with the meaning of this paragraph.

34.4 Credit for materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer will be limited to the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies, provided the fees are reasonable and not excessive as compared with fees charged for similar services.

35. City, State and Federal government and/or their duty authorized representatives have the right to access and audit the Consultant's and subconsultants' records for a period of three (3) years after the date of the final payment.

36. Any subcontract in excess of Twenty Five Thousand Dollars ($25,000.00), entered into as a result of this contract, shall contain all the provisions stipulated in this contract to be applicable to subconsultants.

37. Consultant agrees that the Contract Cost Principles and Procedures, 48 CFR, Federal Acquisition Regulations System, Chapter 1, Part 31, et seq., shall be used to determine the allowability of individual items of cost.

38. The Consultant agrees to comply with Federal

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procedures in accordance with 49 CFR, Part 18, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments.

39. Any costs for which payment has been made to Consultant that are determined by subsequent audit to be allowable under 48 CFR, Federal Acquisition Regulations System, Chapter 1, Part 31, et seq., of 49 CFR, Part 18, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments, are subject to repayment by Consultant to City.

40. The Consultant warrants that it has not employed or retained any company or person, other than a bona fide employee working for the Consultant, to solicit or secure this Contract, and that it has not paid or agreed to pay any company or person, other than a bona fide employee, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or formation of this Contract. For breach or violation of this warranty, the City will have the right to annul this Contract without liability, or at its discretion to deduct from the Contract price or consideration, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee. A Certification of Consultant regarding Commissions and Fees is attached as Exhibit "9" and incorporated by this reference and a Certification

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of Local Agency regarding Fees is attached as Exhibit "10" and incorporated by this reference.

SIEMENS ENERGY & AUTOMATION, INC.,
a Delaware corporation

_____, 2005 By: _____
Name: _____
Title: _____

_____, 2005 By: _____
Name: _____
Title: _____

CONSULTANT

CITY OF LONG BEACH, a municipal corporation, acting by and through its Board of Harbor Commissioners

_____, 2005 By: _____
Richard D. Steinke,
Executive Director
Long Beach Harbor Department

CITY

The foregoing document is hereby approved as to form.

ROBERT E. SHANNON, City Attorney

_____, 2005 By: _____
Charles M. Gale, Deputy

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The Ports of Long Beach/Los Angeles

Advanced Transportation Management, Information and Security System

Scope of Work

Final

Submitted To:

The Ports of Long Beach and Los Angeles

Submitted By:

Siemens ITS

In Association With:

Kimley-Horn & Associates, Inc.

LIN Consulting, Inc

MTM Logistics, Inc.

TranSmart Technologies, Inc.

Last Updated

June 28, 2005

EXHIBIT "A"

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Introduction

The objective of the PORTS ATMIS System Project is to design and implement IT solutions to manage and control the movement of commercial vehicles within the Port while increasing security. It is envisioned that upon completion of this project, the following potential benefits would be achieved:

- Improved security and safety
- Improved incident response time
- Improved reliability and predictability of the transportation system
- Improved multimodal mobility
- Enhanced goods movement
- Reduced travel delay and emissions

The System will consist of the following five subsystems:

- ATMIS Central Hardware and Software
- Vehicle Surveillance System
- Information Dissemination
- Information Sharing
- Communications System

1. Advanced Transportation Management, Information and Security System (ATMIS) Central Hardware and Software

This component consists of the development, design, selection, and implementation of central hardware and software for a complete interjurisdictional ATMIS. It includes the hardware and software necessary to allow monitoring, controlling, and coordinating the operation of, surveillance systems, and traveler information displays to be deployed on the Ports' facilities. The system will be operated from individual agency work stations which will have traffic surveillance capabilities through detecting and monitoring traffic signal status (future), traffic congestion and incidents, and will display this information through an integrated map-based user interface. The system will also be able to detect equipment malfunctions which will enable the operator to initiate appropriate maintenance operation responses and various other responses to traffic events and congestion either manually or automatically.

It is anticipated that the system will provide real-time monitoring and control of connected field devices, real-time communication with selected external systems involved in travel information dissemination or cooperative traffic management, and levels of security to restrict access to unauthorized users. Associated procedures will enable a coordinated response to incidents, congestion, and special events on Ports facilities and surrounding arterials, and freeways. The system will connect to the County of Los Angeles Information Exchange Network (IEN) for data sharing purposes. If and when needed and feasible, the system will provide connections to the traffic signal systems at the Cities of Long Beach and Los Angeles, and Caltrans, to the container tracking system to be deployed by the West Coast MTO Discussion Agreement (WTCMODA) in the future, and with the Corridor-wide CVO system to be deployed by the Priority Corridor. The ATMIS system will provide truck and terminal operators with congestion and travel information regarding travel conditions on Ports and surrounding roadway facilities.

2. Vehicle Surveillance System

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The Project will provide a Vehicle Surveillance System through a combination of devices such as detection devices and closed circuit television cameras. These systems will allow collection of real-time traffic data and information at entrance and exit gates and at other key locations in the Ports where monitoring of traffic is needed. Vehicle detection will be used for both queue length monitoring and traffic flow (volume and occupancy) monitoring. The Project may also provide closed circuit television (CCTV) cameras where needed to allow the Ports staff to monitor traffic through the Ports and confirm incidents. Where appropriate, cameras will be capable of pan-tilt-zoom control. It will also be possible for agencies to share images from any CCTV cameras. The Project will develop Memorandums of Understanding for interjurisdictional sharing of video and data.

The amount, type, and location of surveillance devices will be recommended by the Siemens ITS Team after careful consideration of the user needs, system functional requirements, and available funds.

3. Travel Information Dissemination

The Project will distribute relevant information to motorists using Port roadways and terminal entrances, with the objective of providing the advance information needed for more efficient use of these facilities and avoiding overcrowding. Changeable message signs will be installed on the Ports facilities and if feasible, on surrounding non-Port controlled roadways. If feasible, existing changeable message signs on non-Port facilities will also be used for this purpose. The ATMIS system will allow the Ports staff to control and monitor the CMSs in the Ports area and allow monitoring of signs in the non-Ports facilities. The Project will also develop Memorandums of Understanding for interjurisdictional operations of CMSs.

In addition to CMSs, the Project will explore the use of other travel information dissemination devices such as Highway Advisory Radio (HAR) and Highway Advisory Telephone (HAT) for their applicability to meet Project objectives.

The Project will also provide an automatic flow of relevant traffic information to related Information Service Providers; including eModal and MTC Voyager.

4. Information Sharing

The ATMIS Project will allow the Ports to receive traffic information which includes congestion, CCTV images and CMS status information from surrounding facilities. Interfaces will be developed with the Los Angeles County's Information Exchange Network (IEN) and to other external systems such as Caltrans' Freeway Management System. The ATMIS system will also be capable of providing information collected by the Ports to other agencies in a standard format.

5. Communication System

The project will provide a communications system capable of supporting the other components. The communications network will support center-to-field communications with devices such as traffic signals, vehicle detectors, CCTV cameras, and changeable message signs. Center-to-center communication links will also be provided as needed with computer systems operated by others, such as Caltrans, Los Angeles County, eModal, and MTC Voyager.

Design of the communications system will consider both present and future ITS elements. Primary considerations include the expandability of the system to include other potential stakeholders and users, additional numbers and types of field devices. Possible communications medium technology may include, but not be limited to, twisted pair cable, leased telephone lines, fiber optic cables, spread spectrum radio, or a combination of the above.

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Any recommendations made by the Siemens ITS Team for this project shall be for the implementation of "open systems" and shall be made after careful review of potentially suitable systems. This includes completed systems or systems currently under development.

This document presents the scope of work for designing, deploying and integrating Port of Long Beach/Los Angeles ATMIS System components. The work will be carried out in four distinct phases. In addition to the specific tasks to be carried out in each phase, the Project Management task will continue throughout the Project and is described first. In addition, Siemens ITS has in place a Quality Control and Quality Assurance Program which will govern all activities on the Project.

Task 0: Project Management

Objective: To ensure that the project progresses according to schedule and budget; ensure that integration with other relevant projects is achieved.

Deliverables:

- Project Management Plan
- Systems Engineering Management Plan
- Technical presentations/handouts (once a months)
- Monthly Progress Meetings, Meeting Agendas and Minutes (one a month)
- Monthly Progress Reports with Updated Schedule every three months
- Final Report
- Claims Billings and Financial Information

The Project management shall be conducted by Warren Tighe, PE, Project Manager, Arti Gupta, Ph.d., Deputy Project Manager, and Pierre Pretorius, PE, Deputy Project Manager. Warren and/or Arti will attend all monthly status meetings with the Ports, with Pierre joining them at these meetings as needed. Meetings with the Project agencies will always be attended by Arti, with Warren and Pierre joining them as appropriate.

The Siemens ITS Team Project Management Team shall be responsible for representation of the project to those meetings identified by the Ports as being necessary to attend. This is recognized as being an essential part of ensuring adequate knowledge of the project by other organizations and activities. Work shall include the preparation of presentation materials and appropriate handouts. Prior approval shall be obtained from the Ports for the use of any material.

Similarly, the Siemens ITS Team shall attend any specific project meetings requested by the Ports such as those required for the regular reporting to the Ports and the project agencies. In these cases, additional work shall be to prepare meeting agendas and minutes. Minutes shall comprise brief summaries of the discussed items together with action items (action/responsibility/due date). These shall be submitted to the Ports for distribution. E-mail shall be used extensively for the distribution of project material. Siemens ITS shall construct and maintain a project e-mail list of prime agency contacts.

The Siemens ITS Team shall attend monthly project meetings with the Ports staff. The Project Team shall present project progress including updated project schedule and discuss project issues with the Ports at these meetings for the purposes of receiving the Ports' input.

The Siemens ITS Team shall also provide support to the Ports at Ports Commission meetings as required.

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The Team shall also prepare invoices, and other financial information for review and approval by the Ports.

In order to aid project communications, Siemens ITS shall create a project web-site as part of the firm's web site. Web site content shall include project background, project scope of work and schedule, and list the agency contacts. In addition, project status reports, minutes of meetings and project deliverables shall be posted on the site for ease of access by the agencies. A shared web log shall facilitate capture of informal notes and annotations of project activities that otherwise may fail to be recorded in a sharable format.

Project Coordination

The Siemens ITS Team shall coordinate technical design activities with the involved public agencies for each system component of the project. This shall include:

- Coordination with the Ports of Long Beach and Los Angeles, the City of Long Beach, the City of Los Angeles and Caltrans to gather information on on-going or planned activities that affect this project.
- Coordination with public and private agencies involved with local and regional ITS projects including Caltrans, the County of Los Angeles, and the Los Angeles County Metropolitan Transportation Authority (LACMTA), to assure coordination of effort in design and construction.
- Coordination with other regional and subregional projects which may affect this project such as the South Bay Forum Project, the I-710/Atlantic Boulevard ATMS project, the Information Exchange Network (IEN) Project, RIITS, and Corridor-wide CVO Project.

Project Schedule and Budget

Project tracking starts with the preparation of a comprehensive Project Management Plan (PMP and Systems Engineering Management Plan (SEMP) based on the systems engineering process. The Siemens ITS Team shall generate a PMP and SEMP as follows:

PMP will address the following:

- . Statement of Work, project tasks, and responsibilities
- List of Deliverables
- Work Breakdown Structure
- Activity Breakdown Structure
- Resource Tracking
- Glossary of Terms
- Schedule, Task dependencies
- Ports responsibilities
- Project Team Organization, contact information for key staff on the Project, the roles and responsibilities of each Team member firm on the project.
- Project Control Method, Quality Control Plan for the Project
- Software development process

SEMP will address the following:

- Technical milestones, inter-task relationships,
- intra-project relationships and inter-project relationships.
- Management Plans (configuration, interface, risk, training)

- Systems Engineering life cycle model
- Gate and exit criteria (decision points)
- Technical plans (integration, installation, etc.)
- System description
- Specification tree
- Trade Studies

PMP and SEMP will be living document and will be expanded and amended during the course of the project as needed.

For each Team member firm, the staff shall be identified with specific responsibilities for deliverable submittal as well as review for quality assurance purposes. For each task, a work break down structure which would define the work elements in small manageable chunks. For each of these work elements schedule, deliverable and level of effort by staff category shall be defined.

PMP and SEMP shall be used to track the project progress. The need for remedial measures shall be identified and those measures enacted; from time to time, PMP and SEMP may need to be amended to ensure that a viable and agreed management plan is maintained.

Project progress shall be reported on a regular basis. The Project Manager will have primary responsibility to insure that continuous and accurate updates are made to PMP and SEMP and reflected in the internal project accounting systems. Progress status, will be monitored and analyzed using internal reporting and will include the monitoring of sub-consultant staff and progress. Updates will be made through a biweekly status meeting with all task leaders. The Project Manager will analyze progress and allocate resources between ongoing tasks as appropriate.

PMP and SEMP will then form the basis for the monthly reporting and review of progress with the Ports. The PMP will also include the format of progress reports and the methods for measuring project progress. The Project Manager will prepare and submit written monthly progress report that details the status of work being performed by the Siemens ITS Team. These reports, in a form acceptable to the Ports, will include: a narrative of the tasks accomplished in that month, an outline of the tasks anticipated to be accomplished in the next month, a summary of problems which occurred during the previous month, identification of any anticipated problems, an updated project schedule, an invoice detailing resources spent, and a summary of the percent completion for each task of the project.

The PMP will include Siemens ITS's software development process which will include details of version control and configuration management.

The SEMP will include descriptions of the configuration plans, training requirements and risk assessment of any issues pertaining to design and implementation of the project. The SEMP will also document the systems engineering process that would be used for the project with relevant metrics.

In addition, as part of the Siemens' risk management plan, Siemens ITS will prepare documents detailing the risks associated with the project approach and identify mitigation actions. This information will be shared with the Ports' staff.

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Phase 1: Conceptual Design

In this Phase, the Siemens ITS Team will develop a conceptual design for all Project components. This will be based on updates to Concept of Operations developed previously by the Ports, identification of system requirements, a system architecture, consideration of standards, and an alternatives analysis. The conceptual design will be used to prepare an operation, management and maintenance plan, and detailed requirements for use in detailed design. The Conceptual Design will also serve as the Basis of Design Document, which is used by the Port to gauge the design. The document will identify both technical and engineering issues which should be resolved before starting detailed design.

Task 1.1: Update Operational Concept

Objective: To identify how the Ports and other agencies will collect, distribute, and exchange traffic flow, and cargo flow information to manage traffic through the Ports area

Deliverables:

- 20 meetings with the identified stakeholders– Meeting agenda, and minutes from these meetings.
- Draft Operational Concept Report
- Final Operational Concept Report
- Draft System Validation Plan

The Siemens ITS Team will revise and finalize the Operational Concepts portion of the existing "Concept of Operations" report previously prepared for the Ports. The Operational Concept will identify the expectations, goals, concepts, institutional actions, roles and responsibilities that should be considered in the development of the ATMIS system. The Concept of Operations will also identify how the Ports and other agencies collect truck/traffic flow and cargo flow information from the trucking companies and tenants. This Concept will identify connections, cooperation, and coordination activities with other systems and agencies, and will be used as a basis for the update of the full Concept of Operations report into a comprehensive Conceptual Design Report for the Ports ATMIS.

The stakeholder meetings and Concept of Operations will also include a focus on and provide input for the Operations, Management, and Maintenance Plan to support and maintain the system (Task 1.6).

The following stakeholders have been identified to-date:

- The Port of Long Beach
- The Port of Los Angeles
- The City of Los Angeles
- The City of Long Beach
- Los Angeles County
- MTA
- Caltrans Districts 7, 8, 11 and 12
- Terminal Operators
- Trucking Companies
- Pacific Merchant Shipping Association (PMSA)
- The California Trucking Association (CTA)

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- MTC Voyager
- EModal
- **Alameda Transportation Corridor Authority (ACTA)**

The team will conduct meetings with the above stakeholders to ensure that the policies, procedures, and objectives of each are the foundation of the Operational Concept, and hence, the Implementation Plan. Some of these meetings will be held individually with the agencies, some will be conducted in a workshop format.

The Siemens ITS team will prepare a draft System Validation Plan based on the identified user needs and concept of operations. At this stage, this document can include only generalized questions and high-level operational tests useful in confirming that the implemented system supports the high-level user requirements implied by the Concept of Operations. Further details will be added to the Validation Plan in the following task as more specific user requirements are identified.

When completed, the System Validation Plan will describe a process to confirm that the implemented system meets all user requirements and supports the Concept of Operation. It is assumed that prior to application of the validation plan, the system has previously been verified and accepted as described in a separate System Verification Plan, which includes acceptance testing. The Verification Plan tests the system for operational errors (failures and bugs) and satisfaction of functional requirements, while the Validation Plan tests the system for suitability for the intended purpose (user requirements). The completed Validation Plan will include checks ranging from very high-level questions, such as "Does the system allow use by both the Port of Long Beach and the Port of Los Angeles?" to quite detailed tests such as "Visually observe and count the number of vehicles passing the detector (including multi-trailer trucks) and compare this to the detector-based vehicle count recorded by the system for the same time interval". If such tests are also appropriate for the acceptance testing portion of the system verification plan (as in this example), the Validation Plan will not repeat the test, but cross reference the test in the verification plan, which is implemented first. The requirements traceability matrices will facilitate the cross-referencing of verification tests to system requirements validation.

The question-oriented components of the Validation Plan will include checks useful in the evaluation of prospective alternative system components, including alternative technologies for field equipment and alternative ATMIS software packages.

Task 1.2: Develop User Requirements and Functional Requirements

Objective: To identify how the Ports will operate to manage traffic and security through the Port and the requirements the system must meet for the desired level of operation and cooperation.

Deliverables:

- Draft User Requirements Report
- Final User Requirement Report
- Draft Functional Requirements Report
- Final Functional Requirements Report
- Draft System Verification Plan
- Expanded System Validation Plan

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From the stakeholder interviews and the Concept of Operations, user requirements (needs) will be identified. These requirements identify how the users need the system to function, the capabilities that are expected, and constraints such as cost, reliability, and staffing expectations. User requirements will be developed for CCTV surveillance, vehicle detection, travel information dissemination, data sharing, communications, and future expansion.

User requirements, or needs, will then be used to identify high-level functional requirements, including functional requirements for each subsystem. The high-level functional requirements will include statements of required capabilities (e.g., functionality, user facilities), performance (e.g., timeliness, mean-time-between-failures), operating environment (e.g., temperature range, lighting level), and policy adherence (e.g., standards, regional ITS architecture). A requirements traceability matrix will be provided, showing the linkage between each functional requirement and the user requirement or need from which it is derived.

These high-level requirements will be refined and further broken down as needed to be implementation-specific and testable, in Task 1.7, after alternative approaches, applicable standards, conceptual designs, and operation and maintenance ramifications are considered in more detail. Task 1.7 will include an expanded requirements traceability matrix that links the detailed requirements back to functional requirements.

The user and functional requirements will be documented in a draft form and submitted to the Ports for their comments, and revised based on those comments. Any changes to the requirements from this point onwards will be tracked and documented.

The Siemens ITS team will prepare the first draft of the System Verification Plan. This initial version will identify high-level tests of the completed system needed to verify functional requirements. The plan will be refined as more details of the chosen technologies, hardware, and software become available during the project, so that test details are appropriate for the actual system implemented. The final System Verification Plan will include all criteria needed for acceptance of the system as a whole. Separate sub-system and component verification plans will be developed in later tasks.

The Siemens ITS team will expand the System Validation Plan to address the detailed user requirements.

Task 1.3: Develop System Architecture and Standards Report

Objective: Identify a proposed system architecture for the ATMIS System and prepare a Standards report detailing how the Project will be compliant with the National Architecture and ITS standards.

Deliverables:

- Draft System Architecture
- Final System Architecture
- Draft Standards Report
- Final Standards Report

In this Task the Siemens ITS Team will develop a Project level architecture based on the requirements identified in the previous task. The Project level architecture will identify the sub-systems and the physical and logical connections between them. The architecture will also identify the type and quantity of information to be exchanged between the various sub-systems and with external systems. The architecture will distinguish between initial and future elements

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and will identify the interfaces to be developed as part of this Project and the interfaces to be developed in the future.

While developing the system architecture, attention will be paid to the regional ITS architecture to ensure that the ATMIS system architecture is compatible with IEN, RIITS, and Corridor-wide CVO. This analysis will consider the physical connectivity needed, the logical relationship between systems, and the type and quantity of information expected to be exchanged. The project concept of operations and high-level requirements will identify the opportunities and needs for information exchange with each of these regional networks. Siemens ITS will provide the Arterial ITS CM Committee with architectural changes so that the Turbo database and GIS mapping of ATIS projects throughout the Los Angeles County can be updated.

As part of this overall system architecture definition, the National ITS Architecture (NITSA) will be referenced and the Project architecture will be summarized in the form of the NITSA "sausage" diagram (high level) and market package diagrams (to show individual sub-system detail).

The Standards Report will identify and discuss each relevant standard, and make a recommendation as to the degree to which each standard should be used in the project. This analysis will consider the maturity of standards and risks associated with using immature standards, the availability of off-the-shelf components incorporating each standard, the projected popularity and support for standards over the likely lifetime of system components, the life cycle cost implications of using and not using standards, adherence to Federal rules, and the degree to which adoption of the standard is expected to lead to multi-vendor sources, interoperability, interchangeability and portability.

Together, the system architecture and standards reports will:

- Provide the framework within which the equipment will operate, and serve as a template for project development and design.
- Build upon any existing equipment or investments already made in the project area and the region.
- Support vendor neutrality, interoperability, interchangeability, and portability.
- Identify and incorporate existing and planned transportation management systems in the region and define their interaction.
- Identify communications and data flows among systems and components.
- Support the development of open systems (i.e. systems with interfaces that use standard or known communication protocols and functionality).
- Allow for integration of new technologies and system expansion in the future.
- Provide a framework for multiple design choices.

Task 1.4: Perform Alternatives Analysis and Recommendations

Objective: To identify suitable hardware and software components that meet the requirements identified for the Ports ATMIS System.

Deliverables:

- Draft Alternatives Analysis Report
- Final Alternatives Analysis Report

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In this task, the Siemens ITS Team will investigate the alternative technologies and products available for each system component. For each promising alternative, the following issues will be considered:

- Is it suitable for the project environment?
- How well does it address the high-level requirements identified in Task 1.2?
- Is it affordable, both initially and for on-going operation and maintenance?
- Is it proven and low-risk?
- Is it available within the required time-frame?

Evaluation of potential field devices and communications technologies will include consideration of their physical placement requirements, whether field conditions are suited to those placement constraints, and the need for installation of support structures where devices cannot be mounted on existing facilities. It will also consider tentative device locations (which may vary from one technology or product to another) and the quantity needed to meet project requirements, and therefore total costs.

For vehicle detectors, both in-pavement and off-road devices will be considered. An important consideration will be the ability of the detector to distinguish between vehicles with multiple trailers at low speeds and to operate effectively in fog. Information on deployment experience will be collected by contacting the agencies using the systems under evaluation for similar purposes.

The CCTV technology assessment will consider both field-to-central and center-to-center applications. With the availability of digital video, there are a number of options available for CCTV distribution that can have major impact on communications requirements. Both analog and digital video options will be investigated and their advantages and disadvantages clearly stated. The option for a fixed CCTV camera to provide both vehicle detection and visual surveillance will be considered.

For travel information dissemination, the Team will evaluate different media for disseminating information directly to truck drivers. The media evaluated will include Changeable Message Signs (CMS), Highway Advisory Radio (HAR), Highway Advisory Telephone (HAT), text messaging, and web pages. These media will be evaluated in terms of their ability to meet the needs of truck drivers and terminal operators. The CMS technology analysis will consider factors such as power requirements, preferred mounting structure configuration (cantilever, pole, or mounted on existing structures), aesthetics (small vs. large signs), message size (2 line, 3 line, or 4 line message capabilities), and cost.

As part of the evaluation of location of field devices, the Siemens ITS Team will make a site visit and walk the locations under consideration for various device placements.

The communications technology assessment task will consist of recommending the most appropriate communications technology and architecture based on the bandwidth requirements at various locations. All available technologies listed (the list may be updated if new technologies are added to the spectrum) in the RFP will be evaluated and the recommendation may result in a hybrid solution. The evaluation will consider flexibility for accommodating future expansion of the system and evolving technologies.

To assist in their evaluation of alternatives and review of work performed by the Siemens ITS Team, Ports staff will be provided with background briefing materials on the promising technologies, products, and options. These will be existing materials from available sources, and will not be developed specifically for this project. In the Alternatives Analysis Report, the

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Siemens ITS Team will provide an overview discussion of the alternatives and the rationale for selection of the recommended option.

Task 1.5: Develop Conceptual Design/Field Surveys

Objective: Bring together the results of prior tasks to form a cohesive conceptual level design for the project, and conduct field survey of the recommended equipment location.

Deliverables:

- Draft Conceptual Design
- Final Conceptual Design
- Field Survey Document

This task will bring together the analysis and decision making carried out in previous tasks to develop a comprehensive conceptual design. This will identify, and describe all the project's physical components and relate them together logically, physically and geographically.

The conceptual design will be divided into four major categories, or sub-projects. The following list describes the components of the conceptual design for each of the sub-projects:

- Field Hardware (vehicle detection (queue length monitoring and flow monitoring), travel information dissemination (e.g., CMS), and visual surveillance (CCTV cameras)): identification of location, mounting or placement, and hardware and firmware specifications.
- Central Monitoring and Control Facilities: identification of off-the-shelf software packages to be used, computers and other system-related equipment, any specialty furniture, and preliminary room layouts.
- Communications: identification of equipment and media specifications, "typical" configurations, and locations; for links between field elements and the central ATMIS system and between the ATMIS and external systems.
- System Integration: identification of overall open system architecture, communications protocols and interfaces between system components and between the ATMIS and external systems, data flows, and any needed software modifications.

The Conceptual Design will include preliminary cost estimates. If necessary, the number and location of field devices will be varied to address any mismatch between the estimated cost and the available funds. In this case, preliminary device locations will be revisited to identify the lowest priority sites for potential elimination and opportunities for replacing two devices with one in a compromise location. The priority of device sites will be based on information collected from stakeholders as to which areas are the most in need of monitoring or information dissemination and consideration of overall system functionality. The potential for using lower-cost, though less capable, devices will also be explored as an alternative approach to lowering costs if needed. Ports staff will be kept fully informed and involved in such trade-off decision making.

The field communications design will be developed iteratively to accommodate any changes in the number or location of field devices. The impact of field device location on communications infrastructure cost will be considered in choosing the location of field devices.

The Central Monitoring and Control Facilities element will address the need for separate operations facilities (user interface) at the offices of each of the two Ports. The pros and cons of

having one common server or shared server with redundancy will be explored. This evaluation will consider institutional and technical issues. In either case, staff at both Ports will have access to all system functionality from their respective offices. Under normal day to day circumstances, staff at both Ports will be able to only control devices in their own jurisdiction. However, the system will be designed so that in the event of an emergency, each Port can control all devices, for the safety of the public.

The System Integration portion of the conceptual design will describe the interfaces between system components and any modifications needed to enhance the functionality of off-the-shelf software or to provide interfaces between system components or with external systems.

The System Integration element will include an implementation plan that describes the work needed for each system component and the associated management information. The cost estimate will provide a preliminary program budget for each component. A preliminary contracting plan will be developed, identifying which components will be provided together or in separate construction contracts and the estimated form and time-frame (schedule) for each contract. A preliminary cash-flow analysis will be performed to identify the outlay of funds expected to be needed in each year. The implementation plan will be developed iteratively with the Operations, Management and Maintenance Plan to ensure that OM&M constraints and ramifications are considered.

This implementation plan will be refined periodically throughout the project through implementation/ construction to assist the Ports in managing the program and related funding and staffing.

For each of the sub-projects, the following will be developed:

Scope of Work: The Siemens ITS Team will prepare a Scope of Work for each sub-project that comprises the following items:

- A listing of tasks and subtasks to be performed for each phase and each component of the project.
- A description of the work to be performed for each task. This description will indicate what work is recommended for procurement through a separate contract or purchase (e.g., what software the Team will develop and what software will be purchased) and who is responsible for the performance of that task.
- A list of project deliverables associated with each task.

The Scope of Work will be based on the Port's Work Breakdown Structure (WBS).

Project Budget: The Siemens ITS Team will prepare a sub-project budget indicating the anticipated use of funds. The project budget will include an estimated cash flow chart by quarter and a breakdown of expenditures by task and subtask, and will be based on the Port's WBS.

Project Schedule: The Siemens ITS Team will prepare a sub-project schedule detailing the anticipated start and end dates of each task and subtask. The schedule will include project milestones, schedule of deliverables, project duration, and the critical path. The schedule will also include appropriate agency review periods for each document and work product so as to provide a realistic estimation of the project duration. It will be based on the Port's WBS.

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The conceptual design documents will have enough details to proceed with the detailed design tasks in Phase 2. The document will identify both technical and engineering issues which should be resolved before heading into detailed design.

Field Survey: In this task, the Siemens ITS Team will conduct an inventory of recommended field elements. The field elements will include controllers, CMSs, detection system and CCTV. For controllers, data collected will include details of controllers (manufacturer, controller type, firmware), cabinet type, condition of the cabinet, equipment in the cabinet, condition of the conduit etc.
For CMSs and CCTV, locations of the poles will be identified. Where possible, alternate locations with their attributes will be presented. For CCTV cameras, an analysis of existing poles will be carried out to determine the feasibility of using them.

For communications, hub locations, demarcation boxes, antenna locations as needed will be identified.

The collected information will be documented in the tabular and text forms in a report.

Task 1.6: Develop an Operations, Management, and Maintenance Plan

Objective: Develop an Operations, Management, and Maintenance (OM&M) Plan that includes preliminary projections of OM&M costs for elements of the project's proposed Conceptual Design.

Deliverables:

- Draft Operations and Maintenance Plan
- Final Operations and Maintenance Plan

Various "lessons learned" reports assembled by MTA, the County of Los Angeles and others, have verified the importance of OM&M Plans for ITS projects. The OM&M Plan will provide the Ports a clear picture of ongoing investment expectations to effectively deliver and preserve the benefits of the project. The project OM&M Plan will assess key issues, define OM&M cost streams, and identify funding and cost-savings opportunities for near-term (first-year) and long-term (five-year) periods. This will be achieved through a fundamental *Process / Format / Content* (PFC) approach. The PFC approach begins with the basic premise that gaining stakeholder endorsement of an overall strategy for development of an OM&M Plan is important to securing a later understanding and commitment to the Plan. The OM&M Plan can thus serve multiple functions, including budgeting functions, public-policy functions, and grant-application functions.

The Siemens ITS Team proposes that a project OM&M Plan be developed through a designated *OM&M Plan Review Group* to be jointly identified by the Ports project manager and the Siemens ITS Team project manager. The *OM&M Plan Review Group* will meet at the beginning, middle, and end of this task and will guide the consultant's development of the OM&M Plan.

The OM&M plan will consider all Project components with respect to the required personnel skill levels and staffing costs, and the recurring and life cycle costs for equipment and services. The Plan will address:

- Staffing Plan for operation and maintenance of ATMIS system.
- Vehicle detection and Queue detection maintenance.
- Maintenance of other ITS field devices (CMS and CCTV).
- Maintenance of Communications infrastructure.

- Periodic assessment of operating system and software for potential upgrades.
- The process for making future software enhancements.
- Periodic computer hardware enhancements and/or replacements.
- Computer database management and maintenance.
- Field traffic operations / traffic enforcement requirements / guidelines.
- Periodic assessment of system operations for identifying refinements.
- Periodic assessment of user requirements (needs) to verify applicability.
- Periodic assessment of functional requirements to verify applicability.

OM&M requirements will be determined both in terms of staff requirements (number as well as required technical capability) and equipment requirements. These requirements will be compared against existing resources at the Ports. For additional resources, alternatives considered will include using Ports-owned resources or contracting out OM&M activities. The optimal solution may be a combination of the two. Under certain circumstances, it is more economical to contract out activities that require specialized equipment or skills, as this requires resources to both buy the equipment and train the staff. Siemens ITS staff will have prior discussions with the Ports staff before considering any contracting options to make sure that there are no conflicts with any Union contracts.

Task 1.7: Develop Detailed System Requirements

Objective: Develop functional requirements that are adequate for detailed system design and testing.

Deliverables:

- Draft Detailed System Requirements
- Final Detailed System Requirements
- Draft Sub-system Verification Plan

In this task, the Siemens ITS Team will refine the high-level requirements developed in Task 1.2 and derive detailed requirements suitable for use in detailed design, system configuration, and acceptance testing. Operational scenarios and use cases will be described and, together with the high-level requirements will be used to identify specific requirements relevant to the technologies, products, device locations, and architecture identified in the conceptual design. Examples of detailed functional and performance requirements include:

- The minimum polling rate for field device communications
- The minimum frame rate for video feeds
- The minimum number of alternating message pages provided in the CMS
- The geographic area to be included in the central software's main user-interface map
- The maximum number of devices on each field communications channel

Whereas the high-level requirements developed in Task 1.2 were adequate for developing the conceptual design, additional detail is needed to guide the detailed design which will include system configuration and any customization needed.

The requirements traceability matrix first developed in Task 1.2 will be expanded to include these detailed requirements and how they relate to the high-level requirements. Some high-level requirements may flow down directly without refinement or expansion, while others may map to multiple detailed requirements.

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The Siemens ITS team will develop the first draft of the Sub-system Verification Plan. This document will address testing requirements and procedures for each sub-system. It will be updated during detailed design.

Phase 2: Detailed Design

In Phase 2, the Siemens ITS Team will prepare detailed design documents for field elements and will design software interfaces as identified in the Conceptual Design Plan. These design documents will form the basis for construction contracts for field and communications infrastructure to be issued by Ports and for the development of software interfaces to be developed by the Siemens ITS Team.

Optional Task 2.1: Conceptual Design and System Requirements Update

Objective: Update the conceptual design and system requirements to take into account any changes in opportunities or constraints since their original development.

Deliverables:

- Draft updated conceptual design
- Final updated conceptual design
- Draft updated system requirements
- Final updated system requirements

This task will not be needed if Phase 2 work commences immediately after completion of Phase 1. However, if there is any significant delay in commencing Phase 2 work, such as may be required due to funding constraints, technological advances and changes at the Ports may warrant a revision of some elements of the conceptual design and system requirements.

For each system component and device, the conceptual design and system requirements recommended in Phase 1 will be reviewed and refined taking into considerations any new developments since completion of Phase 1. The device locations will also be reviewed with the Ports staff and refined based on any new developments in the Ports area since the completion of Phase 1.

Task 2.2: Field Elements Design

Objective: Design each of the field components consistent with the Conceptual Design and System Requirements

Deliverables

- Draft Basis of Design Document
- Final Basis of Design Document
- 15% Plans, Specifications and Estimates
- 50% Plans, Specifications and Estimates
- 100% Plans, Specifications and Estimates
- Final Plans, Specifications and Estimates
- Draft Component Verification Plan

The field element design will be based on the conceptual design and detailed system requirements developed in Phase 1.

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Field Review

The Siemens ITS team places a strong emphasis on field review. Accurate and complete information is essential for preparing concise and logical plans. The majority of the field activities will need to be performed for the 50% submittal. Early identification of right-of-way, utilities (and potential conflicts), and details relating to other construction projects will be the primary input into the initial submittal. Functional requirements of the field-related equipment will also be essential early in the project to identify right-of-way and easement needs at the initial submittal. The Siemens ITS Team will conduct a field inventory of relevant infrastructure related to this project including relevant field measurements and photos. Road segments that may involve installation of underground conduit for field devices will be field reviewed to identify constructability issues and potential conflicts that may have an impact on conduit routing. Existing communication locations, conduit and pull boxes will be field reviewed as needed. Physical features identified in the field will be measured, logged, and photographed for discussion with the POLB Project Manager. The Siemens ITS Team will coordinate with participating agency staff to arrange for technicians to open existing traffic signal cabinets as required.

It should be noted that work related to HAZMAT analysis, geotechnical analysis and surveying will be Ports' responsibility and will be performed by Ports' staff.

Utility Notification and Coordination

The Siemens ITS team will provide draft plans and utility notification letters to utility companies and public agencies identified as potentially having facilities in the immediate vicinity of work to be performed. The companies will be requested to identify, review, and comment on the plans. The Siemens ITS Team will notify the participating agency of any utility conflicts. Known utilities in the vicinity of underground construction (i.e. conduit, cabinet and pole foundations) will be shown on the design plans. The Siemens ITS team will also utilize the USA Underground Dig Alert agency/website to facilitate the search for utilities. Coordination required for the provision of telephone and power services required for the project will be performed by the Siemens ITS team. The Construction contractor will be responsible for resolving utility conflicts discovered during the construction phase of the Project.

Basis of Design Documnet

The Siemens ITS Team will prepare a Basis of design document which will detail the recommended design approaches which will include details such as the types of communications to be used by location, protocols, conduits and innerducts, fiber type, and preliminary size, video formats, etc. This document will also outline the design standards to be used in the preparation of plans, and specifications.

Additional requirements: The following additional information will be included in this document:

- List of other projects at the Port or elsewhere that may affect this project and a description of the potential interface(s) between such other projects and this project.
- A construction packaging plan establishing composition of project elements into construction bid packages and defining the relationships between packages
- A construction phasing plan.

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Preliminary Design (15%)

Sample sheets will be provided identifying the features and layout that the submittal will follow. The preliminary design documents will identify the specific location of each field device and the utilities in the vicinity of any proposed underground work. The concept of limiting the identification of utilities on plan sheets to the area in which underground work would be performed could potentially provide a design cost savings. The merits of this approach will be discussed with the Ports. Conduit and pullboxes will be located, along with the proposed CMS, CCTV, vehicle monitoring and the gate queue detector stations, as applicable. The Siemens ITS team will identify power and communication opportunities as well as constraints for each location, and will make allowances for future expansion of field devices. Right-of-way or easements, if needed, will be identified at this stage of the development. A preliminary, itemized cost estimate will accompany the submittal.

Plans, Specifications, and Estimates

A clear definition of the operational requirements of the Project will be developed in the preliminary design phase to facilitate the refinement and translation of functional design into the basic stages of the PS&E. The Siemens ITS Team will develop a detailed work plan, including using a checklist of guidelines to be followed by our design teams, which will outline the specific tasks and requirements for developing each submittal. We propose to include a period to review design decisions made by the design team on the monthly progress meeting agendas. This will facilitate input into the design and will shorten the formal review process. Throughout the project, we will systematically document the decisions made along with the action items, individuals responsible for each action item, and dates for completion to facilitate meeting the schedule established for this project. The plans will be developed using the design guidelines provided by Ports and following any local standards where needed. The bid documents will be prepared in accordance with the funding requirements.

Organization of the Plan Set

The plan set may be organized in one of two logical manners, each with advantages and disadvantages:

Separate different field element types into different plan packages.

The advantage of this method is that the project can more easily be split into separate, smaller construction projects, which may increase competition and reduce construction cost. This will also allow staged construction, if needed. An obvious disadvantage of this method is the effort required to maintain consistency between different contracts. Also, more sheets will be required.

Provide one plan package for the entire project.

An advantage of this method is that the project is put out to bid as a whole, and requires less coordination on Agency's part to keep consistency across different elements. The disadvantage of this method is the difficulty in splitting the construction if needed.

A hybrid approach is also possible; that is, combining elements when they are geographically adjacent and separating them when they are not. Conceptually, this is similar to ordering the sheets in a combined plan package by function to the extent possible. The Siemens ITS Team has extensive experience in preparing plans using both approaches, understands the issues, and will develop an approach in conjunction with the Ports Staff as appropriate.

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Submittals

The Siemens ITS will prepare each design submittal in accordance with the specified requirements. Our approach to the design and each of the PS&E stages are presented below.

50% Submittal Upon receipt of comments on the 15% design submittal, the Siemens team will prepare the 50% design submittal in accordance with the Port's requirements. The electrical power distribution, communications cabling, cabinet contents, structural drawings, and any special details required to construct the system will be developed. The 50% design documents will also identify the known utilities in the vicinity of any proposed underground work. The concept of limiting the identification of utilities on plan sheets to the area in which underground work would be performed could potentially provide a design cost savings. The merits of this approach will be discussed with the Ports. All right-of-way and easements will also be shown. A draft copy of the Special Provisions and revised preliminary construction cost estimate will be developed as part of the 50% design. We suggest an early constructibility review be conducted at the 50% design level to ensure that potential problems are avoided.

100% Submittal- Following review of the 50% design documents and incorporation of the accompanying comments, the 100% plan set will be prepared. This step in the design process involves completion of the design with all of the general sheets, title sheets, summary of quantities, block diagrams, and other details required for the system. Special details for attaching conduit to structures, location plan sheets, signing and marking plans, and any required traffic control plans will be prepared. This submittal will include a contingency plan that will outline the requirements for minimizing the disruptions to the goods movement trucks, motoring public and businesses. Final revisions to the cost estimate and Special Provisions will also be made, and a detailed bidding schedule listing all bid items with their descriptions, quantities, and units of measurement will be incorporated. At the conclusion of 100% design, the PS&E documents will be essentially complete. Following submittal of the 100% PS&E package, a utility and agency coordination meeting will be scheduled to obtain any final comments.

Final Submittal -The final design stage will incorporate any final review comments from the 100% design submittal, the preparation of the final bidding schedule, and detailed cost estimates in the approved format. We will coordinate with the Ports to provide a sealed and signed PS&E ready for advertisement. The final PS&E package will include an estimate of the construction time frame including construction, testing, and operational milestones.

Estimate of Probable Construction Cost

Project scope and construction cost expansion are major issues that face project managers once a project is programmed. At each design submittal, a progressively more detailed cost estimate will be prepared to validate that the estimated cost for implementing the project is consistent with the budget for the program. The Siemens ITS Team will prepare estimates of probable costs commensurate with the design effort to ensure that all estimates incorporate appropriate costs and items of work. Any escalation in the construction costs will be identified early and options offered to keep the costs within the budgeted amount.

Component Evaluation

The infrastructure/field element/TMC equipment design will rely on technologies that have already been deployed by others, very likely locally in Southern California. Therefore, to verify the proposed design will work, the Siemens ITS Team will arrange for up to three site visits to up to three public agencies that use the key technologies recommended by our team. In

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addition to verifying the design, this will better acquaint the Port staff and/or other end users with the technologies.

The Siemens ITS team will develop the Component Verification Plan. This document will address testing requirements and procedures for each component of the system not being supplied and installed by the field construction contractor. Examples of such components may include computers, communications end equipment, and any other equipment purchased separately from the field construction contract. Testing and verification of components supplied and installed by the field construction contract will be covered in the field construction contract specifications.

Task 2.3: System Software Design

Objective: Develop a detailed design for integrating software components as identified in the conceptual design

Deliverables:

- Draft System Software Design Specification (including list of hardware and COTS software)
- Final System Software Design Specification (including list of hardware and COTS software)
- Draft Interface Control Document
- Final Interface Control Document
- Draft System Integration Plan
- Final System Integration Plan
- Final System Validation Plan
- Final System Verification Plan
- Final Sub-system Verification Plan
- Final Component Verification Plan
- Draft Acceptance Testing Plan and Procedures
- Final Acceptance Testing Plan and Procedures

In this task, the Siemens ITS Team will develop a detailed design for the ATMIS software components identified in Phase 1. This will include the specification and detailed description of how the software components within ATMIS will work. This includes description of the current software design for existing off-the-shelf systems and a description of how that software will be augmented and/or modified to include any necessary extensions and interfaces required for this project. Descriptions of augmented, modified, and/or extended components will include:

- Mock-ups of new or modified user interfaces
- Technical specifications of any new functionality data elements and/or communications protocols
- Identification of which components in the software architecture are impacted by the changes
- Identification of how much each software component requires modification in the system, at an approximate level of detail (i.e. high, medium, low)

The design will also include specification of system configuration where configuration options exist. This includes mock-ups of site-specific graphics (e.g., maps) for user interfaces for Ports' approval and detailed description of how interfaces will operate between ATMIS components,

and how the ATMIS components will interface to external systems such as the IEN. The details of interfaces to external systems will be documented in a separate document.

As part of this task, the Siemens ITS Team will also prepare a System Integration Plan which will document the integration strategy for the ATMIS system. This will detail how different modules of the system will be integrated and in what order.

In this task, the Siemens ITS Team will also finalize the four systems engineering documents developed in draft forms in the previous tasks. The documents will be updated to reflect the final system software design.

As part of this task, Siemens ITS will also develop an acceptance testing plan and acceptance testing procedures. The acceptance test plan identifies how the Ports can be satisfied that the delivered software system meets the detailed system requirements developed in Task 1.7. In the first phase of the project, this test plan will provide a high-level view of acceptance test procedures to be used at each incremental delivery of software. As the project progresses, the detailed procedures for each test will be developed and provided for the Ports' review and approval before the tests are executed in Phase 3.

The software design report will also contain a detailed plan for incremental software development and integration, and phased delivery and acceptance testing. Phased delivery of software minimizes the Ports' risk and allows the Ports' insight into the progress of the overall system.

The Siemens ITS Team will work with the Ports' Independent Validation and Verification (IV&V) consultant during this phase and conduct design reviews as needed.

Phase 3: System Implementation

This phase of the project involves field construction, central hardware and software procurement, systems integration and configuration, acceptance testing, training, and system documentation.

Task 3.1: Construction Support Services

Objective: To provide post-design construction support on an as-needed basis.

Deliverables:

- Assistance during bidding and construction
- Attendance at meetings with construction contractor as required
- One set of Record Drawing Mylars

The Siemens ITS Team will provide bidding and construction support and Inspection services in accordance with the Port of Long Beach Consulting Services Guidelines, August 2003 edition, as follows:

- The Siemens ITS Team will attend a partnering session with the Ports staff.
- During the Bid Phase support the Ports as follows:
  - Respond through the Port Project Manager to all questions by potential bidders in a timely manner.
  - Prepare Bid Addenda or Clarification documents and a revised Cost Estimate and/or Bid Estimate, as necessary, at the direction of the Port Project Manager, and per Port formatting and standards.

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- Attend the pre-bid conference and/or site inspection.
- Assist in evaluating construction bids as requested by Port staff.
- Provide Port staff with a comparative analysis of the bid tabulation versus the Consultant's Cost Estimate.

- The Siemens team will attend pre-construction meeting and be prepared to answer Contractor questions concerning design.
- The Siemens team will respond to reasonable Requests for Information RFI's regarding the traffic components of the construction. Review will be for conformance and consistency with the intent of the contract documents, and compatibility with the design concept of the completed project as specified in the contract documents. Such review and approvals or other actions will not extend to means, methods, techniques, equipment choice and usage, sequences, schedules, or procedures of construction or to related safety precautions and programs.
- The Siemens team will review contractor submittals and all shop drawings . Review will be for conformance and consistency with the intent of the contract documents, and compatibility with the design concept of the completed project as specified in the contract documents. Such review and approvals or other actions will not extend to means, methods, techniques, equipment choice and usage, sequences, schedules, or procedures of construction or to related safety precautions and programs.
- Change Orders—The Siemens team will be available during construction as needed to review field change orders or design those change orders requiring specialized expertise not available in the field. Change order recommendations will be made to the Port of Long Beach, not to the Contractor.
- Nonconformance Reports—The review and approval of field-generated "Nonconformance reports" (NCR's) is included. The contractor is responsible for the recommended solution for any NCR, but we will review the proposed solution and provide a recommendation to the Port. All direct and indirect costs for this process will be tracked separately so that the Port can recover costs from the construction contractor.
- Timely coordination with regulatory agencies such as the City of Long Beach, the City of Los Angeles, Caltrans, and other agencies as necessary to respond to permit conditions and requirements;
- Timely review of the Construction Documents to assist in resolution of conflicts raised by the construction contractor. We will be responsible for all redesign work necessary for correcting design errors in the Work of the Consultant at no additional cost to the Port.
- Where redesign changes the data in the ASCII, DWG, or DGN files provided in Section 10.F.5, new such files are to be provided at the time of redesign.
- Timely technical support as requested by the Port in support of the negotiation or evaluation of: contractor's proposals regarding change orders; change order documentation or backup; determination of changed site conditions; providing an acceptable changed design for the changed site condition; and claims.
- Attend construction coordination meetings if so requested by the Port;
- Observation of the testing and start-up of any Project Systems and verification of the performance of same.
- Provide archive quality "As Built" Drawings of the constructed Project in accordance with Port CADD Manual, including a digital copy of all Drawings.

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Task 3.2: Software Development / Integration

Objective: Develop the system software, integrate the COTS modules and carry out in-house testing

Deliverables:

- *Results of internal software/systems testing*

This task will consist of developing software to integrate with the COTS modules as detailed in the System Design Report and approved by the Ports. The Siemens ITS Team develops software using industry-standard *Unified Software Development Process*. The key elements of this process are twofold – first, software is developed to comply with user and functional requirements. No software is written that does not address a user need. Second, the process of development is *iterative* and *incremental*. From the list of user and functional requirements, and in coordination with the schedule for field device construction and deployment (through the previously-described "sub-projects" concept), a logical schedule for software development and integration is developed in Task 2.2. In this Task 3.2, software is written and integrated according to the schedule. This allows the team to demonstrate ATMIS functionality and execute acceptance tests incrementally and minimizes the Ports' risk over the project duration. For this project, Siemens ITS proposes a three-stage development and delivery of ATMIS functions.

All Siemens ITS software development uses CMM Level 2 recommended practices including requirements management, source code control, defect and feature tracking systems, and traceability matrices for tracking of requirements, to features, to acceptance test cases. Development practice audits are available from other Siemens ITS customers for the Ports' review if necessary.

Task 3.3: System Deployment / Integration / Acceptance Testing

Objective: Ensure the deployment of the ATMIS and communication equipment; integrate the systems with their field equipment and the regional systems and carry out component and end-to-end system testing.

Deliverables:

- Fully operational ATMIS System with connections to both Ports, regional agencies, Terminal Operators and Truckers.

In this task, the Siemens ITS Team will install the ATMIS system and associated hardware and software at the Ports facility. The system will be connected to the field components and external systems one by one and tested according to the acceptance test procedures developed in previous tasks. Integration will be carried out on per sub-system basis which will allow easy isolation of problems and solution implementation. Once all field elements and external systems are connected and tested individually, Siemens ITS will carry out an end-to-end system test to test the ATMIS system as a whole. Any problems found during the acceptance testing will be found and fixed and the test will be re-run. All testing will be done in the presence of and conjunction with Ports' staff and the Ports' IV&V consultant.

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Task 3.4: As-Built Plans

Objective: To document the project as constructed.

Deliverables:

- As-Built Plans in both reproducible and electronic copy

The Siemens ITS Team will work closely with the contractor(s) to document accurate as-built plans and records. Variances in the field as-builts will be reviewed with the contractor and documented through field inspection. Final reproducibles and electronic copies of plans will be provided.

Task 3.5: Overall Field and System Integration

Objective: To provide overall field and system integration services.

Deliverables:

- Purchasing equipment not supplied by other contractors
- Connecting field equipment to communication network in field cabinet
- Integration of field units into overall system
- Perform testing of the central system software with the new field units

In this task, the Siemens ITS Team will provide services to purchase and install end communications equipment in the field as well as central and carry out integration of field units into the overall system and perform testing of the central system software using the new field units. It is assumed that the construction contractor will be required to install dark fiber and devices such as CCTV, CMS and detection devices in the field. The construction contractor will provide for testing of that equipment and communications locally in the field. It will be the responsibility of the Siemens ITS Team to purchase (or assist the Ports in purchasing) other components, make final connections, and test the overall system for its functionality.

Task 3.6: System Documentation

Objective: To provide the Ports with sufficient documentation for operations and maintenance of the installed systems.

Deliverables:

- Systems Operations Manual
- Systems Maintenance Manual
- Software Documentation
- Final Report

Siemens ITS will provide system documentation to ensure that the agencies can adequately operate, manage, and maintain the installed systems. The requirements of the RFP will be strictly adhered to. The Team will compile equipment and software documentation into "Operations Manuals" and "Maintenance Manuals". Additional sections will be authored by the Team to ensure a complete OM&M manuals for the ATMIS. Software provided under the project will be thoroughly documented to provide a clear understanding of the overall system structure. As far as is possible, electronic versions of the documentation will be provided on CD-ROM in addition to appropriately packaged hard copies.

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As part of this task, the Siemens ITS Team shall also prepare a Final Report to close-out the Project. This report shall include the following:

- Current Parts List and Configuration Details
- Completed Configuration Management Plan
- Final walk through punch list
- Listing of date and amount of final payments to vendors, if any
- Receipt of all warranties
- Date of submittal of final "As-Built" Plans

Task 3.7: Training

Objective: To provide operational and maintenance training to agency and stakeholder personnel.

Deliverables:

- Training Procedures Manual
- Training Materials
- Required Classroom Training Sessions

The Siemens ITS Team will develop an appropriate and effective training program designed to meet specified training goals including familiarization with systems operations, development of desirable levels of operator confidence, and ordinary system maintenance. Training materials will outline the operational and maintenance requirements of the ATMIS and will be supported by the system documentation developed in the previous task. Strategies to meet training objectives will be developed in consultation with the Ports.

Training sessions will include (in addition to related unique needs):

- System Operations - Hands on system training
- System Administration - Explanation of system commands, their function and usage
- System Maintenance including required preventive maintenance procedures; servicing procedures; system troubleshooting; and problem identification procedures

The training plan and materials will be prepared in draft form and revised based on review from Ports Staff. Additional training may be provided based on requirements identified by the Ports.

Task 3.8: 60 – Day Operational Testing

Objective: Conduct 60 day operational test of the system per the requirements detailed in the RFP.

Deliverables:

- Resolution of the issues resulting from the operational testing
- Updated System documentation

After the system has undergone end-to-end acceptance testing and the Ports' staff have been trained, the system will enter into a 60 day operational testing period per the requirements detailed in the RFP. The Siemens ITS Team will be available to answer any questions and provide any fixes if required. The System documents will be updated and re-submitted as required to address staff questions and comments.

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Persistent Intermittent Failures

No intermittent hardware, software, communication, or control operation or other malfunctions not related to a specific hardware or software malfunction shall be permitted to persist during the test period. If such problems are encountered, the test shall be suspended until the problems are corrected.

System Shutdown for Testing/Correction

During any period that the system operation is restricted or limited in any way as a result of testing, the 60-day System Acceptance Test shall be halted and shall not continue until a period of 72 to 168 hours of successful performance, as determined by the PORTS, has proved that any corrections or modifications made are valid, the problem is corrected, and no new system problem or deficiency has been created as a result of the change. Diagnostic testing that does not result in changes to system hardware or software shall result only in the loss of acceptable test time.

Maximum Downtime

Total system downtime in excess of 72 hours during the 60-day test period shall cause the System Acceptance Test to be restarted. System downtime is defined as a condition that, due to central control hardware, software, or communications equipment malfunctions, causes the system to operate in a standby mode, causes the central system to cease operation, or causes any subsystem to revert to its locally generated standby timing program.

Actions Resulting from Hardware Failure

Failure in any mission critical piece of hardware item during the acceptance test period, shall necessitate restarting the 60-day test period for its full 60-day duration for that item after its repair or replacement.

Action Resulting from Software Failure

Any failure of system software or discovery of a software deficiency that causes a system malfunction or discovery of software operation that is not in compliance with the specifications shall cause the 60-day test to be halted and repeated in its entirety after correction of the software problem. If no further software problems are discovered, and if no software problems are introduced as a result of correcting the initial deficiency, the PORTS may reduce the restarted 60-day test period for software to not less than 30 days. In no case shall the total test period be reduced to less than 60 days.

Phase 4: Warranty Period

In this Phase, the Siemens ITS Team will provide on-call trouble shooting and maintenance services for all software and hardware provided through this Project to the Ports for a period of one year following written acceptance by the Ports of operational testing of the ATMIS system.

Schedule

The proposed schedule for the Ports ATMIS Project is presented in Figure 1. The schedule is largely determined by the need to provide adequate review time of the project deliverables by the involved agencies. No document has less than 15 working days for review, and some, more comprehensive documents have four full weeks. As a mitigation measure, tasks dependent upon the output of previous tasks, are shown, wherever possible, to start using the material from the draft report.

Siemens Employee Rate Schedule

Last	First	Staff Category	Current Rate	Average Rate to be Used For the Project Year 1	Year 2	Year 3	Year 4
Clelland	Alan	Principal In Charge	$227	$227	$235	$243	$252
				$222	$230	$238	$246
Tighe	Warren	Project Manager	$220				
Randall	Jeffrey	Deputy Project Manager	$177	$164	$169	$175	$182
Gupta	Arti	Deputy Project Manager	$179				
Marshall	Pete	Deputy Project Manager	$167				
Gettman	Doug	Deputy Project Manager	$165				
Massaranc	Glenn	Deputy Project Manager	$163				
Kacir	Kent	Deputy Project Manager	$156				
VanDillen	Diederick	Deputy Project Manager	$151				
Wieck	Michael	Deputy Project Manager	$151				
Townsend	Walt	Senior Engineer	$147	$136	$141	$146	$151
Nichols	Del	Senior Engineer	$148				
Carey	David	Senior Engineer	$134				
Holmes	Jim	Senior Engineer	$127				
Shelby	Steve	Senior Engineer	$126				
Gilbert	Charles	Engineer	$112	$103	$106	$110	$114
Bhadha	Rayomand	Engineer	$109				
Wright	Michael	Engineer	$102				
Zinn	Matt	Engineer	$99				
Clissold	David	Engineer	$102				
Johnson	Shane	Engineer	$98				
Montigny	Pete	Engineer	$96				
Wang	Jun	Junior Engineer	$84	$80	$83	$86	$89
Zhu	Chongkang	Junior Engineer	$82				
Pu	Lili	Junior Engineer	$78				
Guo	Zhiyong	Junior Engineer	$76				
Tarico	Douglas	Senior Programmer	$164	$148	$153	$159	$164
Keaton	Sherilyn	Senior Programmer	$163				
Horton	Bruce	Senior Programmer	$141				
Clance	Michael	Senior Programmer	$140				
Engle	Jonathan	Senior Programmer	$132				
Nelson	Luke	Programmer	$129	$111	$115	$119	$124
Crawford	Doug	Programmer	$130				
Gallagher	J.Michael	Programmer	$120				
Edgar	Scott	Programmer	$95				
Tripathi	Nagendra	Junior Programmer	$85				
Webb	Carol	Administrative/Scheduler	$102	$102	$106	$109	$113
Johnson	Brandon	Administrative/Graphics	$84	$84	$87	$90	$93
Kubendran	Kalaivani	Intern	$61	$61	$63	$65	$67
Patterson	David	Administrative/Grahics	$53	$53	$55	$57	$59
Leela	Vera	Administrative Assistant					

Transmittal No. 1

Long Beach/Los Angeles Advanced Transportation Management, Information and Security Systems
st Estimate - Siemens ITS Team, Date - May 23, 2005

Firm Name	Siemens ITS								KHA				TranSmart		LIN Consulting			MTM		
	$227	$220	$179	$130	$80	$140	$111	$68	$160	$130	$85	$105	$74	$61	$120	$130	$85	$101		
Task Name	PIC Alan Clelland	PM Warren Tighe	DPM Arti Gupta	Sr. Eng.	Jr. Eng	Sr. Prog	Jr. Prog	Admin	DPM	Sr. Eng.	Jr. Eng	CADD	Sr. Eng.	Jr. Eng	Sr. Eng.	Sys. Insp.	CADD	Sr. Eng.	Totals Hours	Total Cost
Preliminary Design	48	456	790	640	722	16	70	40	132	480	668	0	0	0	0	0	0	104	3,838	$564,693
Project Management (Phase 1)	40	136	68		24		40	40	40	0	0	0							388	$67,735
1 Update Operational Concept	0	72	336	0	130	0	0	0	20	80	0	0	0	0	0		0	40	658	$108,709
1.2 User and System Functional Performance Requirements		48	66	120	80				4	40	60	0						16	434	$60,832
1.3 System Architecture and Standards Report		24	24	120	104				4									24	300	$39,696
1.4 Alternative Analysis and Recommendations	0	0	120	0	0	0	0	0	52	280	380	0	0	0	0		0	0	832	$110,294
1.5 Conceptual Design Plan	0	120	120	160	264	0	0	0	8	80	128	0	0	0	0		0	24	904	$121,497
1.6 OM& M Plan		24		80	80				4										188	$23,327
1.7 Develop Detailed System Requirements		32	56	60	40	16	30												234	$34,162
Detailed Design	48	308	288	192	36	220	250	40	560	1,276	1,672	300	80	8	292	0	1,420	48	7,344	$986,396
0 Project Management (Phase 2)	40	80	36		36			40	160		0	0							392	$66,628
2.1 Conceptual Design and System Requirements Update		24	40						24	40									128	$22,810
2.2 Field Elements Design	0	128	8	128	0	0	0	0	408	1,236	1,972	300	0	0	292	0	1,420	0	5,890	$863,057
2.3 System Software Design	0	76	204	64	0	220	250	0	0	0	0	0	80	0	0		0	40	934	$136,903
System Implementation	60	308	564	642	906	1,056	2,000	40	120	220	280	8	564	1,240	40	500	150	8	8,540	$988,376
0 Project Management (Phase 3)	60	96	48		84			40	40	0	0	0							368	$60,224
3.1 Construction Support Services									80	220	280	8				500			1,088	$141,177
3.2 Software Development/Integration		28	104	44		650	1,300						200	600					2,928	$317,921
3.3 System Deployment / Integration / Acceptance Testing		48	144	112	360	280	700						200	400					2,244	$236,051
3.4 As-Built Plans		8	16												40		150		214	$18,424
3.5 Overall Field and System Integration		80	80	350	350														860	$107,609
3.6 System Documentation		24	124		32	128							24	120					452	$58,891
3.7 Training		24	48	96									40	80					288	$34,004
3.8 60-day Operational Testing			40		80								40	40					200	$18,548
se 4 Warranty Period				240															240	$32,715
Total Labor Cost	140	1,072	1,682	1,574	1,684	1,294	2,320	120	642	1,956	2,820	308	584	1,240	332	500	1,570	144	20,162	$2,468,455

Subconsultant Oversight - Siemens ITS (3%)	$32,758
Travel/ODC	$82,770
Software Licenses	$240,000
Computer Hardware/COTS Software/Central Comm. Equipment	$346,000
Cost of Living Adjustmment (3.5%/year)	$104,830
Total Project Cost	$3,182,813

Total Cost by Phase/Team Member																		
Phase 1	$9,070	$100,393	$141,354	$73,609	$57,703	$2,369	$7,800	$2,733	$24,560	$69,000	$55,664	$0	$0	$0	$0	$0	$0	$19,820
Phase 2	$9,070	$87,809	$51,531	$26,172	$2,877	$32,567	$27,857	$2,733	$109,864	$191,400	$193,256	$31,500	$5,898	$0	$35,040	$0	$86,200	$7,823
Phase 3	$13,605	$87,609	$108,073	$82,080	$72,408	$156,617	$222,658	$2,733	$22,345	$33,000	$27,440	$840	$37,180	$63,500	$4,800	$65,000	$9,000	$0
Phase 4	$0	$0	$0	$32,715	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	$31,746	$238,011	$300,958	$214,556	$132,988	$191,553	$258,515	$8,198	$156,769	$293,400	$276,360	$32,340	$43,058	$63,500	$39,840	$65,000	$94,200	$27,444

Total Cost by Phase/Firm	Total Costs						% Allocations					
	Siemens ITS	KHA	Transmar LIN	MTM	Grand Total	Siemens	KHA	Transmar	LIN	MTM
Firm	$395,029	$149,244	$0	$19,820	$564,093	70.03%	26.46%	0.00%	0.00%	3.51%
Phase 1	$220,617	$526,020	$5,898	$120,240	$880,398	25.06%	59.75%	0.67%	13.66%	0.87%
	$726,183	$83,825	$100,860	$78,800	$989,249	73.41%	8.45%	10.19%	7.97%	0.00%
		$0	$0	$0	$32,715	100.00%	0.00%	0.00%	0.00%	0.00%
					$2,468,455	55.73%	30.77%	4.32%	8.07%	1.11%

Travel			
Round Trips From Northern California	96 Units		
Air Fare	96 Trip	$250	$24,000
Car Rental - 2 days	192 Days	$50	$9,600
Meals	192 Days	$50	$9,600
Hotel Stay	96 Nights	$115	$11,040
Round Trips From Arizona	24 Units		
Air Fare	24 Trip	$250	$6,000
Car Rental - 2 days	48 Days	$50	$2,400
Meals	48 Days	$50	$2,400
Hotel Stay	48 Nights	$115	$5,520
Round Trips From East Coast	6 Units		
Air Fare	6 Trip	$600	$3,600
Car Rental - 5 days	30 Days	$100	$3,000
meals 5 Days	30 Days	$50	$1,500
Hotel Stay 5 Days	30 Nights	$115	$3,450
Mileage			
200 miles per month	7200	0.375	$2,700
Total Travel			**$84,810**
ODC			
Fedex	96	10	$960
Color Copies	2000	1	$2,000
Copying Plans/Sheets	400	10	$4,000
Copy/binding	4000	0.25	$1,000
Total ODC			**$7,960**
Total Travel/ODC			**$92,770**

Software Licenses			
ATMIS Server License	2	$50,000	$100,000
ATMIS Workstation Licenses	4	$5,000	$20,000
CCTV Module	2	$25,000	$50,000
CMS Module	2	$35,000	$70,000
Total Software Licenses			**$240,000**

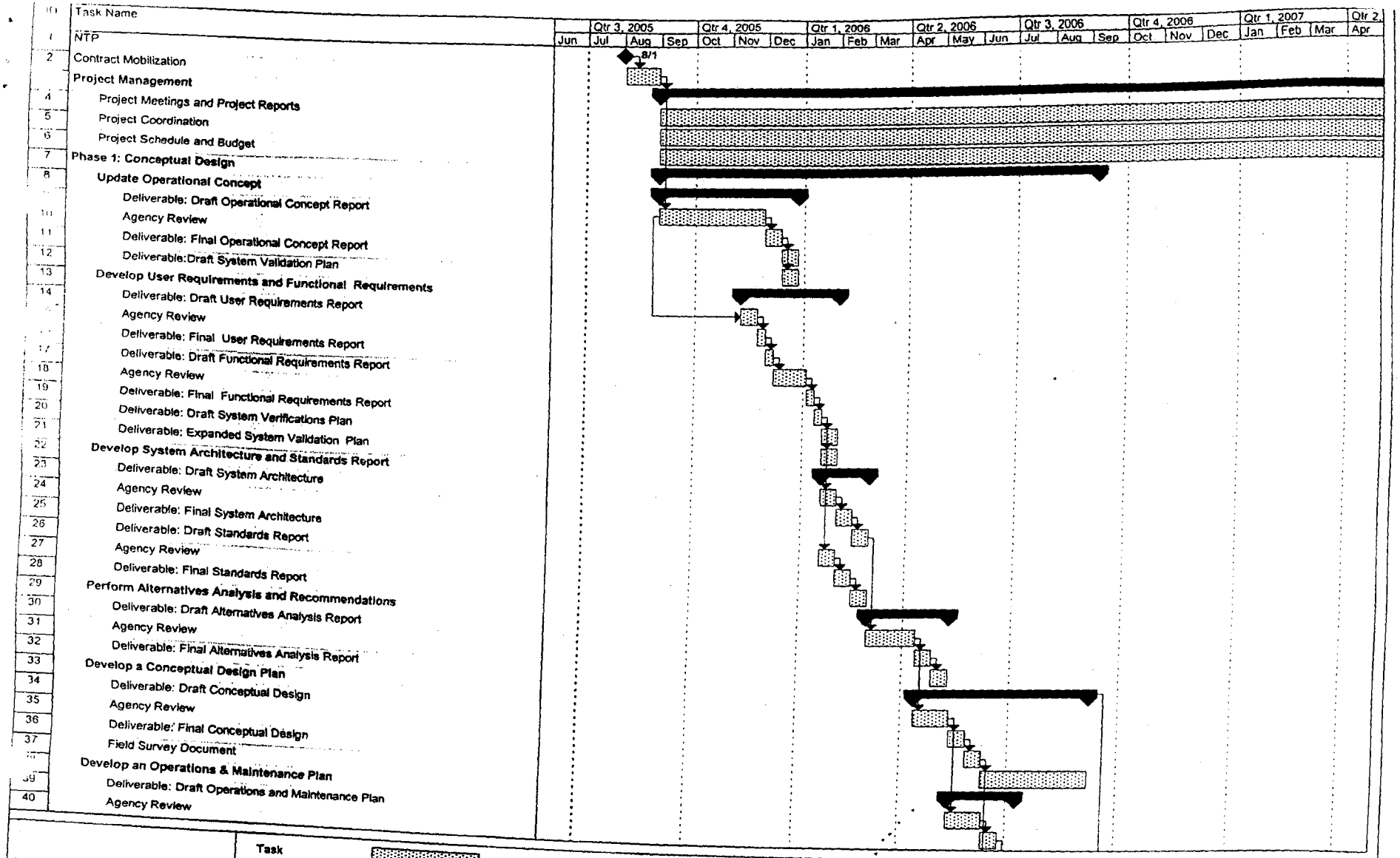
Computer Hardware/COTS Software/Central Comm. Equipment

Servers	4	$12,000	$48,000
Workstations (dual 19" displays)	4	$4,500	$18,000
Central Communications Equipment	2	$30,000	$60,000
Commercial-off-the-Shelf Software	2	$60,000	$120,000
(includes, data bases, Operating System, video distribution software etc.)			
Total Computer Hardware/COTS Software/Central Comm.			**$246,000**

Cost of Living Adjustment

Phase	Amount	% Adjustment	No of years	Adjutment Amount
Phase 1	$564,093	0%	0	$0
Phase 2	$880,398	3.50%	1	$30,814
Phase 3	$989,249	3.50%	2	$70,459
Phase 4	$32,715	3.50%	3	$3,557
Toal Cost of Living Adjustment				**$104,830**

Transmittal No. 1



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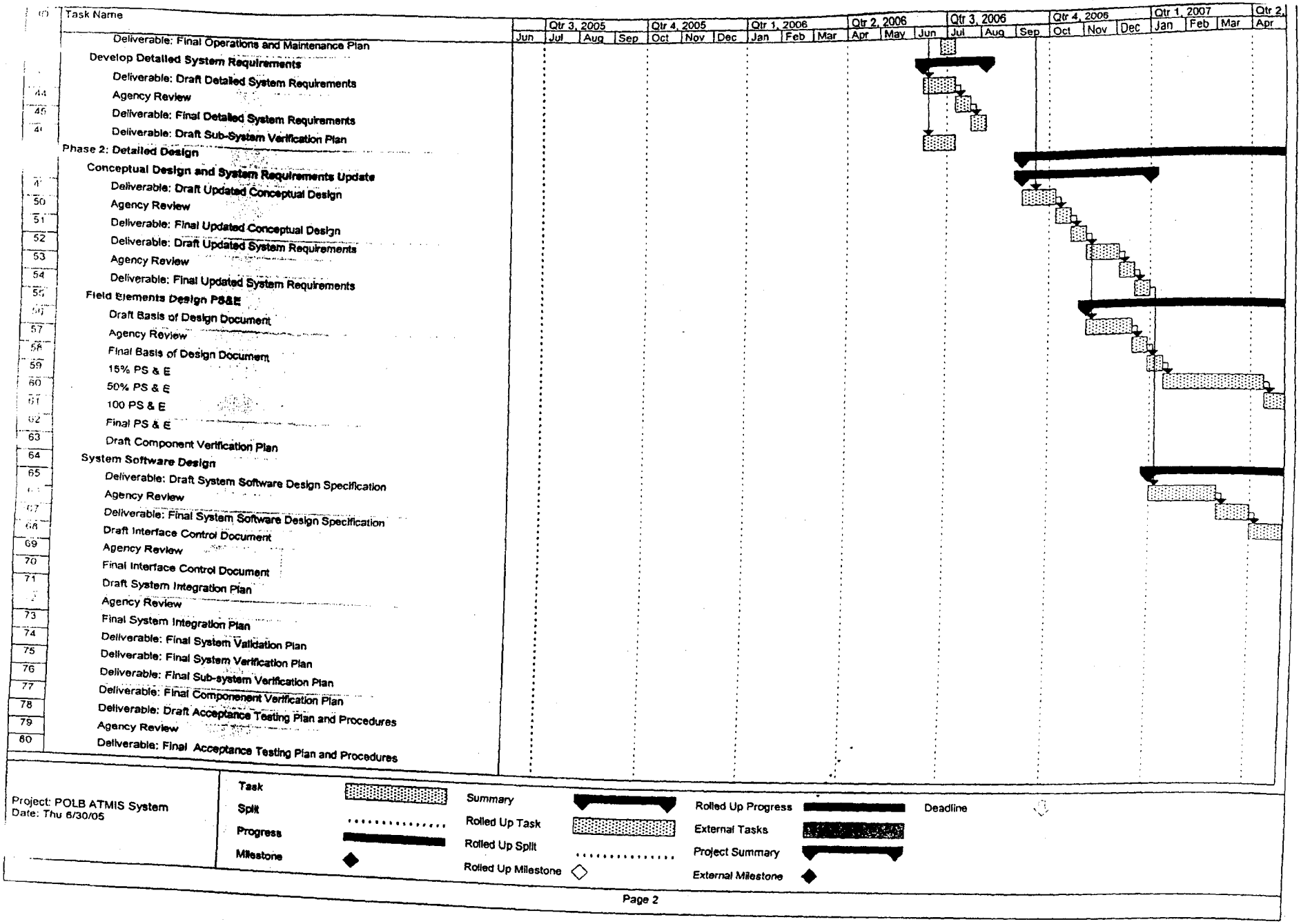

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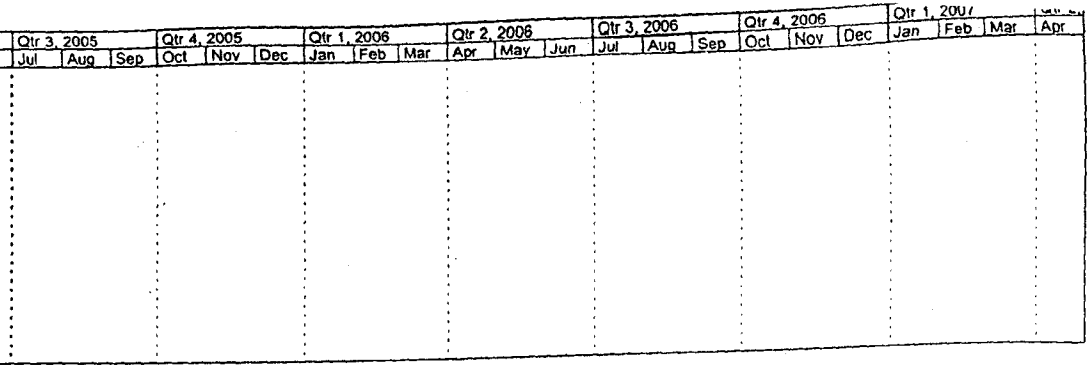
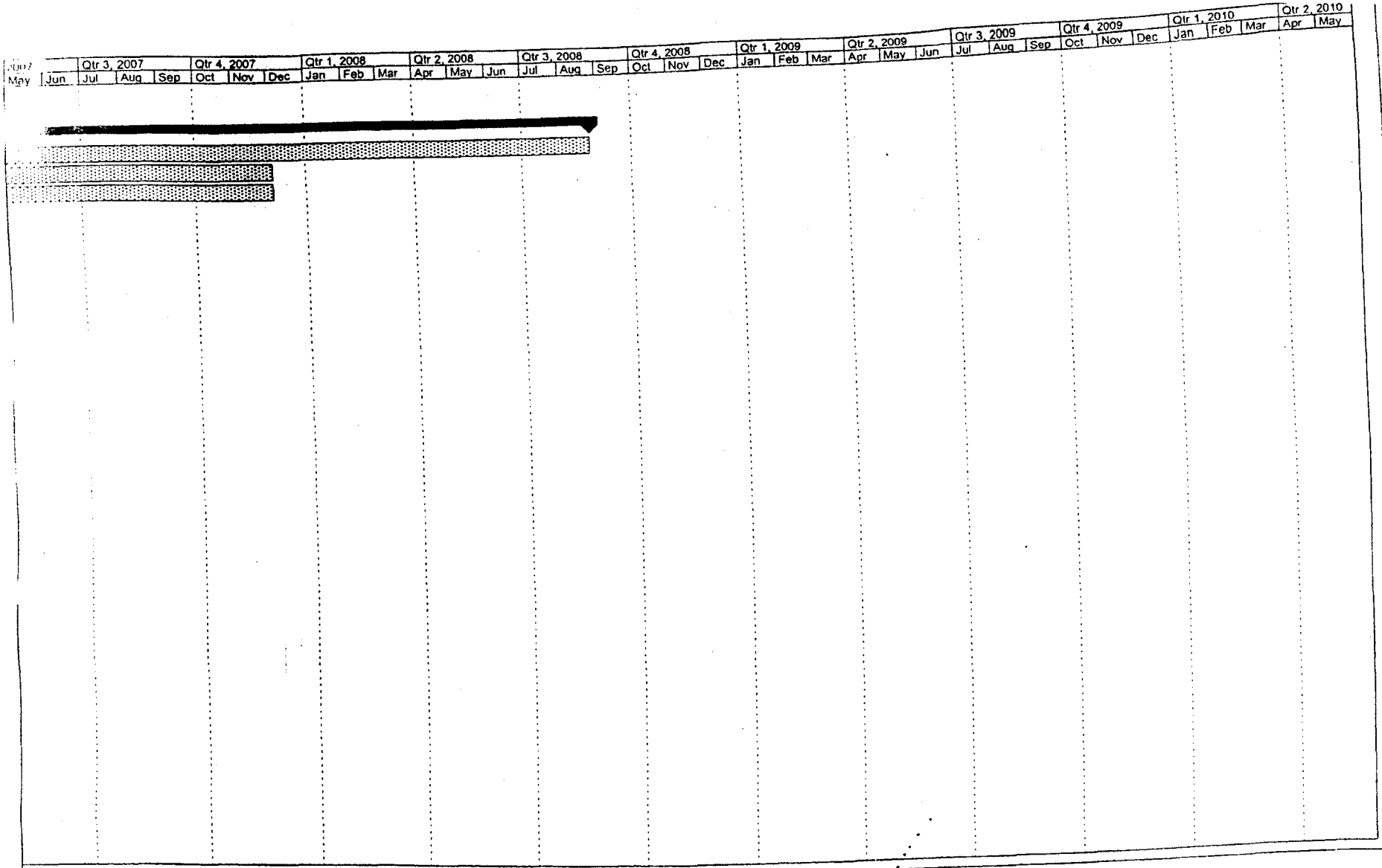
ID	Task Name
81	Construction (To be done by Others)
82	Phase 3: System Implementation
83	Construction Support and Inspection Services
84	Software Development / Integration
	System Deployment / Integration/Acceptance Testing
	As-Built Plans
87	Overall Field and System Integration Services
88	System Documentation
89	Training
90	60 - Day Operational Testing
91	Phase 4: Warranty Period



Project: POLB ATMIS System
Date: Thu 6/30/05

Task
Split
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
External Milestone
Deadline

Transmittal No. 1



Project: POLB ATMIS System
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Task
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Progress
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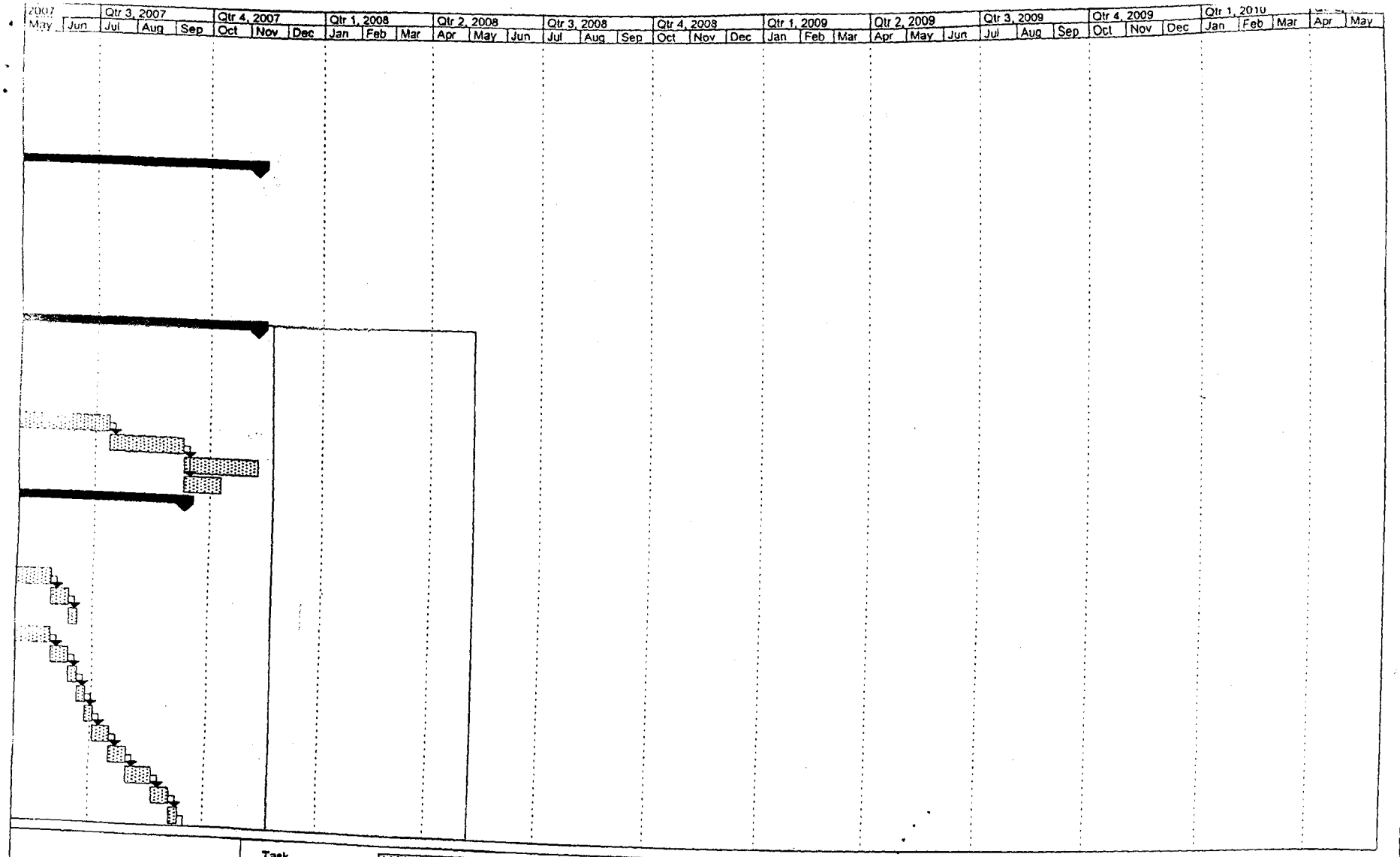

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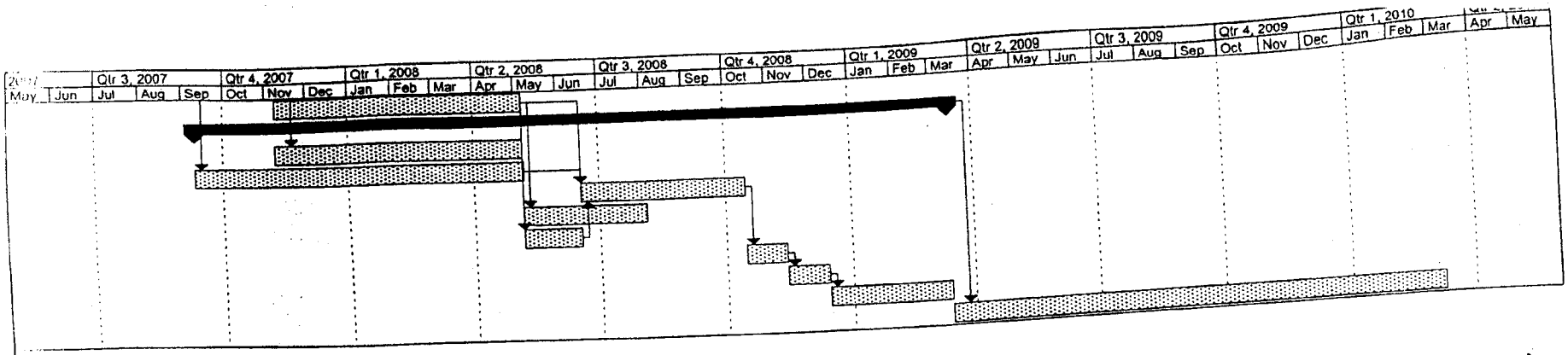

Project: POLB ATMIS System
Date: Thu 6/30/05

Task	Summary	Rolled Up Progress	Deadline
Split	Rolled Up Task	External Tasks	
Progress	Rolled Up Split	Project Summary	
Milestone	Rolled Up Milestone	External Milestone	

LOCAL AGENCY BIDDER-DBE-INFORMATION

This information may be submitted with your bid proposal. If it is not, and you are the apparent low bidder or the second or third low bidder, it must be submitted and received as specified in the Special Provisions. Failure to submit the required DBE information will be grounds for finding the proposal nonresponsive.

CO.-RTE.-K.P.:
CONTRACT NO,:
FEDERAL-AID PROJECT NO:
BID AMOUNT: $ $3,182,813
BID OPENING DATE: September 15, 2003
BIDDER'S NAME: SIEMENS ENERGY & AUTOMATION, INC., BUSINESS UNIT INTELLIGENT TRANSPORTATION SYSTEMS
DBE GOAL FROM CONTRACT: 12.8%

CONTRACT ITEM NO.	ITEM OF WORK AND DESCRIPTION OR SERVICES TO BE SUBCONTRACTED OR MATERIALS TO BE PROVIDED [2]	DBE CERT. NO.	NAME OF DBEs [1] (Must be certified on the date bids are opened - include DBE address and phone number)	DOLLAR AMOUNT DBE [3]
N/A	CAD Services for Field Element Design	028897	LIN Consulting, Inc. 21660 E. Copley Drive, Suite 270, Diamond Bar, CA 91765 909.396.6850	$199,040
N/A	Commercial vehicle operations for the system software design, system implementation, preliminary design, and system warranty elements	030431	TranSmart Technologies, Inc. 2802 Coho Street, Suite 102, Madison, WI 53713 608.273.4740	$106,559
N/A	Comulter and communications equipment	032119	E 2 Corporation 8121 VAN NUYS BLVD #308 PANORAMA CITY CA – 91402 818-904-5660	$170,000
			Total Claimed Participation	**$407,599**

IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Copies of the DBE quotes are required. Names of the First Tier DBE Subcontractors and their respective item(s) of work listed above shall be consistent with the names and items of work in the "List of Subcontractors" submitted with your bid pursuant to the Subcontractors Listing Law and the Special Provisions.

1. DBE prime contractors shall enter their DBE certification number. DBE prime contractors shall indicate all work to be performed by DBEs including work performed by its own forces.

2. If 100% of item is not to be performed or furnished by DBE, describe exact portion of item to be performed or furnished by DBE.

3. See Section "Disadvantaged Business Enterprises," of the Special Provisions to determine the credit allowed for DBE firms

Arti Gupta
Signature of Bidder

August 2, 2005 — Date
626 577 2184 — (Area Code) Tel. No

Arti Gupta
Person to Contact (Please Type or Print)

CT Bidder - DBE Information (Rev02-07-01)

EXHIBIT "B"

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CALTRANS

DEPARTMENT TRANSPORTATION
Business Enterprise Program

PO BOX 94... - MS 79
SACRAMENTO, CA 94274-0001
(916) 27-9599

Certification Number: CT-030431
Certifying Agency: CALTRANS
Expiration Date: 11-01-2005
Contact Person: JING (CONNIE) LI

ASIAN-PACIFIC
FEMALE
CORPORATION

(608) 273-4740

--- * CERTIFIED PROGRAMS ---
DBE SWBE

Attention: JING (CONNIE) LI
TRANSMART TECHNOLOGIES, INC.
2122 LUANN LANE
MADISON, WI 53713

CERTIFICATION MANAGER, BUSINESS ENTERPRISE PROGRAM

-----Post in Public View-----

CERTIFICATION MUST BE RENEWED 120 DAYS PRIOR TO EXPIRATION DATE.---

It is your responsibility to:
- Apply for Recertification on a Timely Basis.
- Review this notification for accuracy and notify Caltrans in writing of any necessary changes.

-----Preferred WORK LOCATIONS-----

SW STATE WIDE

-----Preferred WORK CATEGORIES and BUSINESS Types-----

00 CONSULTANT	S	C8702 MANAGEMENT INFORMATION SY	S
7711 COMPUTER	S	E4780 MISC TRANSPORTATION SERVI	S

Only certified DBE's may be utilized to meet Federally funded contract goals.
Only certified SMBE or SWBE's may be utilized to meet State funded contract goals.
Only certified CFMBE or CFWBE's may be utilized to meet Century Freeway contract goals.

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CALTRANS

DEPARTMENT OF TRANSPORTATION
Business Enterprise Program

PO BOX 942874 - MS 79
SACRAMENTO, CA 94274-0001
(916) 227-9599

Certification Number: CT-032119
Certifying Agency: CALTRANS
Expiration Date: 09-01-2005
Contact Person: SONIA KESHAP

ASIAN-INDIAN
FEMALE
CORPORATION

(818) 904-5460

--- * CERTIFIED PROGRAMS ---
DBE SMBE SWBE

Attention: SONIA KESHAP
E 2 CORP
8121 VAN NUYS BLVD #308
PANORAMA CITY, CA 91402

CERTIFICATION MANAGER, BUSINESS ENTERPRISE PROGRAM

-----Post in Public View-----

--- CERTIFICATION MUST BE RENEWED 120 DAYS PRIOR TO EXPIRATION DATE.---

It is your responsibility to:
- Apply for Recertification on a Timely Basis.
- Review this notification for accuracy and notify Caltrans in writing of any necessary changes.

-----Preferred WORK LOCATIONS-----

SW STATE WIDE

-----Preferred WORK CATEGORIES and BUSINESS Types-----

C8700 CONSULTANT	S	C8701 BUSINESS ADMINISTRATION	S
C8702 MANAGEMENT INFORMATION SY	S	C8711 COMPUTER	S
F5045 COMPUTERS, PERIPHERALS &	S	F5085 COMPUTER EQUIPMENT & SUPP	S
I7370 COMPUTER & DATA PROCESSIN	S	I7371 COMPUTER PROGRAMMING	S
I7372 PREPACKAGED SOFTWARE	S	I7373 INTEGRATED SYSTEMS & CAD/	S
I7375 INFORMATION RETRIEVAL SYS	S	I7378 COMPUTER MAINTENANCE & RE	S
I7380 MISC BUSINESS SERVICES	S		

* Only certified DBE's may be utilized to meet Federally funded contract goals.
Only certified SMBE or SWBE's may be utilized to meet State funded contract goals.
Only certified CFMBE or CFWBE's may be utilized to meet Century Freeway contract goals.

Metropolitan Transportation Authority One Gateway Plaza 2000 Tel
Los Angeles, CA 90012-2952 met et

Metro **CALIFORNIA UNIFIED CERTIFICATION PROGRAM**

June 22, 2005 ***Metro File #3013***

Denwun Lin
Lin Consulting, Inc.
21660 E. Copley Dr. #270
Diamond Bar, CA 91765

RE: Disadvantaged Business Enterprise Certification

Dear Mr. Lin:

We are pleased to advise you that after careful review of your application and supporting documentation, the Los Angeles County Metropolitan Transportation Authority (Metro) has determined that your firm meets the eligibility standards to be certified as a Disadvantaged Business Enterprise (DBE) as required under the U.S. Department of Transportation (U.S. DOT) Regulation 49 CFR Part 26, as amended. Your DBE certification status will be honored by all of the U.S. DOT recipients in California. Your firm will be listed in the California Unified Certification Program (CUCP) database of certified DBEs under the following specific areas of expertise:

NAICS (2002)	Description	Size Standard
541330	Engineering Services	$4.0 million

Your DBE certification is good for three years from the date of this letter and applies only for the above NAICS 2002 codes. Requests for additional or revised NAICS 2002 codes must be made in writing to the Metro. After the three-year certification period, your entire file will be reviewed in order to ascertain continued DBE certification status. Prior to your firm's DBE certification expiration date, the Metro will send a letter to you requesting information necessary to complete this review.

The Regulations also require annual updates during this three-year period. In order to assure continuing DBE status, you must submit annually a DBE Declaration with supporting documentation, in the format that will be sent to you. Based on your annual submission that no change in ownership and control has occurred, or if changes have occurred, they do not affect your firm's DBE standing, the DBE certification of your firm will continue until the three-year certification has expired.

Also, should any changes occur that could affect your certification status prior to receipt of the DBE Declaration, such as changes in your firm's name, business/mailing address, ownership, management or control, or failure to meet the applicable business size standards or personal net worth standard, please notify Metro immediately. DBE certification is subject to review at any time. Failure to submit forms and/or change of information will be deemed as failure to cooperate under §26.109 of the Regulations.

Congratulations, and thank you for your interest in the CUCP.

Sincerely,

Joe R. Hernandez
Manager

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EXHIBIT 9

CERTIFICATION OF CONSULTANT

I HEREBY CERTIFY that I am the _____ and duly authorized representative of the firm of _____ whose address is _____, and that, except as hereby expressly stated, neither I nor the above firm that I represent have:

(a) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above consultant) to solicit or secure this agreement; nor

(b) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the agreement; nor

(c) paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above consultant) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out this agreement.

I acknowledge that this Certificate is to be made available to the California Department of Transportation (Caltrans) in connection with this agreement involving participation of Federal-aid Highway funds, and is subject to applicable State and Federal laws, both criminal and civil.

Date:_____ _____

(Signature)

CMG:rjr08/30/05(EXHIBIT9)#05-01509/04-01934
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EXHIBIT 9

EXHIBIT 10

CERTIFICATION OF LOCAL AGENCY

I HEREBY CERTIFY that I am the _____ of the _____ and that the consulting firm of _____ or its representative has not been required (except as herein expressly stated), directly or indirectly, as an express or implied condition in connection with obtaining or carrying out this Agreement to:

(a) employ, retain, agree to employ or retain, any firm or person; or

(b) pay or agree to pay, to any firm, person or organization, any fee, contribution, donation, or consideration of any kind.

I acknowledged that this Certificate is to be made available to the California Department of Transportation (Caltrans) in connection with this Agreement involving participation of Federal-aid Highway funds, and is subject to applicable State and Federal laws, both criminal and civil.

Date:_____ _____

Signature

CMG:rjr08/30/05(EXHIBIT10)#05-01509/04-01934
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EXHIBIT 10

EXHIBIT 12

INSTRUCTIONS FOR COMPLETING THE MONTHLY REPORT OF DBE PARTICIPATION

All subcontractors, suppliers and manufacturers should be listed on the MONTHLY REPORT OF DBE PARTICIPATION in the same order as listed in the proposal.

Project Title:	Self Explanatory
Project No.:	Self Explanatory
Period Covered by this Report:	Same period as invoice period
Contractor/Consultant Name:	Self Explanatory
Contract No.:	Self Explanatory
Contract Amount (including amendments):	Less mobilization, Force Account Items and Allowance Items. Amendments should be listed separately with an explanation of how it will be allocated to DBEs and non-DBEs
Invoice/Progress Payment No.:	Self Explanatory

Invoice Amounts:

A. Current: $	"Payment Now Due" from the Progress Payment or monthly invoice
B. To Date: $	"Invoice to Date" from the Progress Payment or monthly invoice
C. DBE Goal for this Contract:	% Goal stated in Proposal or Specification
D. TOTAL DBE Payment to Date: $	Summation of "Payments to Date" to DBE Subcontractor, Supplier, or Manufacturer

E. DBE Participation to Date (D/B):

$$\frac{\text{Total DBE "Payment to Date"}}{\text{Invoice To Date}} \times 100\% = \text{to nearest } 0.1\%$$

Current Invoice Billing Amount:	Enter the amount billed by each DBE Subcontractor, Supplier or Manufacturer, as reported in the current invoice

Transmittal No. 1

MONTHLY REPORT OF DBE PARTICIPATION

This report must be submitted by the Contractor/Consultant with each invoice or request for payment under this contract:

Project Title: _____ Contractor/Consultant Name: _____

Project No.: _____ Contract No.: _____

Period Cover by this Report: _____ Contract Amount (including amendments): $ _____

Invoice Amounts: A. Current: $ _____ Invoice/Progress Payment No: _____

B. To Date: $ _____ C. DBE Goal for this Contract: _____ %

DBE Subcontractor, Supplier or Manufacturer	Type of Service or Materials Provided	Payments			Subcontract Amount	Current Invoice Billing Amount
		Prior Months	Current Month	To Date Total		
Name Address Telephone No.						
Name Address Telephone No.						
Name Address Telephone No.						
Name Address Telephone No.						

Note: Payments to DBE supplier or Dealer that is not a manufacturer must be adjusted.

_____
Signature

_____
Print Name, Title and Contract Telephone No.

D. TOTAL DBE Payment to Date: $_____

E. DBE Participation to Date (D/B): _____ %

Rev. 8/7/2003