# ATTACHMENT B1: GOPORT APPLICATION SYSTEM SPECIFICATIONS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. This Section includes the requirements for furnishing and installing an information system and application (GoPort App) which will provide the Port of Oakland's users with freight-related traveler information to improve the efficiency and reliability of truck and rail access and circulation within the Port.

B. This document includes Attachment B2: GoPort ATMS SPS 100% Design High-Level Data Flow Diagram.

C. This document includes Attachment B3: Mobile App Screen Mock-Ups.

D. This document included Attachment B4: Website Screen Mock-Ups.

### 1.2 RELATED SECTIONS

A. Section 272616 "Smart Parking System."

### 1.3 SYSTEM DESCRIPTION

A. General:

1. The purpose of the GoPort App is to create a single portal of freight-related traveler information to increase efficiency of operations for Port users.
2. The GoPort App (GoPort) shall be an information technology (IT) system comprised of:
    a. GoPort server;
    b. GoPort database;
    c. GoPort website, and
    d. GoPort mobile application.
3. The GoPort App software as a whole can accommodate all functionalities for all users without visible degradation in quality to a user.
4. The GoPort App shall receive and consolidate freight-related traveler data from existing sources, proposed FITS technologies, external systems, and end users.
    a. Data created by the FITS technologies will be consolidated, managed, and processed in order to deliver the GoPort functional capabilities defined in Part 2 of this Section to end users via the GoPort website and mobile application interfaces.
5. The GoPort App shall disseminate static and real-time Port information including, but not limited to:
    a. General Port alerts.
    b. wait times.

c. terminal turn times.
d. terminal information.
e. vessel operations.
f. Traffic.
g. Weather.
h. Refreshed snapshots from select public cameras.
i. Port area rail crossings.
j. Parking.
k. Incidents.
l. weigh-in-motion readings.
m. truck resources.
n. performance reports.

6. The GoPort App shall be designed and deployed in three separate phases based on the staging of the other FITS components. Deployment shall be in the following phases:
   a. Phase 1:
      1) Allow login as a Registered User or use as a Guest.
      2) Provide marine terminal information, such as:
         a) Total wait time.
         b) Street queue time.
         c) Turn time information.
         d) Reports.
      3) Provide vessel operations information, such as:
         a) Arrivals.
         b) Departures.
         c) Alerts.
      4) Provide traffic information, such as:
         a) Incident alerts.
         b) Port area and regional travel times.
         c) CMS messages.
         d) Closure information.
         e) Weather.
         f) Select public camera refreshed snapshots.
      5) Provide Port area incidents, security and safety information, such as:
         a) Truck-permitted routes.
         b) Regional oversize/overweight (OS/OW) information.
         c) Port compliance information.
         d) Incident and safety alerts.
      6) Provide resource information for drivers, such as:
         a) Terminal/rail yard hours and contacts.
         b) Fuel stop locations.
         c) Truck parking locations.
         d) Tolls.
         e) Truck service
      7) Allow for customizable settings for alerts and other features.
      8) Display compliance information.
      9) Allow for performance reporting.
      10) Provide information about the GoPort App.
      11) Integrate with eModal platform (or an equivalent container information service) alerts including import availability (status, holds, last free day), booking

balances, and any other information that Port of Oakland marine terminals share through eModal (or an equivalent container information service).

b. Phase 2:
   1) Provide maps of traffic conditions via supplemental vehicle detection.
   2) Provide rail crossing status information.
   3) Provide truck parking availability information.
   4) Allow for truck parking reservations and payments.
   5) Allow for container release requests.

c. Phase 3:
   1) Provide Weigh-in-Motion system notifications to the individual driver (not publically shared).
   2) Connect to Port Wi-Fi.

d. Potential Future Phases:
   1) Truck travel times and routes.
   2) Enhanced smart parking system.
   3) Other new technologies.

7. The GoPort App shall be able to accommodate future functionality.
8. Contractor shall plan for 3 design charrettes at the 30%, 60%, and 100% complete levels for review by the following parties including, but not limited to:
   a. Port staff users and administrators.
   b. ConOps Advisory Committee (CAC).
   c. Port Efficiency Task Force (PETF).
   d. Trucker Work group participants.
9. Ownership will be turned over to the Port following system acceptance.

B. System Actors. Potential Users and data contributors of the GoPort App include, but are not limited to:

1. Port of Oakland.
2. Licensed Motor Carrier Operators and Dispatchers.
3. Marine Terminal Operators.
4. Rail Company Operators.
5. California Department of Transportation (Caltrans).
6. Metropolitan Transportation Commission (MTC).
7. City of Oakland.
8. California Highway Patrol (CHP).
9. Non-Vessel Operating Common Carriers (NVOCC).
10. Beneficial Cargo Owners (BCOs).
11. Ocean Carriers.
12. Port Registry.
13. eModal (or an equivalent container information service).
14. SF Marine Exchange.
15. Smart Parking System.
16. Advanced Traffic Management System (ATMS).
17. National Oceanic and Atmospheric Administration (NOAA).
18. Chassis Providers.

C. User Types:

1. Guest User.
2. Driver Registered User.
3. LMC Registered User.
4. TMC/EOC Operator.
5. System Administrator.

D. Allowed Permissions:

1. Phase 1:

*Table 1*

| Function | Guest User | Registered Users | | | | System Administrator |
|---|---|---|---|---|---|---|
| | | Driver Registered User | Licensed Motor Carrier (LMC) Registered User | TMC/EOC Operator | City/Caltrans/MTC Traffic Management Staff | |
| **Login Screen** | | | | | | |
| Use as Guest | X | | | | | |
| Login | | X | X | X | X | X |
| **Home Screen** | | | | | | |
| **Marine Terminals Module** | | | | | | |
| View Marine Terminal Conditions, Basic Reports | X | X | X | X | X | X |
| View Camera Views, Locations | X | X | X | X | X | X |
| **Vessel Operations Module** | | | | | | |
| View Vessel Operations Details | X | X | X | X | X | X |
| **Traffic & Cameras Module** | | | | | | |
| View Port Traffic Conditions | X | X | X | X | X | X |
| View Regional Traffic Conditions | X | X | X | X | X | X |
| Search Route Directions | X | X | X | X | X | X |
| View Weather Conditions | X | X | X | X | X | X |
| Search Weather Conditions | X | X | X | X | X | X |
| **Reservations Module** | | | | | | |

| Function | Guest User | Registered Users | | | | System Administrator |
|---|---|---|---|---|---|---|
| | | Driver Registered User | Licensed Motor Carrier (LMC) Registered User | TMC/EOC Operator | City/Caltrans/MTC Traffic Management Staff | |
| Receive eModal (or an equivalent container information service) Alerts | | X | X | | | |
| **Security & Safety Module** | | | | | | |
| View Safety Resources | X | X | X | X | X | X |
| View Certification Compliance Status | | | X | | | |
| **Settings Screen** | | | | | | |
| Opt In | X | | | | | |
| Customize Settings | | X | X | X | X | X |
| Receive In-App Alerts | X | X | X | X | X | X |
| Receive SMS, Email, Audible Alerts | | X | X | X | X | X |
| Change GoPort Password | | X | X | X | X | X |
| Store eModal (or an equivalent container information service) Login Information | | X | X | | | |
| Set Up, Maintain User Accounts | | | | | | X |
| Assign User Role | | | | | | X |
| Edit Configurable Parameters, Lists | | | | | | X |
| **Resources Screen** | | | | | | |
| Access Resources | X | X | X | X | X | X |
| Submit Comments, Questions (Website Only) | X | X | X | X | X | X |
| **Alerts Screen** | | | | | | |
| View Alerts | X | X | X | X | X | X |
| Share Alerts | X | X | X | X | X | X |

| Function | Guest User | Registered Users | | | | System Administrator |
|---|---|---|---|---|---|---|
| | | Driver Registered User | Licensed Motor Carrier (LMC) Registered User | TMC/EOC Operator | City/Caltrans/MTC Traffic Management Staff | |
| Delete Non-Critical Alerts | | X | X | X | X | X |
| Push Alerts | | | | X | X | X |
| Edit Alert Details | | | | X | X | X |
| **About Screen** | | | | | | |
| View GoPort App Descriptions | X | X | X | X | X | X |
| Contact Port of Oakland | X | X | X | X | X | X |
| **Reports Screen** | | | | | | |
| View Turn Time, Vessel Operations Detailed Reports (Website Only) | X | X | X | X | X | X |
| Download Turn Time, Vessel Operations Detailed Reports (Website Only) | X | X | X | X | X | X |
| View GoPort App Module Detailed Performance Reports (Website Only) | | | | X | | X |
| Download GoPort App Module Detailed Performance Reports (Website Only) | | | | X | | X |
| View ITS Equipment Logs, Exception Reports (Website Only) | | | | | | X |
| Download ITS Equipment Logs, Exception Reports (Website Only) | | | | | | X |

2. Phase 2:

*Table 2*

| Function | Guest | Registered Users | | | | System Administrator |
|---|---|---|---|---|---|---|
| | | Driver Registered User | Licensed Motor Carrier (LMC) Registered User | TMC/EOC Operator | City/Caltrans/ MTC Traffic Management Staff | |
| **Home Screen** | | | | | | |
| **Rail Crossings Module** | | | | | | |
| View Rail Crossing Status | X | X | X | X | X | X |
| Edit Rail Crossing Status | | | | X | | X |
| **Reservations Module** | | | | | | |
| Search Parking Availability | X | X | X | X | X | X |
| Make, Manage Parking Reservation | | X | X | | | X |
| **Payments Module** | | | | | | |
| View Parking Invoices, Receipts | | X | X | | | X |
| Make Parking Payments | | X | X | | | X |
| **Driver & Truck Management Module** | | | | | | |
| Search Drivers, Trucks | | | X | | | X |
| View Driver, Truck Information | | | X | | | X |
| Managed Approved Drivers, Trucks | | | X | | | X |
| **Container Release Module** | | | | | | |
| View Released Containers | | | X | X | | X |
| Submit Container Release Request | | | X | | | X |

3. Phase 3

*Table 3*

| **Functionality** | **Guest** | **Registered Users** | | | | **System Administrator** |
|---|---|---|---|---|---|---|
| | | **Driver Registered User** | **Licensed Motor Carrier (LMC) Registered User** | **TMC/EOC Operator** | **City/Caltrans/ MTC Traffic Management Staff** | |
| **Security & Safety Module** | | | | | | |
| View Weight Measurement | | X | X | X | | X |

1.4 SUBMITTALS & PROJECT DOCUMENTATION

A. The Contractor shall prepare a Project Binder with the Project's documentation that consists of the following:

1. Project Management/Work Plan, detailing the proposed approach to completing the Project, including identification of relevant tasks and an organization/contact chart of personnel;
2. Quality Plan, detailing the Contractor's Quality Assurance Procedures;
3. GoPort App System Design, detailing the GoPort App system design and functionality;
4. Factory Acceptance Test Procedures, describing the tests that will demonstrate that the system works according to the defined requirements in a controlled environment;
5. Installation Plan, detailing the installation procedure;
6. Cutover Plan, detailing the process for transitioning from the previous system to the new system;
7. System Acceptance Test Plan, detailing the approach to system testing;
8. Training Plan, detailing course content, training time requirements, and who should attend;
9. Maintenance and Operations Support Plan, detailing routine maintenance measures, response for repairs, communications service and operations support; and
10. Statement of Warranty.

B. All documentation shall be in English, shall utilize U.S. Customary measurements, and shall be submitted directly to Alameda CTC electronically.

C. Due to the substantial amount of documentation involved in this Project, Contractor shall work with the Alameda CTC's Project Manager to develop and submit to the Port a Documentation Management System.

1. The Document Management System shall include an organized electronic library of all versions of all submittals and a log of the contents.

2. This shall be completed within 60 days after Notice to Proceed (NTP).

D. The Alameda CTC and the Contractor shall mutually agree on a documentation file index that shall provide an overall methodology for referencing documents generated in the course of the Project.

1. File type and organization of electronic versions of documentation shall be mutually agreed on by the Alameda CTC and Contractor.
2. All subsequent documentation shall be referenced to the file index, and Contractor and the Alameda CTC shall mutually maintain the file index in current condition to show all documents that have been generated and their status.

E. Documentation shall be readily available to the Alameda CTC's Project Manager, designated personnel within the Contractor's organization, and additional Port designated personnel. Security methods shall be available to restrict access by others.

F. The Contractor shall correct any inaccuracies and add plans to correct any deficiencies as identified by the Alameda CTC or as necessary to document changes made during acceptance testing. Final versions of the as-built system shall be submitted within two (2) weeks after acceptance testing or training, whichever is later.

G. The Contractor shall provide all necessary software and data to allow the Alameda CTC to fully maintain and update all applications software, licenses, certifications, computers, and data shall include as-built versions of the following:

1. Software Requirements Specification;
2. Software Version Description Document, or equivalent;
3. All "batch" or equivalent files, and all object libraries and "include" files, for editing, compiling, linking, and installing application software. Corresponding instructions shall also be provided;
4. All files required to define, allocate, and load the database, and any other data files required to define, configure, load, or operate the system. Corresponding instructions shall also be provided;
5. A list of the configuration parameters and their values. A list of potential problems if the configuration parameters are set to extreme values;
6. Style guide of guidelines for usage of colors, fonts, and other graphical elements of the GoPort App design; and
7. Images for GoPort App icons, logos and other design elements.

H. The Contractor shall be required to sign-off copyrights, IP etc. to Port and provide source code and sufficient documentation including source code documentation in Escrow to permit modification of the delivered software without the necessity of contacting the Contractor in the event the Contractor is unwilling or unable to undertake such modifications and to allow Port to make modifications.

I. The Contractor shall include the necessary time and resources to modify the documentation to incorporate comments from the Alameda CTC. The Contractor shall then include additional time for the Alameda CTC to review the revised documentation.

J. The Project's documentation shall be complete, accurate, up-to-date, and shall only contain information that pertains to the system installed.

K. The Contractor shall provide cutover documentation describing the process from migrating from the old system to the new system. The cutover plan shall include the full range of migration details, including equipment installations, central system transition, communications transition, and timing for testing, training, and documentation relative to the cutover schedule.

L. The Contractor shall provide a traceability matrix during System Design that provides cross-mapping of GoPort App requirements to the design documents or to Future project stage's documentation.

1. Cross referencing shall be at a detailed level and shall indicate that the requirements are fulfilled by the designed system.
2. At a minimum, the mapping shall reference the chapter and section of the design document that describes how the system meets the requirement.

M. The Alameda CTC and/or designated representative will review and approve or take other appropriate action upon the Contractor's submittals.

1. The Alameda CTC's action will be taken as to cause no delay in the work or in the activities of the Contractor.
2. Review of such submittals is not conducted for determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the contract.
3. The Alameda CTC's or designated representative's review will not constitute approval of safety precautions or, unless specifically stated by the Alameda CTC or designated representative of any construction means, methods, techniques, sequences, or procedures.
4. The Alameda CTC's or designated representative's approval of a specific item does not indicate approval of an entire assembly of which the item is a component.

N. Following review, approved documents will be identified as having received such approval with a dated acknowledgement. Disapproved documents and drawings will be returned to the Contractor with a dated acknowledgement and directions for correction and re-submittal.

## 1.5 QUALITY ASSURANCE

A. The Contractor shall implement a Quality Assurance (QA) program to ensure the quality of the equipment installed.

1. The Contractor shall submit to the Alameda CTC within 60 days of the Notice-To-Proceed a comprehensive Quality Assurance (QA) Program Plan designed to ensure the quality of all activities, including design, purchasing, inspection, handling, assembly, testing, storage, shipping, and warranty/repair work.
2. The plan shall describe all quality control procedures of the Contractor and any sub-suppliers.
3. The Contractor shall conduct regular inspections in accordance with guidelines defined by the QA Program Plan.
4. Performance of any design or construction work shall not commence until the Quality Assurance and Control Plan relating to such Work has been accepted by the Alameda CTC.
5. The Contractor shall update the QA Program Plan as necessary, when any deficiencies in the Work are discovered.

B. The Quality Assurance (QA) program shall ensure the quality of the software and hardware installed.

1. For each installation the installers shall fill out a checklist and certify that all required installation steps, operational checks, and quality control (QC) reviews have been performed.
2. The checklists shall be submitted to the Alameda CTC weekly during installation, and shall be considered a required item for System Acceptance.

C. The Alameda CTC will, at its own discretion, perform QA monitoring of work done under this Contract, including monitoring of the Contractor's or Subcontractor's QA activities.

1. Upon request, the Contractor's QA records shall be made available to the Alameda CTC for inspection.
2. Such QA activities performed (or not performed) by the Alameda CTC shall not reduce nor alter the Contractor's QA responsibilities or its obligation to meet the requirements of this document.

## 1.6 WARRANTY

A. All materials, components, and parts furnished under this contract shall be new and of high quality and in conformance with this contract.

1. The Contractor shall represent that all equipment offered under these specifications is new.
2. Used, shopworn, demonstrator, prototype, remanufactured, reconditioned, or discontinued equipment shall not be supplied under this contract.
3. Use of existing Port equipment, or software will only be accepted, if properly inventoried and documented and under the Alameda CTC's written permission.

B. All workmanship provided under this contract shall be of high quality, and in conformance with this contract.

C. The Contractor warrants that all software meets the functional and performance requirements as described in the requirements.

1. The Contractor warrants that all materials, components, parts and workmanship of GoPort App elements provided under this Contract to be free of defects.
2. Such warranties by the Contractor shall apply to all GoPort App software, components, parts and workmanship, whether performed or provided by the Contractor, Contractor's Subcontractors, or suppliers at any tier.
3. This system warranty shall commence upon System Acceptance, and shall be for a period of five (5) years after system acceptance and completion, except for any longer period provided in this Contract.

D. The Contractor shall furnish, at its own expense, all material, parts, labor, taxes, shipping costs, remote access equipment and services, and all other expenses required to fulfill its GoPort App warranty obligations.

E. All installation and hardware provided by the Contractor shall be covered by a parts and labor Warranty, which shall commence upon System Acceptance, and shall be for a period of five (5) years, except for any longer period provided in this contract.

F. The Contractor shall make best efforts to repair or replace equipment from failures on a one (1) week turnaround throughout the warranty period. The maximum time for repair or replacement is 21 days.

G. Central system equipment failures shall be repaired or replaced by the Contractor within twenty-four (24) hours.

H. During the warranty period, the Alameda CTC shall receive all updates at no cost for all software applications, interfaces, and/or modules provided by the Contractor to the Alameda CTC prior to System Acceptance, including those which correct bugs or enhance system functionality.

I. All issues identified during the warranty period shall be resolved under the warranty even if the warranty period expires before the issue is resolved.

J. For each failed component, the Contractor shall provide the Alameda CTC with a failure analysis report. The Contractor and the Alameda CTC will work together in determining if the failed component will be repaired or replaced.

K. The Contractor shall provide during the warranty period the latest compatible version of the failed part/hardware with the latest firmware.

L. Systemic failures shall be defined as the occurrence of component failures in excess of 10% during the warranty period.

M. In the event of systemic failures during the warranty period, the Contractor shall at their expense, within 30 days of notification of such instance, commence a modification program to repair or replace all such components, including those that have passed beyond the warranty period, to correct the cause(s) of such failures.

    1. The design of the repair or replacement for the component(s) involved in each such modification program shall be developed by the Contractor to remedy the nature and probable cause of the component failures and shall be approved by the Alameda CTC.
    2. Repair and/or replacement of components pursuant to each modification program shall be according to the same provisions herein as if such components were failed components requiring warranty repair and/or replacement, whether or not actual failures for some or most of the involved components have occurred following notification of a requirement for a modification program.

N. Materials, parts or components used for replacement under the initial warranty period shall assume the original warranty period.

O. All software provided by the Contractor shall be covered by the Warranty from installation until five (5) years from System Acceptance.

1.7 MAINTENANCE

A. Contractor shall provide first line (diagnostics, troubleshooting, configuration and remove and replace) maintenance training.

B. Contractor shall provide preventative maintenance training during first line maintenance training.

C. The Contractor shall provide Maintenance Manuals documenting how the system components were configured, how to manage system configurations, and the schedule/procedures for preventative maintenance, inspection, fault diagnosis, component replacement and warranty administration on each system component.

PART 2 - PRODUCTS

2.1 GOPORT APP GENERAL REQUIREMENTS

A. Users shall be able to access the app on a web browser, tablet, smartphone, or other mobile devices by pointing their web browser to a specific public URL (TBD), or by downloading a mobile app onto their mobile device or tablet.

B. Users shall be able to navigate to the website using links placed on other public web sites (e.g., www.portofoakland.com).

C. GoPort menu options shared across screens shall include:

1. Home.
2. Settings.
3. Resources.
4. Alerts.
5. About.
6. Reports (Website Only).

D. The active menu item shall be differentiated from the other menu items.

E. Across all GoPort pages, the current date and time shall be visible.

F. At the bottom of any screen that displays real-time or regularly updated information, the app shall show a timestamp indicating the last time the information was updated, alongside a countdown until the next data refresh (i.e., 15 seconds).

G. The GoPort mobile app orientation shall automatically adjust if the User rotates from portrait (vertical) or landscape (horizontal).

1. This is contingent upon the User's smartphone auto-rotate setting being enabled.

2.2 GOPORT APP SCREENS

A. Reference Table 1, Table 2, and Table 3 for a summary of user group permissions detailed in this section.

B. Login:

1. Guest Users shall be able to access the GoPort App without entering login information, but shall only have access to a limited set of GoPort App modules.
2. Registered Users shall be able to log into the GoPort App using the email address and password they used to set up their GoPort account.

C. Home:

1. Guest Users shall be able to access the following GoPort App modules without a registered account:
    a. Marine Terminals.
    b. Vessel Operations.
    c. Traffic & Cameras.
    d. Security & Safety.
    e. Rail Crossings (Phase 2).
    f. Reservations.

2. A Registered User who logs in with their registered email and password shall have access to GoPort screens that are customized to their personal settings.
3. GoPort App modules shall be accessed via a menu of icons.
4. Home screen Phase 1 icons shall include:
    a. Marine Terminals.
    b. Vessel Operations.
    c. Traffic & Cameras.
    d. Reservations.
    e. Security & Safety.

5. All active marine terminals shall be listed on the Home screen alongside the current total wait times.
    a. Each marine terminal's total wait times shall be refreshed every 15 seconds.

6. The total wait time for each marine terminal shall be displayed along a color-coded barometer with three categories:
    a. Low: Green.
    b. Medium: Yellow.
    c. High: Red.

7. If the module icons spill over onto a second screen, horizontal navigation bullets shall be added to the bottom of the screen.
    a. The current page's navigation bullet shall be emphasized.

8. The following requirements shall be implemented in Phase 2:
    a. Home screen Phase 2 icons shall include:
        1) Rail Crossings.
        2) Payments.
        3) Driver & Truck Management.
        4) Container Release.

D. Settings:

1. Guest Users shall be able to opt-in as a Driver Registered User by agreeing to privacy policy text and creating a profile using:
    a. First Name.
    b. Last Name.
    c. Commercial Driver License Number or Transportation Worker Identification Credential (TWIC) Number.
    d. Email Address.
    e. GoPort Password.
    f. Phone number (optional, for SMS messages).

2. LMC Registered User accounts shall be created by GoPort App System Administrators to prevent unauthorized LMC accounts from being created using publically known SCAC or STEP IDs.
    a. LMC Registered User accounts shall be created based on validated LMCs pulled from the Port Registry system or eModal (or an equivalent container information service).

3. A Registered User's settings shall be applied to all platforms used by the User (e.g., web browser, tablet, or smartphone).
4. Registered Users shall be able to see the following sections on the Settings screen:
    a. Customize Settings.
    b. eModal (or an equivalent container information service) Login.

5. Driver and LMC Registered Users shall be able to enter and save their eModal (or an equivalent container information service) username and password which would enable eModal (or an equivalent container information service) alerts to be displayed through the GoPort App.
6. The Customize Settings section shall contain the following subsections:
    a. Alert Types.
    b. Alert Formats.
    c. Language Options.
    d. Time Format.

7. In the Alert Types subsection of Customized Settings, each of the active GoPort App modules shall be listed, except for the Security & Safety module.
    a. Receiving alerts from the Security & Safety module is mandatory and is therefore not included on the options list.

8. In the Alert Types subsection of Customized Settings, Registered Users shall be allowed to deselect modules that they are not interested in receiving alerts from.
    a. By default, all modules shall be selected.

9. Within Traffic & Cameras under the Alert Types subsection, Registered Users shall be allowed to select regional corridors they are interested in receiving alerts for. Corridors shall include:
    a. San Francisco.
    b. East Bay.
    c. Salinas – Watsonville.
    d. Sacramento – Richmond.

e. Tracy – Dublin.
f. Stockton – Manteca.
g. Gustine – Patterson.
h. Waterford – Modesto.
i. Fresno – Madera.

10. By default, all corridors shall be selected.
11. Based on the feasibility of mapping Caltrans notifications to regional corridors (has yet to be determined), the list of regional corridors may be subject to change.
12. Registered Users shall be allowed to select the format by which the alerts are delivered. Options shall include:
    a. In-App (Mobile Application Only).
    b. SMS Messages.
    c. Audible (Mobile Application Only).
    d. Email.

13. In-App alerts shall be selected by default for the GoPort mobile application platform.
    a. Guest Users will only receive In-App alerts.

14. Email alerts shall be selected by default for GoPort website platform.
15. Selecting multiple alert format options shall be permitted.
16. Registered Users shall be allowed to select the language in which the GoPort app is displayed. Language options shall include:
    a. English.
    b. Spanish.
    c. Punjabi.

17. The default alert language shall be set to English.
18. Only one alert language shall be selected.
19. In the Time Format subsection of Customized Settings, Registered Users shall be allowed to select the time format to be used to display the local time zone timestamp on each screen and next to each alert. Options include:
    a. Standard (AM/PM).
    b. Military (24 HR).

20. The default Time Format option shall be set to Standard (AM/PM).
21. Registered Users shall have the ability to change their passwords.
22. System Administrators shall have the ability to maintain a list of active and inactive GoPort App modules and edit module descriptions as needed.
23. The list of operating marine terminals shall be configurable by System Administrators.
    a. The four (4) marine terminals currently operating at the Port include:
        1) OICT.
        2) Matson.
        3) Everport.
        4) TraPac.

24. The list of railyard or intermodal yards shall be configurable by System Administrators.

25. The low, medium, and high thresholds for the Total Wait Time barometers shall be configurable by System Administrators.
    a. To start, the thresholds shall be set at:

1) Low (Green): Less than 75 minutes.
2) Medium (Yellow): Between 75-120 minutes.
3) High (Red): More than 120 minutes.

26. The Total Wait Time thresholds shall be applied across gates and marine terminals.
27. The low, medium, and high thresholds for the Street Wait Time shall be configurable by System Administrators.
    a. To start, the thresholds shall be set at:
        1) Low (Green): Less than 15 minutes.
        2) Medium (Yellow): Between 15-30 minutes.
        3) High (Red): More than 30 minutes.

28. The low, medium, and high thresholds for the Terminal Turn Time shall be configurable by System Administrators.
    a. To start, the thresholds shall be set at:
        1) Low (Green): Less than 60 minutes.
        2) Medium (Yellow): Between 60-90 minutes.
        3) High (Red): More than 90 minutes.

29. System Administrators shall maintain a reference table of terminal-specific hours and shifts.
30. System Administrators shall be able to configure the following Port property at-grade rail crossing attributes:
    a. Status (active/inactive).
    b. Train detection (available/not available).

31. The resource categories displayed on the Resources Screen shall be configurable by System Administrators based on evolving User needs.
    a. The initial sections displayed on the Resources Screen shall include:
        1) Port.
        2) Marine Terminals.
        3) Rail.
        4) Truck Support.
        5) Tolls.

32. The resource lists displayed on the Resources Screen shall be configurable by System Administrators based on evolving User needs. Information shall be provided as direct links to external webpages, which shall be maintained by System Administrators.
    a. External webpages include, but are not limited to:
        1) Port Trucker Resources.
        2) Port Tenants.
        3) Oakland Portal.
        4) BNSF.
        5) UP.
        6) American Truck Parking.
        7) Gas Buddy.
        8) Port Area Commercial Scales.
        9) Caltrans Public Scale Locations.
        10) Truck Maintenance Service Facilities.
        11) Food Truck Locations.

33. System Administrators shall have the ability to maintain the list of About Screen sections and sub-sections, as well as associated descriptions.

E. Resources:

1. The Resources Screen shall display a list of relevant resources provided as direct links to external webpages that are organized by logical categories set by System Administrators.
2. The GoPort website shall include the ability for a User to send comments or feedback to System Administrators through the Resources Screen.

F. Alerts:

1. Phase 1 Alerts Screen sections and sub-sections shall include:
    a. Marine Terminals:
        1) OICT.
        2) Matson.
        3) Everport.
        4) TraPac.
    b. Vessel Operations.
    c. Traffic & Cameras:
        1) Port Area Message Signs.
        2) Port Area Construction & Events.
        3) Port Area Incidents & Closures.
        4) Regional Message Signs.
        5) Regional Construction & Events.
        6) Regional Incidents & Closures.
    d. Reservations:
        1) Marine Terminals.
    e. Security & Safety:
        1) Maritime Security.
        2) Public Safety.
        3) Compliance.

2. The Alerts Screen sections and order shall match the modules listed on the Home Screen.
3. Each alert shall have the following characteristics:
    a. Alert Section.
    b. Alert Section Sub-category (if applicable).
    c. Date/Timestamp.
    d. Alert Message.
    e. Alert Location (if applicable).
    f. Alert Frequency (daily or non-recurring) – Internal Use.
    g. Can be Deleted? (Y/N).
    h. Expiration Date – Internal Use.
    i. Alert Priority – Internal Use.

4. Alert Frequency and Expiration Date shall be used internally for alert management and does not need to be shown on the screen.
5. Within each alert section, individual alerts shall be ordered from newest to oldest based on date/timestamp.
6. Daily alerts (e.g., upcoming appointments, upcoming reservations) shall be timestamped using the time the Port opens for business.

7. Non-recurring alerts (e.g., maritime security, vessel arrival) shall be timestamped using the time the alert was issued.
8. Guest Users and Registered Users shall be able to forward alerts to a specified phone number or email address.
9. Registered Users shall be able to delete non-critical alerts. If an alert is deleted on the Alert Screen or a different screen, it shall no longer appear on any screens for this particular Registered User. This applies to alerts hosted on other Port sub-systems (e.g., ATMS).
    a. Critical alerts include alerts under Maritime Security and Public Safety sub-sections.

10. Alerts shall be assigned an expiration date (either automatically or manually), which will be used to clear old alerts from the screen.
    a. Daily alerts shall be automatically deleted at the start of the next business day.
    b. Non-recurring alerts (e.g., Maritime Security, Public Safety, Traffic closures/incidents/delays, etc.) can be assigned an expiration date by System Administrators after the incident has been cleared.

11. Each Alert section shall have the functionality to collapse or expand.
    a. The GoPort App shall remember Registered Users' preference and keep the section expanded or collapsed.

12. Traffic alerts shall be filtered based on regional corridors selected on the Settings Screen by Registered Users.
    a. Guest Users shall see traffic alerts from all regional corridors.

13. Reservation alert messages shall be issued under the Marine Terminals section when the system can automatically modify reservations and suggest real-time parking options based on both container availability and truck GPS location/predicted truck ETA at the Port:
    a. Reschedule to an earlier appointment if they arrive early to the Port, the container they are scheduled to pick up is available early, and an earlier appointment time is available -- provide a real-time alert to both the driver and the dispatcher.
    b. Reschedule an appointment if the Driver enters the Port too late to make the appointment, taking into consideration the current street wait time -- provide a real-time alert to both the driver and the dispatcher
    c. Provide a real-time recommendation to the driver to park at a lot instead of waiting in the terminal queue if the Smart Parking System (SPS) indicates that a spot is available and the Driver arrives too early for their appointment (with the current street wait time taken into consideration), or the container is not yet ready for pick-up by the appointment window.

14. Maritime Security and Public Safety alert messages shall be emphasized using red text.
15. Alerts shall be read aloud for Registered Users who have selected Audible alerts on the Settings Screen.
16. Guest Users and Registered Users who have selected In-App alerts shall receive immediate pop-up alert alerts on their mobile phones.
17. The following requirements shall be implemented in Phase 2:
    a. Phase 2 Alert Screen sections and sub-sections shall include these additional sections and sub-sections:
        1) Rail Crossings.
        2) Reservations:
            a) Parking.

3) Payments:
    a) Parking.
4) Driver & Truck Management:
5) Container Release.

18. The following requirements shall be implemented in Phase 3:
    a. Phase 3 Alerts Screen sections and sub-sections shall include these additional sections and sub-sections:
        1) Security & Safety:
            a) Weigh-in-Motion.
    b. In Phase 3, WIM measurements shall first be displayed only on a ground-mounted CMS positioned by the WIM scale. Eventually, the WIM system shall be enhanced to link the WIM reading to a truck RFID. The reading shall be collected by the ATMS and then disseminated to the individual driver's GoPort App interface (not publically shared).

G. About:

1. The sections of the About screen shall include:
    a. GoPort.
    b. Modules.
    c. Settings.
    d. Resources.
    e. Alerts.
    f. Disclaimer.
    g. Privacy Policy.
    h. Conditions of Use.

2. Each section shall display a brief description explaining the purpose and functionality of the associated section.

3. The GoPort App shall include a Contact Us form for users to submit comments or suggestions.
4. The GoPort App version number shall be displayed at the bottom of the screen.
5. The GoPort website shall include a list of Frequently Asked Questions (FAQs) that includes, but is not limited to, how turn times are measured.

H. Reports:

1. On the GoPort website, TMC/EOC Operators and System Administrators shall have the ability to generate reports on data from all GoPort App modules.
    a. Guest Users, Driver Registered Users and LMC Registered Users shall be limited to generating turn time and vessel performance reports.

2. Users shall be able to query historical turn time information on the GoPort website for each terminal/gate based on hour, day, week, month, year, and SCAC code.
    a. Only System Administrators shall be able to query the number of exceptions on the GoPort website.
    b. Exceptions can be queried by hour, week, month, year, etc.

3. Daily turn times shall be broken down by percentage of turn times less than 1 hour, percentage between 1-2 hours, and percentage greater than 2 hours.
4. The GoPort website shall provide historic turn time averages.
    a. Historical turn time data shall be displayed for each terminal/gate that shows the week's tally (a week defined as Sunday through Saturday) of average turn time, percent under 1 hour, percent between 1-2 hours, and percent over two hours.

5. Historic turn time calculations on the GoPort website shall exclude exceptions.
    a. Examples of exceptions include, but are not limited to:
        1) A turn time > 4 hours.
        2) A truck that in-gates and has not out-gated within 4 hours.
        3) A truck that does not out-gate at all.
    b. Exceptions are to be further defined by the Port.

6. On the GoPort website, there shall be an On-Time Vessel Arrival Report that displays metrics pertaining to vessel on-time performance. The report shall display:
    a. Monthly and annual percentages of on-time performance per marine terminal.
    b. Overall monthly and annual percentages of on-time performance for Port as a whole.
    c. A bar graph of the monthly on-time performance percentages by terminal.

7. Historical reports on the GoPort website shall have the following download options:
    a. PDF.
    b. Excel.
    c. CSV.
    d. XML.

## 2.3 GOPORT APP MODULES

A. Marine Terminals:

1. Data used to generate the information on the Marine Terminals module screen shall be pulled from the ATMS.
    a. If the GoPort App is deployed prior to the ATMS, then the video feeds shall be pulled from the CCTV system instead.
    b. If the GoPort App is deployed prior to the ATMS, then the data used to calculate turn times shall be pulled from the RFID system instead and then transition to ATMS when it is available.

2. From the Home Screen, the GoPort App shall allow the User to access a screen dedicated to each active marine terminal. Each marine terminal screen shall allow users to select a specific gate to access the following information:
    a. Total Wait Times.
    b. Camera Views.
    c. Alerts specific to each marine terminal.

3. Within the Total Wait Times section of a gate-specific screen, the following metrics should be displayed as text, as well as dials on a color-coded barometer:
    a. Current total wait time (minutes).
    b. Today's average total wait time (minutes).

4. Today's average total wait time shall be a hyperlink.

5. The User, upon clicking the average total wait time hyperlink shall be taken to a new screen that displays the following metrics (default units shown in brackets) for the current day:
    a. Total number of trucks that have entered the gate [number of trucks].
    b. Gate-specific average turn time [minutes].
    c. A graph of the current day's hourly street wait time, terminal turn time, and total turn time. The x-axis of the graph shall represent the hour of the day, while the y-axis of the graph shows the number of minutes.

6. The same thresholds for the total wait time barometer shall be applied across gates and marine terminals.
7. The following real-time performance metrics (default units shown in brackets) shall be displayed on the Total Wait Times screen, below the color-coded barometer after the ATMS queue detection system has been deployed:
    a. Trucks in Queue [number of trucks].
    b. Street Queue Length [miles].
    c. Street Wait Time [minutes].
    d. Terminal Turn Time [minutes].

8. The Total Wait Time shall be the sum of the Street Wait Time and Terminal Turn Time.
9. The Street Wait Time and Terminal Turn Time shall be displayed in minutes, unless it exceeds 1 hour, then it shall be displayed as X hours X minutes.
10. The Street Wait Time and Terminal Turn Time shall be color-coded according to three categories:
    a. Low: Green.
    b. Medium: Yellow.
    c. High: Red.

11. Turn times calculations shall be consistent with turn times calculated by the Port Advanced Traffic Management System. Turn time calculations shall exclude exceptions.
    a. Examples of exceptions include, but are not limited to:
        1) A turn time > 4 hours.
        2) A truck that in-gates and has not out-gated within 4 hours.
        3) A truck that does not out-gate at all.
    b. Exceptions are to be further defined by the Port.
    c. Daily averages shall exclude hours of the day that the terminal is closed.

12. When a terminal is closed, real-time performance metrics displayed through the GoPort App shall display "Terminal Closed."
13. The following performance metrics (including graphs) shall be refreshed every 15 seconds:
    a. Current Total Wait Time.
    b. Today's Average Total Wait Time.
    c. Street Queue Length.
    d. Trucks in Queue.
    e. Street Wait Time.
    f. Terminal Turn Time.
    g. Total Trucks.

14. In the Camera Views section, each public camera that is associated with the specific marine terminal shall be shown with:
    a. Thumbnail.

b. Camera Name.
c. GPS Location Link.

15. These camera views, in addition to cameras located at Port facilities outside of marine terminals are also accessible through the Traffic & Cameras module.
16. Clicking on a GPS location link shall bring the User to the Traffic & Cameras module that shows the location of that specific camera on a map.
17. Camera views shall be refreshed every 15 seconds.
18. Camera views shall utilize still image format.
19. The Alerts section shall display the same alerts that are listed under the Marine Terminals section of the Alerts Screen.
20. The requirements for Marine Terminal alerts follow the ones listed in Article 2.2F of this Section and are not repeated in this Article.

B. Vessel Operations:

1. Data used to generate the information on the Vessel Operations module screen shall be pulled from the ATMS.
   a. If the GoPort App is deployed prior to the ATMS, then the data shall be pulled from SF Marine Exchange instead. Vessel information provided through the following SF Marine Exchange reports shall be linked using vessels' sign field (refers to a vessel's call sign):
      1) Due to Arrive Report.
      2) Due to Depart Report.
      3) In Port Report.
      4) Long Ship Report.

2. The Vessel Operations module screen shall display the following sections:
   a. Vessel Information.
   b. Alerts.

3. The Vessel Information section shall display the following information:
   a. Name.
   b. Estimated Time of Arrival (ETA) Date/Time.
   c. Berth.
   d. Estimated Time of Departure (ETD) Date/Time.

4. Vessel information provided through SF Marine Exchange reports shall be filtered based on vessels arriving/departing the Port of Oakland.
5. Each vessel name shall be a hyperlink.
6. If a User clicks on a vessel name, the User shall be taken to a new screen that identifies the location of that particular vessel on a map.
7. The Alerts section shall display the same alerts that are listed under the Vessel Operations section of the Alerts Screen.
8. The requirements for Vessel Operations alerts follow the ones listed in Article 2.2F of this Section and are not repeated in this Article.
9. The following requirements shall be implemented in Phase 2:
   a. The Vessels Information section shall display the additional sortable column(s):
      1) Earliest Receiving Date (ERD) Date/Time.
      2) Cutoff Date/Time.

C. Traffic & Cameras:

1. Data used to generate the information on the Traffic & Cameras module screen shall be pulled from the ATMS and NOAA.
    a. If the GoPort App is deployed prior to the ATMS, then regional CMS messages and freeway information and alerts shall be pulled from Caltrans. After the deployment of the ATMS, the System Integrator will transition the data source from Caltrans to the ATMS.

2. The Traffic & Cameras module screen shall display the following sections:
    a. Road Conditions & Cameras.
    b. Weather.
    c. Alerts.

3. Road Conditions & Cameras Section:
    a. A Road Conditions heat map shall be pulled directly from the ATMS system.
        1) If the GoPort App is deployed prior to the ATMS, then the heat map shall be pulled from MTC's 511 system. After the deployment of the ATMS, the System Integrator will transition the data source from MTC to the ATMS.
    b. The Road Conditions heat map shall be refreshed every 15 seconds.
    c. The User shall be able to zoom in on the Road Conditions heat map to see local traffic conditions and zoom out to see regional traffic conditions.
    d. Users shall be able to search for routing instructions between two locations.
    e. Users shall be able to display the following map layers:
        1) Cameras.
        2) Message Signs.
        3) Chain Controls.
        4) Snow Plows.
    f. Each map layer will use appropriate icons to distinguish between the various types of information displayed.
    g. The User shall be able to tap on a specific camera icon and be taken to a new screen with refreshed snapshots of the camera view.
        1) These functional specifications follow the same as listed in Article 2.3A of this Section.

4. Weather Section:
    a. The Weather section shall display an eight-day weather forecast pulled from NOAA.
        1) The default location shall be set to Oakland, California.
        2) Users shall be able to enter any location into a search bar for weather forecasts.

5. Alerts Section:
    a. The Alerts section shall include six (6) sub-sections:
        1) Port Area Message Signs.
        2) Port Area Construction & Events.
        3) Port Area Incidents & Closures.
        4) Regional Message Signs.
        5) Regional Construction & Events.
        6) Regional Incidents & Closures.
    b. Port Area Message Signs and Regional Message Signs sub-sections shall display the following columns:

1) Message.
2) Last Updated (sortable column).
3) Sign Location (sortable column).

c. Port Area Construction & Events and Regional Construction & Events sub-sections shall display the following columns:
1) Location (sortable column) – This column shall be labeled "Route" in the regional sub-section.
2) Description.
3) Last Updated (sortable column).

d. It is acceptable to have duplicate messages in the Port and Regional sub-sections.

e. Each CMS, construction & events, incidents & closures shall be mapped to one of the regional corridors listed on the Settings Screen.
1) Only CMSs, construction & events, incidents & closures associated with regional corridors selected in the User's profile shall be displayed on this Screen.

f. Alerts on this screen shall be refreshed every 15 seconds.

g. The requirements for Traffic & Camera alerts shall also follow the ones listed in Article 2.2F of this Section.

D. Security & Safety:

1. Data used to generate the information on the Security & Safety module screen shall be pulled from the ATMS, and the Port Registry System or eModal (or an equivalent container information service).

2. The Security & Safety module screen shall include resources that have the ability to improve the safety of trucking operator trips, with the following sections:
a. Truck Routes.
b. Oversize/Overweight (OS/OW) Information.
c. Compliance.
d. Alerts.

3. The Truck Routes section shall display a map indicating permitted or prohibited truck routes.

4. The OS/OW Information section shall display the following hyperlinks:
a. Caltrans Legal Truck Size & Weight.
b. Caltrans Single Trip, Annual Trip permit applications.

5. The Compliance section shall display various Port-required certifications (e.g., SCAC, STEP certification, CARB compliance) that are three (3) months from expiring.
a. Compliance expiration dates shall be pulled from the Port's Truck Registry system.

6. The Alerts section shall include sub-sections for:
a. Maritime Security.
b. Public Safety.
c. Compliance.

7. The non-recurring Maritime Security and Public Safety alerts entered by TMC/EOC Operators and System Administrators through the ATMS shall be disseminated through the GoPort App.
a. Currently there are no plans to forward these alert types to the City of Oakland or Caltrans.

8. The requirements for Security & Safety alerts follow the ones listed in Article 2.2F of this Section and are not repeated in this article.
9. The following requirements shall be implemented in Phase 3:
    a. A sub-section shall be added in the Alerts section for Weigh-in-Motion.

E. Rail Crossings:
1. The Rail Crossings module and all requirements in Article 2.3E of this Section shall be implemented in Phase 2.
2. Data used to generate the information on the Rail Crossings module screen shall be pulled from the ATMS.
3. The Rail Crossing module screen shall include the following sections:
    a. Active Rail Crossings.
    b. Alerts.

4. All active at-grade rail crossings on Port property shall be displayed under the Active Rail Crossing section.
    a. Active at-grade crossings with no train crossing detection shall be included on the list, but with a static message indicating that no status is available.

5. Open rail crossings shall be indicated with a green circle and an "OPEN" status.
6. Blocked rail crossings shall be indicated with a red circle and a "Blocked since date/time" status.
    a. If the scheduled/anticipated time to reopen is known, that information shall be displayed as well.

7. Rail crossing data on this screen shall be refreshed every 15 seconds.
8. A non-recurring alert shall be issued when the train detection system detects the blocking of an active rail crossing.
9. A non-recurring alert shall be issued when the train detection system indicates that a blocked rail crossing has been cleared.
10. The requirements for Rail Crossing alerts follow the ones listed in Article 2.2F of this Section and are not repeated in this Article.

F. Reservations:

1. The Reservations module screen shall include the following sections:
    a. Marine Terminals.
    b. Alerts.

2. For Registered Users who have saved their eModal (or an equivalent container information service) login information on the Settings Screen, the following information shall be pulled from the eModal platform:
    a. Import availability (status, holds, last free day).
    b. Booking balances.
    c. Alerts that Port of Oakland marine terminals share through eModal (or an equivalent container information service).
    d. Appointment times, location and details

3. The requirements for Reservation alerts follow the ones listed in Article 2.2F of this Section and are not repeated in this Article.
4. The following requirements shall be implemented in Phase 2:

a. The Reservations screen shall include the following additional sections:
    1) Parking.
b. The Parking section of the Reservations module shall operate as an interface that displays data from the SPS and collects data from Registered Users to pass to the SPS.
c. The Parking section shall provide an interface for Users to access and query parking stall inventory to identify the availability of stalls.
    1) Users shall be able to query by:
        a) Lot location and map.
        b) Stall configuration and size.
        c) Stall type (daily, monthly).
        d) Date and time range of availability.
        e) Types of power availability.
        f) Any combination of the parameters.
    2) Users shall be able to see all available stalls across all lots.
d. The Parking section shall provide an interface for Users to view search results of available stalls that match the query parameter(s).
    1) The response shall be presented in graphical and list form.
e. If there are no available stalls in an LMC's monthly leased spots, the Registered User shall have the ability to be added to a Wait List.
    1) Daily parking stalls shall be reserved on a first-come-first-serve basis.
f. The Parking section shall provide an interface for Registered Users to reserve one or more parking stall(s) selected.
    1) Registered Users shall have the option to assign an authorized (permitted to utilize an LMC's monthly leased parking stalls) driver to a parking stall reservation.
g. The Parking section shall provide an interface for Registered Users to cancel parking stall reservations.
h. The Parking section shall provide an interface for Registered Users to modify parking stall reservations.
i. Parking reservation payments shall be paid in full at the time of the reservation.
j. The Parking section shall provide an interface for Registered Users to make parking payments using a credit card, eModal (or an equivalent container information service) account or LMC's SCAC code.
    1) Driver Registered Users who reserve parking stalls for themselves (not on behalf of a LMC) shall pay with their own credit card.
    2) Registered Users who reserve parking stalls on behalf of an LMC and appear on the LMC's approved list to use their payment account, shall have additional payment options available to them (LMC's eModal or an equivalent container information service account or LMC's SCAC code).
    3) If a driver or truck is not on the LMC's approved list to use their payment account, the driver shall use their own credit card for the payment.
k. The Parking section shall provide an interface for Registered Users to receive a confirmation receipt that the reservation was successful.
    1) The reservation confirmation receipt shall display:
        a) Confirmation ID.
        b) Confirmation date.
        c) Reservation date and time.
        d) LMC account number.
        e) Stall location.
        f) Type of power availability.

l. The Parking section shall provide the ability for Registered Users to import confirmed reservations to one of several calendar applications (i.e.., Google, Outlook).

m. The Parking section shall provide an interface for Registered Users to retrieve information of past and upcoming reservations. The reservation history shall display the following information:
   1) Reservation date and time.
   2) Stall location.
   3) LMC account number (entity billed to).

G. Payments:

1. The Payments module and all requirements in Article 2.3F of this Section shall be implemented in Phase 2.
2. The Payments screen shall include the following sections:
   a. Parking.
   b. Alerts.

3. The Parking section of the Payments module shall operate as an interface that displays data from the SPS and collects data from Registered Users to pass to the SPS.
4. The Parking section shall provide an interface for Registered Users to view their balance due summary.
   a. The balance due summary shall display the following information for each unpaid item:
      1) Confirmation ID.
      2) Reservation date(s) and time.
      3) Stall location.
      4) Type of power availability
      5) LMC account number (entity billed to).
      6) Balance due.
   b. The balance due summary shall display the total due amount for all unpaid items.

5. The Parking section shall provide an interface for Registered Users to make payments on individual invoices, or on all fees due.
   a. Registered Users shall be allowed to make payments using a credit card, eModal (or an equivalent container information service) account or LMC's SCAC code.

6. The Parking section shall provide an interface for Registered Users to view their payment receipt after making a payment.
   a. The parking receipt shall display the following information:
      1) Confirmation ID.
      2) Confirmation date.
      3) Billing entity (Driver or LMC).
      4) Stall location.
      5) Type of power availability.
      6) Reservation date.
      7) Amount paid.
      8) Balance due.

7. The Parking section shall provide an interface for Registered Users to view any refunds issued to their account.
8. The Parking section shall provide an interface to allow Registered Users to view their payment history.
    a. The payment history shall display the following information:
        1) Stall location.
        2) Stall type.
        3) Payment date.
        4) Payment amount.

9. The requirements for Payments alerts follow the ones listed in Article 2.2F of this Section and are not repeated in this Article.

H. Driver & Truck Management

1. The Driver & Truck Management module and all requirements in Article 2.3H of this Section shall be implemented in Phase 2.
2. Data used to generate the information on the Driver & Truck Management module screen shall be pulled from the Port Registry System or eModal (or an equivalent container information service) and the SPS.
3. The Driver & Truck Management module screen shall include the following sections:
    a. Manage Drivers.
    b. Manage Trucks.
    c. Alerts.

4. The Driver & Truck Management module shall pull driver and truck information from the eModal (or an equivalent container information service) system.
5. The Driver & Truck Management module shall operate as an interface that collects data from Registered Users to pass to the SPS.
6. The Driver & Truck Management module shall allow LMC Registered Users to indicate drivers and trucks that are allowed to use their parking account.
    a. It is possible that drivers and/or trucks that are employed by an LMC is not permitted to use their leased parking stalls.

7. The Driver & Truck Management module shall track the date/timestamp of changes made to driver and truck inventory.
8. LMC Registered Users shall be able to search for drivers by commercial driver's license number or view all LMC drivers.
9. LMC Registered Users shall be able to view the following attributes of each driver:
    a. Driver's first and last name.
    b. TWIC card number.
    c. TWIC expiration date.
    d. Commercial driver's license number.
    e. State of issuance.
    f. Expiration date.
    g. Status (active, revoked).
    h. Date of birth.
    i. Headshot photo of driver.

10. LMC Registered Users shall be able to search for trucks by license plate number or view all LMC trucks.

11. LMC Registered Users shall be able to view the following attributes of each truck:
    a. VIN number.
    b. Make.
    c. Model year.
    d. License plate number.
    e. State of issuance.
    f. Registered owner.

12. The requirements for Driver & Truck Management alerts follow the ones listed in Article 2.2F of this Section and are not repeated in this article.

I. Container Release:

1. The Container Release module and all requirements in Article 2.3I of this Section shall be implemented in Phase 2.
2. The Container Release module shall operate as an interface that displays data from the SPS and collects data from Registered Users to pass to the SPS.
3. A Registered User shall have the ability to submit a request to release a container to another company (i.e., street turn).
    a. The request shall include:
        1) LMC permitting the release.
        2) LMC accepting the container.
        3) Container number.
        4) Marine terminal that needs to authorize the release.

4. The container release request shall be sent to the contacts on an email distribution list that includes:
    a. Marine terminal.
    b. Parking operator.

5. If the request is approved, the approved container release shall be forwarded to:
    a. LMC permitting the release.
    b. LMC accepting the container.
    c. Marine terminal.
    d. Parking operator.

6. The parking operator shall have the ability to indicate which approved street turns have been completed.
7. The requirements for Container Release alerts follow the ones listed in Article 2.2F of this Section and are not repeated in this Article.

## 2.4 SYSTEM REQUIREMENTS / NON-FUNCTIONAL REQUIREMENTS

A. Look and Feel:

1. The GoPort App shall have a consistent look and feel with other Port apps and website.
2. The GoPort App shall be branded with the Port and ACTC names and logos.
3. The GoPort App shall use terminology commonly utilized by the trucking industry.

B. Usability:

1. The GoPort App shall be capable of being used within a common standard Internet browser, tablet, or smartphone device, and not specific to any one browser or device.
2. The GoPort App shall have a straightforward and intuitive design that enables Port Community Users to make effective use of the app and website with no training.
3. The GoPort App shall utilize commonly understood icons and objects instead of text where feasible.
4. The GoPort App alerts shall be translated into Spanish and Punjabi, per the Port's driver workforce language demographics survey. Language used for alerts shall be configurable by user.
5. The GoPort mobile application shall be developed for both iOS and Android operating systems.
6. The GoPort App software shall be ADA compliant to the extent practical within the confines of the development and deployment environment, though not all application elements can be made accessible to all individuals (e.g., interactive maps cannot be made accessible to the visually impaired).

C. Capacity:

1. The GoPort App data warehouse repository shall be hosted on a commonly accepted relational database service in the cloud.
    a. The service selected shall provide the ability to dynamically increase the storage capacity as needed.

2. The GoPort App data warehouse repository shall initially be capable of storing up to 500 GB of data. Since most data sources are anticipated to consist of aggregate or processed data rather than raw data, this initial amount of storage should be sufficient well into the next phase of the GoPort Project.
3. The GoPort App software shall serve a minimum of 20,000 users.
4. The GoPort App shall support expandability for more users via hardware upgrades.

D. Response Time / Performance:

1. The GoPort App shall provide current information in real-time (i.e., data is no more than 10 minutes old), or as available from integrated data sources. This threshold criteria is required to hold true 90 percent of the time.
2. The GoPort App home page shall be accessed within 3 seconds. This threshold criteria is required to hold true 90 percent of the time.
3. The GoPort App login shall not exceed 10 seconds. This threshold criteria is required to hold true 90 percent of the time.
4. The GoPort App time for a user to load any view (except a map or camera view) shall not exceed 3 seconds. This threshold criteria is required to hold true 90 percent of the time.
5. The GoPort App view or refresh rate for the largest map shall not exceed 15 seconds. This threshold criteria is required to hold true 90 percent of the time.
6. The GoPort App view or refresh rate for a camera feed shall not exceed 15 seconds. This threshold criteria is required to hold true 90 percent of the time.
7. The GoPort App shall provide still camera images. This threshold criteria is required to hold true 90 percent of the time.
8. The GoPort App shall generate a user defined performance report within 15 seconds. This threshold criteria is required to hold true 90 percent of the time.

9. The GoPort App shall not let its performance and operation be impacted adversely by the malfunction, removal, or addition of interfaces. This threshold criteria is required to hold true 90 percent of the time.

E. Reliability and Availability:

1. The GoPort App shall be available to users 24 hours per day, 365 days per year, with 99.5 percent up time.
2. The GoPort App shall be reliable to industry standards and minimize system freezes, crashes, and failures.
3. The GoPort App shall have automated hourly database backups.
4. The GoPort App shall have minimal maintenance needs.

F. System Administration:

1. The GoPort App system shall only require a reboot when Operating System upgrades or modifications are created, or upgrades to executable applications are installed.
2. The system shall allow updates to the database without affecting users' session with the GoPort App or website.
3. The GoPort App shall not require a user to log off and log back on to view features that were added, modified, or deleted.
4. The GoPort App shall allow the System Administrator the ability to add, modify, and delete user accounts while maintaining historical information.
5. The GoPort App shall allow the System Administrator the ability to add, modify, and delete user passwords and privileges while maintaining historical information.
6. The GoPort App shall allow Registered Users the ability to create unique user accounts and passwords.
7. The GoPort App shall allow Registered Users the ability to change their passwords.

G. Security:

1. The GoPort App shall protect personal data from unauthorized access.
2. The GoPort App shall protect proprietary information from unauthorized use.
3. The GoPort App shall protect proprietary systems from unauthorized access.
4. The GoPort App shall encode/encrypt the user's password.
5. The GoPort App shall protect against unauthorized access through the following user roles:
    a. Port Community Guest Users.
    b. Port Community Driver Registered Users.
    c. Port Community LMC Registered Users.
    d. TMC/EOC Operators.
    e. System Administrators.

6. The GoPort App shall provide the capability for a System Administrator to manage user accounts.
7. The GoPort App shall adhere to Port specific policies.

H. Documentation:

1. The GoPort App shall include a User's Guide for Port Community and Guest users which shall include an overview of the app and website contents, its capabilities, and troubleshooting guidance.

2. The GoPort App shall include a TMC/EOC Operators and System Administrators manual which shall include information required to use, maintain, and update the system over time.

I. Training:

1. Two 90-minute outreach/training sessions shall be delivered to the PETF on how to get started with all the features of the GoPort App. Development of this training course shall involve the preparation of a training guide in PowerPoint format and YouTube video.
2. Two two-hour initial hands-on training sessions shall be delivered to the TMC/EOC Operators on how to use and manage the GoPort App. Development of this training course shall involve the preparation of a training guide in PowerPoint format.
3. A four-hour hands-on training session shall be delivered to the System Administrators covering both hardware and software.
4. A four-hour review session shall be delivered to TMC/EOC Operators and System Administrators at the end of the beta testing period and before public rollout to go over remaining questions.
5. Training shall take place at the Port's designated facilities.
6. The training presentations and material shall be in English.
7. Multiple sessions of each type of training shall be provided in order to accommodate those with schedule conflicts (e.g., shift workers).
8. Instruction shall cover equipment familiarization and systems operation. The minimum training is that which is necessary to bring those employees designated to the level of proficiency required for performing their respective duties.
9. The Contractor shall provide experienced and qualified instructors to conduct all training sessions. The Contractor is responsible for ensuring that the instructors teaching these courses are not only familiar with technical information but are able to utilize proper methods of instruction, training aids, audiovisuals and other materials to provide for effective training.
10. The Contractor is responsible for providing all training materials, all copies of training materials, training aids, audiovisual equipment and visual aids for the conduct of these courses.
11. All training materials are to become the property of the Port at the conclusion of training.
12. At the request of the Port, the Contractor shall provide additional training sessions at the contract price per session.
13. Training curricula shall meet all training requirements and indicate trainee prerequisite knowledge, course content, training time requirements, and who should attend.

J. Reporting:

1. The GoPort App shall prepare monthly performance reports based on operational performance measures obtained from the RFID system.

2. The GoPort App shall prepare monthly performance reports on payment and financial transactions.
3. The GoPort App shall prepare monthly mobile application and website statistics reports including:
    a. Unique visits to the website per day.
    b. Return visits to the website per day.
    c. Website page views per day.
    d. Concurrent users of the website at any time.
    e. Unique visits to the mobile application per day.

f. Concurrent users of the mobile application at any time.

4. Monthly performance reports shall be archived and available for review.
5. Performance reports shall have an easily readable format, and they shall be in printable format.
6. The GoPort App system shall be configurable by System Administrators and TMC/EOC operators to change the level of detail of each report in a customizable manner.

## 2.5 INTEGRATION AND DATA

A. External System Integration:

1. The GoPort App shall be capable of interfacing and sharing data to/from the SPS.
2. The GoPort App shall be capable of interfacing and obtaining data from the ATMS.
3. The GoPort App shall be capable of interfacing and obtaining data from eModal (or an equivalent container information service).
4. The GoPort App shall be capable of interfacing and obtaining data from the Port website and data warehouse.
5. The GoPort App shall be capable of interfacing and obtaining data from Caltrans (i.e., QuickMap, etc.).
6. The GoPort App shall be capable of interfacing and obtaining data from the City of Oakland.
7. The GoPort App shall be capable of interfacing and obtaining data from MTC (i.e., 511.org, etc.).
8. The GoPort App shall be capable of interfacing and obtaining data from the Port marine terminals.
9. The GoPort App shall be capable of interfacing and obtaining data from NOAA.
10. The GoPort App shall be capable of interfacing and obtaining data from Google Maps (i.e., Waze, mapping, etc.).
11. The GoPort App shall be able to receive notifications from an external source about container pickup times -- eModal is currently available at the Port to provide this information, but other solutions may be proposed by the System Integrator. The GoPort System shall allow for future developers to configure the receipt of notifications if not available at the time of development.
12. In the event that the GoPort App is deployed prior to the ATMS, the GoPort App shall be capable of interfacing and obtaining data from SF Marine Exchange.
13. In the event that the GoPort App is deployed prior to the ATMS, the GoPort App shall be capable of interfacing and obtaining data from the RFID system and/or equipment.
14. In the event that the GoPort App is deployed prior to the ATMS, the GoPort App shall be capable of interfacing and obtaining data from the CCTV system.
15. The external system integration shall provide, at a minimum, the ability to generate an XML formatted file for exporting to other external stakeholders.
16. The external system integration shall be able to receive XML formatted files from other external systems for integration into the system.
17. The external system integration shall log an event message to the alarm and event logger whenever a file is imported or exported. The message shall contain the date, time, operator name, file information, and action taken.
18. The GoPort App system shall make use of existing communications infrastructure and standards.

B. Data Hosting:

1. The GoPort App system shall be capable of processing all data/information collected from the ATMS, other GoPort subsystems, and GoPort data sources.
2. The GoPort App system shall use a secure and reliable data host server, which the Port shall agree upon.
3. The GoPort App system shall have a fallback data host server, and provide a comprehensive data archive, backup, and recovery plan and the equipment and systems necessary to implement the plan.

C. Data Archiving:

1. The GoPort App system shall archive three (3) months of raw data collected from external systems or from external data sources.
2. The GoPort App system shall archive all monthly summary reports generated by external systems, from external data sources, and generated by the GoPort App system indefinitely.
3. Data stored in the GoPort App system shall be available for at least three (3) years for data reporting and analysis.
4. The GoPort App system shall include the date and timestamp when the data was collected and archived.
5. The GoPort App system shall limit access to the archiving and reporting module by user and group-level security to ensure trusted access and in compliance with the Port's privacy policy.

D. Data Reporting:

1. The GoPort App system shall provide for automated logging and reports by TMC/EOC Operators and System Administrators.
2. The GoPort App system shall receive equipment health data from external systems, which shall be used to display appropriate messages to the public indicating if/when an external system is down.

E. Data Sharing:

1. The Contractor shall develop an Application Programming Interface (API) in XML format that allows software from public agencies or private companies to retrieve data from the GoPort App.

## 2.6 SYSTEM CONFIGURATIONS

A. System Integration

1. The GoPort App system proposed integrates external system functionality into one solution. The GoPort App system shall be able to integrate all of the external system functionalities into one system.
2. The GoPort App shall establish a baseline configuration for all software and hardware utilized. The configuration baseline defines a basis for further system life cycle process activity and allow reference to, control of, and traceability among configuration items and to requirements. It serves as the common reference that all system development activity is built on and dictates to the development team the changes that are to be implemented.

3. The baseline configuration shall allow the integrated systems to work as defined throughout the requirements. The baseline configuration shall be reviewed and approved and placed under control management, after which any changes in the baseline should be formally documented and approved. New updates or builds shall have a unique release label.
4. Changes to the configuration baseline can originate as enhancements to existing functionality, hardware problem reports, software problem reports, or notifications of necessary hardware or software upgrades and/or patches that may impact the GoPort App system. Before a change in configuration is implemented in the system, test results need to be submitted to the Alameda CTC for review and acceptance. The Contractor shall ensure all functional requirements are met and have been adequately tested.
5. Changes to the baseline configuration shall only be applied after an evaluation of the effect of the change is performed in advance and a recovery strategy to restore the system to pre-change condition is clearly identified. The test results shall be provided to the Alameda CTC a week prior to implementation.
6. Software updates shall follow version control. New software updates and versions shall only be implemented after being tested and validated by the developer; reported to the Alameda CTC; and accepted by the Alameda CTC. Software updates shall be accompanied with a report describing changes been made, and functionality changes, if any.
7. Any hardware equipment being installed shall have a consistent configuration across equipment type. New equipment shall have the same configuration before being installed, to ensure a consistent functionality across equipment.
8. A hardware inventory shall be made of any new equipment, providing unique identification numbers to all equipment used. The identification shall follow the Alameda CTC's guidelines and direction.

B. Data Integration:

1. All software shall use the Microsoft SQL server relational database management systems, for consistency with the overall software environment at the Alameda CTC TMC/EOC system.
2. All software shall be time synchronized and use a consistent time reference. The Contractor shall provide specifications for the archival database to hold a minimum of five (5) years of data based on the Contractor estimated space requirements.
3. The configuration of the GoPort App database shall be consistent across GoPort App users. Data utilized or created by the GoPort App shall be accessible to GoPort App users on a permissions-based system.

C. Software Change Control:

1. The Contractor shall develop documentation for any software change or update released. For each given software change, all software change documentation and supporting materials – from the Problem/Improvement Report Form to the Release Note – is catalogued and organized for easy retrieval and auditing.
2. The Contractor shall develop Problem/Improvement Report Forms. This form should describe the problem or improvement needed for the software element, and define and document the steps taken to address the software element.
3. New versions of software should be stored as a separate version in a Configuration Management (CM) Library. The changes to the code should be identified in the relevant code headers, and also in any available comment fields in the CM Library.

4. Test and verification activities should match the extent of the changes. All code should be tested, and all design and documentation changes t should also be reviewed, and be subject to similar quality control measures as for an original development. The impact of the changes on other areas of the system should be assessed.
5. Completed changes will be incorporated into a new release of the software. The release may include other changes as well, or may just include the changes required by the one Problem Report Form. The release is tracked as a Release Note using a unique release number. This process is managed through the following steps:
    a. A Controller schedules the fix so that it is included in a controlled release of the revised system. This may be a matter of hours if the fix is an urgent bug-fix to keep the system running, or it may not occur for a number of weeks.
    b. The Contractor shall address all fixes logged in by Controllers. The Contractor should record all release details on the Release Note. The Release Number should also be recorded on the original Problem Report Form.
    c. The Contractor shall arrange for the fix to be delivered and installed across the entire system.
    d. Once the Port of Oakland has expressed satisfaction about the correctness of the fix, the releaser signs the Release Note and files it.

## 2.7 SUPPORTING HARDWARE

### A. GOPORT SERVER

1. The GoPort server shall:
    a. Provide processing capacity that meets or exceeds the capacity necessary for all functionalities described within this specification for software.
    b. Meet or exceed the reliability parameters described within this specification for software.
    c. Be housed physically within the Port's facilities, at a location that is selected by the Port or hosted using a cloud-based solution.
        1) If the Port decides to store GoPort App system data in-house instead of in the cloud, all servers and associated racks and other hardware shall be installed at designated locations as per the Port's explicit instruction.
    d. Be capable of regular backup transfers that can be customized by the Port.
    e. Be connected to the Port's designated Disaster Recovery site, as defined by the Port.
    f. Be compatible with all other IT assets that are required in order for the server to operate properly.
        1) IT assets that require upgrade in order to be compatible with the GoPort server shall be paid as part of this Specification.
    g. Be physically expandable to add future capacity and storage.
    h. Be capable of successfully transferring data to a storage device for long-term reporting.
        1) The Port may specify a preferred existing data storage site in lieu of creating new storage on the GoPort server.
    i. Consider the following minimum hardware concept requirements:
        1) 2400MT/s RDIMMs Memory Slots.
        2) Dual, Redundant Power Supplies.
        3) High-speed network data card.
        4) Modular design for easy part replacement.
        5) Properly sized uninterruptible power supply (UPS) units.

6) Monitor and printer.

2. The GoPort server should consider the following hardware requirements:
   a. Rack Server Configuration.
   b. 2 Intel Xeon E5-2620 v4, 2.1 GHz, 20M Cache, 8.0 GT/s QPI, Turbo, HT, 8C/16T (85W) Max, Memory 2133MHz.
   c. 2 CPU Standard Processor Thermal Configuration.
   d. 2400MT/s RDIMMs Memory.
   e. PCIe Riser with:
      1) One x16 PCIe Gen 3 FH slot.
      2) One x16 PCIe Gen3 LP slot.
   f. 32GB RDIMM, 2400MT/s, Dual Rank, x4 Data Width Memory Capacity.
   g. RAID 5 Configuration.
   h. 1 TB 7.2k RPM SATA 6Gbps 2.5-in. Hot-Plug Hard Drive.
   i. On-Board Broadcom 5720 Quad Port 1Gb LOM Network Card.
   j. Internal SD Module.
   k. Internal Optical DVD Drive.
   l. Performance BIOS Settings for Power Management.
   m. Standard North America 10-ft Power Cord.
   n. Dual, Hot-Plug Redundant Power Supply (1+1).
   o. Windows Server 2016 Operating System, Factory Installed.
   p. Microsoft SQL Server 2016, Standard, OEM.

3. Contractor is ultimately responsible for procuring an GoPort server that allows the GoPort software to meet the minimum performance requirements and functions.
   a. Shop drawing should include a manufacturer's or contractor's certification that the server meets the requirements of the GoPort software.
   b. Necessary enhancements to modify the server after procurement to meet these requirements shall be documented to the Alameda CTC and paid for as part of this Specification.

4. GoPort Server shall be reviewed while in operation by the Port in order to determine acceptance. Contractor shall submit a testing plan and approval checklist for Port review and approval prior to commencement of hardware testing.

B. IT NETWORK

1. Contractor shall review the Port's IT network prior to installation in order to verify that the proper communications channels can be established between the GoPort server and users.
2. Contractor shall submit written requests to review IT architecture in person to the Alameda CTC at least 15 business days prior to the proposed visit, unless otherwise allowed.

## PART 3 - EXECUTION

### 3.1 IMPLEMENTATION

A. The Contractor shall consider the following Project stages for implementation of the GoPort App Project:

1. System Design Review.

2. Functionality Acceptance Test.
3. Training.
4. Installation.
5. System Acceptance Test.
6. Operability Period Test.
7. Maintenance and Operations Support.

B. All submittals shall be provided in electronic format as well as hardcopy. File formats for electronic copies shall be subject to Port's approval. Current version, industry-prevalent software shall be utilized for preparing all submittals.

C. As part of the System Design phase, the Contractor shall identify any risks or issues that may arise related to existing conditions at Port and regional facilities. Status of risks identified and documentation of site visits shall be provided in the monthly progress reports submitted by the Contractor.

D. The Contractor shall only proceed from one phase of the Project to the next following written approval from the Alameda CTC.

E. Tests will take place at the Port's facilities, following test procedures developed by the Contractor to test the GoPort App functional requirements. Test plans shall be submitted to the Alameda CTC within minimum 21 days prior to the planned start of testing. Each test plan shall include the following elements:

1. A statement of the purpose of the tests.
2. The location, date(s) and time(s) tests will be performed.
3. Staff required to perform the test.
4. If applicable, the quantity of units to be tested.
5. The test equipment to be used, identified by manufacturer and model number.
6. A step by step description of the procedure to be performed.
7. Specific pass/fail criteria for each test.
8. A sample of the form(s) to be used to record test data.

F. Each test form shall include the following information:

1. Test title.
2. A table to record inspections performed for each functionality tested.
3. An indication that the functionality has passed or failed each individual test.
4. A line for signature of the person performing the test and date.
5. A line for signature of the Project Manager and date.
6. A line for signature of Port representative witnessing the test.
7. Configuration of the software tested.

G. Testing shall not commence until the plans have been approved by the Alameda CTC. Test plans approval will be based on the Alameda CTC validation that they will collectively serve to fully demonstrate all requirements.

H. Upon completion of any test, the Contractor shall prepare and submit within 10 days, a report summarizing the results with relevant test records and any actions required by the Contractor or the Alameda CTC. One original and electronic copy of the test results shall be submitted. The

original of the test results shall contain the original test forms filled out by the testers performing the tests and original signatures. Each set of test results shall include the following information:

1. The complete test procedures used.
2. The completed, signed test forms.
3. If applicable, summary of the test indicating features and functionality tested and a statement of the remedy to be applied for failed tests.

I. Test failures, system defects, system errors or missing functionality shall be recorded by the Contractor and assigned a "Defect Severity" rating as follows:

1. Severity 1: Required functionality is substantially not available; normal in-service operation of the device or system cannot be maintained.
2. Severity 2: Functionality is substantially available however one or more sub-functions are not operating as specified; full functionality is available but performance is not within specifications. Normal in-service operation can be maintained via workload.
3. Severity 3: Minor software defect or usability problem for which there is a fix or workaround.

J. All Severity 1 and 2 defects shall be corrected prior to completion of the stage of testing where they were identified. Test results for that stage shall not be accepted until such time as the Contractor demonstrates that all Severity 1 and 2 defects have been resolved or tested.

K. Severity 3 defects may be carried forward into software or system modifications in the next stage of the Project, and shall be demonstrated to be corrected in the next planned testing stage.

L. Factory Acceptance Testing (FAT) shall be performed to ensure that the supplied and developed components meet all functional requirements and specifications.

1. FAT shall be performed using the final hosted environment.
2. Tests shall be performed at the Port or the Contractor's manufacturing or development site.

M. System Acceptance Testing (SAT) can only be initiated once all of the system elements have been installed and configured and all pre-installation and installation tests have been successfully completed.

1. The SAT looks at the entire system, and tests are completed to ensure that the overall functional requirements are met.
2. The SAT is typically done from the central system software out to each device, and is also known as an end-to-end test.
3. Where software interfaces with other software, this interface shall be tested through the SAT for each piece of software.

N. The Operability Period Testing (OPT) is a 30-day performance test initiated once the SAT has been completed.

1. Through the OPT, the system is tested under full operations with full scale deployment to ensure that the performance requirements are met, and to measure the system reliability and availability.
2. System failures will result in restart of the OPT.

O. The Contractor shall perform all testing so as to satisfy the objectives of each testing stage as per the Alameda CTC's approved test plan.

## 3.2 INSTALLATION

A. The installation plan and installation procedures shall be submitted to the Alameda CTC for approval at least 30 days prior to installation for review and commenting.

1. The installation plan shall include Product Submittals for each major piece of software that the Contractor intends to furnish.
2. Each submittal shall contain sufficient information to determine that the system component complies with the Requirements.
3. Actual values of all specified parameters shall be listed; a simple statement that the product complies will not be sufficient.
4. All closely related products shall be submitted as a single package.

B. Port's representatives shall be present during the onsite installation to monitor quality control of the installation process.

C. The Contractor shall be responsible for the installation, local configuration, network configuration, commissioning, and testing of all central computer system equipment at the hosting facility.

D. Project Team:

1. The scope, duration and size of this Project require the Contractor to create an effective Project Management team to ensure the success of the work. All key Project team members shall remain on the Project until completion of the Project. The Project team shall include at least one individual for each of the following positions:
   a. Project Manager.
   b. Software Architect.
   c. System Analyst.
   d. System Engineer.
   e. Front-end Developer.
   f. Back-end Developer.
   g. System Administrator / Hosting Engineer.
   h. Test Engineer.

2. The Contractor shall assign a Project Manager, who shall be highly responsive to the needs of the GoPort App Project as required in these Requirements and subject to Port acceptance.
   a. The Project Manager shall coordinate design and engineering activities and provide a technical liaison to the Alameda CTC.
   b. This person shall be highly competent and fully qualified in all aspects of the GoPort App Project and must demonstrate experience in Project or technical management in at least 2 other projects involving similar software projects.
   c. The Project Manager shall be identified to the Alameda CTC in the proposal.

3. The Project Manager shall have the contracting authority to issue and approve purchase orders and to bind the Contractor contractually.

a. The Project Manager shall have the authority to assign and schedule Contractor personnel to perform all of the Work required by these Requirements, and act as Contractor's representative for dispute resolution.
b. The Project Manager shall provide a single point of contact for the Alameda CTC to resolve all issues related to the GoPort App Project.
c. The Project Manager shall be responsible for directing all subcontractors' designs and work.
d. The Project Manager shall provide weekly Project status reports to the Alameda CTC staff and hold monthly status meeting with Port key staff.

4. The Project Manager shall have a full and complete understanding of the GoPort App Requirements and the Alameda CTC and stakeholder needs to provide adequate direction for coordination of work.
   a. The Project Manager shall have at least five (5) years of experience in the implementation and/or management of software projects including website and app components.
   b. The Alameda CTC shall be the sole determinant of the suitability of the proposed Project Manager's qualifications.
   c. The Alameda CTC reserves the right to have the Project Manager replaced if these qualifications are not met.
   d. The Project Manager shall respond promptly to any reasonable Port request.
   e. Coverage of this requirement by any alternates shall be subject to approval by the Alameda CTC.
   f. The Project Manager shall be on-site during all significant Project events, as necessary to facilitate meetings, Project activities, and information flow between the Contractor and Port, and as requested by the Alameda CTC.

5. The Software Architect shall be identified in the proposal and shall be available to the Project within seven (7) days after NTP.
   a. The Software Architect shall act as a technical resource for coordinating all system design and implementation issues.
   b. The Software Architect shall check each technical submittal prior to its being sent to the Alameda CTC for approval.
   c. The Software Architect shall check any installations to assure quality.

6. The Software Architect shall have a complete understanding of the technical requirements of the Requirements and site conditions sufficiently to provide design direction and to determine compliance of the Contractor's design submittals and work.
   a. The Software Architect shall be experienced in software development including website and app components.
   b. The Software Architect shall have a minimum of five (5) years of experience in coordinating software development and administrative support activities.
   c. The Alameda CTC shall be the sole determinant of the suitability of the proposed Software Architect's qualifications.
   d. The Alameda CTC reserves the right to have the Software Architect replaced if these qualifications are not met.

7. The Software Architect shall be on-site during all significant Project events, as necessary to facilitate meetings, Project activities, and information flow between the Contractor and the Alameda CTC, and as requested by the Alameda CTC.

PART 4 - LIST OF ACRONYMS AND ABBREVIATIONS

*Table 4*

| Term | Definition |
|---|---|
| ATMS | Advanced Traffic Management System |
| ACTC | Alameda County Transportation Commission |
| ADA | Americans with Disabilities Act |
| API | Application Programming Interface |
| BCO | Beneficial Cargo Owners |
| CAC | Concept of Operations Advisory Committee |
| Caltrans | California Department of Transportation |
| CARB | California Air Resources Board |
| CCTV | Closed-circuit Television |
| CHP | California Highway Patrol |
| CM | Configuration Management |
| CMS | Changeable Message Signs |
| CSV | Comma Separated Value |
| EOC | Emergency Operations Center |
| ERD | Earliest Receiving Date |
| ETA | Estimated Time of Arrival |
| ETD | Estimated Time of Departure |
| FAQ | Frequently Asked Question |
| FAT | Factory Acceptance Testing |
| FITS | Freight Intelligent Transportation System |
| GB | Gigabyte |
| GDPR | General Data Protection Regulation |
| GoPort | GoPort App |
| IP | Internet Protocol |
| IT | Information Technology |
| ITS | Intelligent Transportation System |
| LMC | Licensed Motor Carrier |
| MTC | Metropolitan Transportation Commission |
| NOAA | National Oceanic and Atmospheric Administration |
| NTP | Notice to Proceed |
| NVOCC | Non-Vessel Operating Common Carriers |
| OPT | Operability Period Testing |
| OS/OW | Oversize/Overweight |
| PDF | Portable Document Format |
| PETF | Port Efficiency Task Force |
| Port | Port of Oakland |
| QA | Quality Assurance |

| | |
|---|---|
| QC | Quality Control |
| RAID | Redundant Array of Independent Disks |
| RDIMM | Registered Dual In-Line Memory Module |
| RFID | Radio Frequency Identification |
| RPM | Revolutions Per Minute |
| SAT | System Acceptance Testing |
| SATA | Serial Advanced Technology Attachment |
| SCAC | Standard Carrier Alpha Code |
| SF | San Francisco |
| SMS | Short Message Service |
| SPS | Smart Parking System |
| SQL | Standardized Query Language |
| STEP | Secure Truck Enrollment Program |
| TB | Terabyte |
| TBD | To Be Determined |
| TMC | Traffic Management Center |
| TWIC | Transportation Worker Identification Credential |
| UPS | Uninterruptible Power Supply |
| URL | Uniform Resource Locator |
| VIN | Vehicle Identification Number |
| WIM | Weigh-in-Motion |
| XML | Extensible Markup Language |

END OF SECTION