THE PORT AUTHORITY OF NY & NJ

PROCUREMENT DEPARTMENT
ATTN: BID/PROPOSAL CUSTODIAN
TWO MONTGOMERY STREET, 3RD FLOOR
JERSEY CITY, NEW JERSEY 07302

REQUEST FOR PROPOSALS

ISSUE DATE: April 23, 2013

TITLE: **Aviation Application Management and Administration of Systems at John F. Kennedy, LaGuardia, and Newark Liberty International Airport**

RFP NO.: 33212

SUBMIT PROPOSALS NO LATER THAN THE DUE DATE AND TIME TO THE ABOVE ADDRESS

QUESTIONS DUE BY:	**APRIL 30, 2013**	**TIME:**	**2:00 P.M.**
PROPOSAL DUE DATE:	**JUNE 4, 2013**	**TIME:**	**2:00 P.M.**

CONTACT: JAMES SUMMERVILLE, PR. CONTRACTS SPECIALIST

PHONE: (201) 395-3454
FAX: (201) 395-3470
EMAIL: jsummerville@panynj.gov

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1. INFORMATION FOR PROPOSERS ON THIS REQUEST FOR PROPOSALS

A. General Information: The Port Authority of New York and New Jersey

The Port Authority of New York and New Jersey (the "Port Authority" or the "Authority") is an agency of the States of New York and New Jersey, created and existing by virtue of the Compact of April 30, 1921, made by and between the two States, and thereafter consented to by the Congress of the United States. It is charged with providing transportation, terminal and other facilities of trade and commerce within the Port District. The Port District comprises and area of about 1,500 square miles in both States, centering about New York Harbor. The Port District includes the Cities of New York and Yonkers in New York State, and the cities of Newark, Jersey City, Bayonne, Hoboken and Elizabeth in the State of New Jersey, and over 200 other municipalities, including all or part of seventeen counties, in the two States. The Port Authority manages and/or operates all of the region's major commercial airports (Newark Liberty International, John F. Kennedy International, Teterboro, LaGuardia and Stewart International Airports), marine terminals in both New Jersey and New York (Port Newark and Elizabeth, Howland Hook and Brooklyn Piers); and its interstate tunnels and bridges (the Lincoln and Holland Tunnels; the George Washington, Bayonne, and Goethals Bridges; and the Outerbridge Crossing), which are vital "Gateways to the Nation."

In addition, the Port Authority operates the Port Authority Bus Terminal in Manhattan, the largest facility of its kind in the world, and the George Washington Bridge and Journal Square Transportation Center bus stations. A key link in interstate commuter travel, the Port Authority also operates the Port Authority Trans-Hudson Corporation (PATH), a rapid rail transit system linking Newark, and the Jersey City and Hoboken waterfronts, with midtown and downtown Manhattan. A number of other key properties are managed by the agency including but not limited to a large satellite communications facility (the Teleport) in Staten Island, and a resource recovery co-generation plant in Newark. Prior to September 11, 2001, the Port Authority's headquarters were located in the World Trade Center, and that complex is still owned and being partially redeveloped by the Authority.

The Port Authority is hereby seeking proposals from qualified firms to provide on-site User Application Support and Application Management and on-site Administration Support of certain Systems at John F. Kennedy International ("JFK"), LaGuardia ("LGA") and Newark Liberty International ("EWR") Airports, as more fully described herein.

All services related to security systems supported hereunder are managed by the Authority's security personnel under the overall direction of the Chief Security Officer, and non-security systems supported hereunder are managed by the Authority's Aviation staff under the overall direction of the Director of Aviation.

B. Brief Summary of Scope of Work

The selected firm (Contractor) will provide on-site User Application Support and on-site Application Management and Administration Support of certain systems (provided by "application vendors") at the aforementioned airports. Specifically:

- User Application Support is required for the Airport Security Airside Access Control System (ASAAC), Airport Checkpoint Digital CCTV (ACDTV), and the Terminal Operations Management System (TOMS).

- Application Management and Administration Support is required for the Parking Revenue Control System (PRCS), Ground Transportation Information System (GTIS), Identity Management and Credentialing System (IMCS, when built) at JFK, LGA, and EWR, CrossMatch Fingerprint Workstations at JFK, LGA and EWR, MorphoCheck Handheld Terminal (HHT) at JFK, LGA and EWR, and the DataLink System at JFK.

As demonstrated in Attachment D (Description of Current Distributed Systems), these systems are divided into three categories or classes:

- Class 1, Distributed System: Defined as systems located at an airport with many end-of-line devices. The Contractor will provide application support, database support, systems administration, and user applications support. Distributed Systems include the PRCS, the GTIS, and the IMCS.

- Class 2, Database Systems: Defined as a system with connectivity to other systems. The Contractor will provide application support, database support, systems administration, and user application support. Database Systems include DataLink, CrossMatch, MorphoCheck Handheld Terminal.

- Class 3, User Application Support System: Defined as a system requiring support to the users of the application. User Application Support Systems include ASAAC, ACDTV, TOMS.

As more fully described in the Scope of Work (Attachment C), the Contractor shall provide personnel to perform, at minimum, the following functions for the classes of systems:

- User Application Support (Class 3).
    - Creating functional requirements to modify or enhance the system software, with such modification or enhancement being performed thereafter by the application vendors.
    - Application Support:
        - Security Systems (ASAAC);
        - CCTV Systems (ACDTV);
        - Terminal Operations Management System (TOMS).
- Business Application Administration & Analysis (Class 1 and Class 2):
    - Creating functional requirements or technical operational criteria to modify or enhance the system software, with such modification or enhancement being performed thereafter by the application vendor.
- Data Mining & Generate Reports (Class 1 and 2)
    - Data Analysis from Systems;
    - Generate Reports.
- Application Knowledge - Application configuration (Class 1 and Class 2).
- Application Monitoring (i.e. configuration, health Check, application database management) on the following Systems (Class 1 and Class 2):
    - Parking Revenue Control System (PRCS), Class 1;
    - Ground Transportation System (GTIS), Class 1;
    - Identity Management Credential System (IMCS), Class 1;
    - DataLink, Class 2;

    - CrossMatch, Class 2
    - MorphoCheck Handheld Terminal, Class 2.
- Application Administration / Programming and Application Database Management (Class 1 and Class 2):
    - Business Database Management – Advise, consult, populate, query, manage data rows/ columns.
- Training on Applications (limited end user training) (All Classes).
- Application Server Software Integration and Deployment (Class 1 and Class 2).
- Platform Migration (Class 1 and Class 2).
- WEB Application Programming and Application Programming (Class 1 and Class 2).
- Technology Consulting:
    - Future technologies and currently deployed technologies;
    - Expertise and experience to evaluate and consult on CCTV technology, camera placement, types of lenses, field of views, and surveillance analytics.
- Business Task Analyst (All Classes).

In addition, by the commencement of the Contract and at no expense to the Port Authority, the Contractor's employees, subcontractors, principals and concerned related parties must be able to pass a Criminal History Record Check by the Authority, as mandated by Title 49 of the Code of Federal Regulations (CFR), which contains the Transportation Security Administration's (TSA) rules for civil aviation security. The Contractor shall also be required to obtain and maintain, at no expense to the Port Authority, Security Identification Display Area (SIDA) Card and airfield driving privileges for all employees assigned to the Contract.

Furthermore, by the commencement of the Contract, the Contractor shall have obtained certification on the following systems, and shall provide proof thereof to the Port Authority: Verint CCTV System, Version 6.2 or above; and Lenel Access System 6.4 or above. At minimum, the Contractor shall maintain such levels of certification throughout the duration of the Contract.

C. Deadline for Receipt of Proposals

The due date specified on the cover page is the proposal Due Date. Closing of due date is 2:00 P.M., Eastern Standard Time (EST).

The Port Authority assumes no responsibility for delays caused by any delivery service.

D. Vendor Profile

To ensure maximum opportunities, it is vitally important that Proposers keep their vendor profiles up to date with an appropriate e-mail address, as this will enable their firm to receive timely notice of advertisements, reminders, solicitations and addenda. Proposers may update their vendor profile or register as a Port Authority Vendor by accessing the online registration system at https://panynjprocure.com/VenLogon.asp.

E. Submission of Proposals

One reproducible original (containing original signatures and clearly designated as such) and thirteen double-sided copies of the proposal must be submitted on or before the due date and time in accordance with the information on the cover page of this RFP and sent or delivered to the RFP Custodian at the address specified on the cover page. Each copy of the proposal as well as the parcel(s) used for shipping must be conspicuously marked with the Proposer's name and address as well as the Proposer's Vendor Number, if available. In addition, the outside of the package must clearly state the title of this RFP, the number of this RFP and the proposal Due Date. Failure to properly label proposal submissions may cause a delay in identification, misdirection or disqualification of proposal submissions.

It is necessary to carry valid photo identification when attempting to gain access into the building to hand-deliver proposals.

Consistent with environmentally preferable procurement practices, the Port Authority requests all documents submitted to be in a form that can be easily recycled (i.e., no plastic covers or binding) and to provide only supporting literature which directly relates to the proposal being submitted.

F. Communications Regarding this RFP

All communications concerning this RFP should be directed to the Contracts Specialist listed on the cover page. ALL QUESTIONS REGARDING THIS RFP SHOULD BE SUBMITTED TO THE CONTRACTS SPECIALIST AT THE EMAIL ADDRESS LISTED ON THE COVER PAGE NO LATER THAN 2:00 P.M. (EST) OF THE QUESTIONS DUE DATE.

Questions should be submitted in an MS Word attachment to the email, and in the following format:

RFP Section	RFP Page	Topic	Question

The Contracts Specialist is authorized only to direct the attention of prospective Proposers to various portions of this RFP so that they may read and interpret such portions themselves.

Neither the Contracts Specialist nor any other employee of the Port Authority is authorized to interpret the provisions of this RFP or give additional information as to its requirements. If interpretation or other information is required, it will be communicated to Proposers by written addenda and such writing shall form a part of this RFP.

G. Proposal Acceptance or Rejection

Acceptance shall be only by mailing to or delivering at the office designated by the Proposer in its proposal, a notice in writing signed by an authorized representative on behalf of the Port Authority specifically stating that the proposal is accepted or by execution of an agreement covering the subject matter of this RFP signed by authorized representatives of the Port Authority and the Proposer. No other act of the Port Authority, its Commissioners, officers, agents, representatives, or employees shall constitute acceptance of a proposal. Rejection of a proposal shall be only by either (a) a notice in writing specifically stating that the proposal is not accepted, signed by an authorized representative of the Port Authority and mailed to or delivered to the Proposer at the office designated in the proposal, or (b) omission of the Port Authority to accept the proposal within 180 days after the proposal Due Date.

No other act of the Port Authority, its Commissioners, officers, agents, representatives or employees shall constitute rejection of a proposal.

H. Union Jurisdiction

Proposers are advised to ascertain whether any union now represented or not represented at the facility will claim jurisdiction over any aspect of the operations to be performed hereunder and their attention is directed to the Section of this RFP entitled "Harmony" included in the "Standard Contract Terms and Conditions" hereunder.

I. City Payroll Tax

Respondents should be aware of the payroll tax imposed by the:

a. City of Newark, New Jersey for services performed in Newark, New Jersey;
b. City of New York, New York for services performed in New York, New York; and
c. City of Yonkers, New York for services performed in Yonkers, New York.
d. City of Newburgh, New York for services performed in Newburgh, New York and Town of New Windsor, New York for services performed in New Windsor, New York.
e. County of Bergen, New Jersey for services performed in Teterboro, and Moonachie New Jersey.

These taxes, if applicable, are the sole responsibility of the Contractor. Respondents should consult their tax advisors as to the effect, if any, of these taxes. The Port Authority provides this notice for informational purposes only and is not responsible for either the imposition or administration of such taxes. The Port Authority exemption set forth in the Paragraph entitled "Tax Exemptions" in the "General Contract Provisions" (Attachment B, Section 25) does not apply to these taxes.

J. Pre-proposal Meeting(s)/Site Inspection(s)

None.

K. Available Documents

None.

L. Aid to Proposers

None

M. Additional Proposer Information

Prospective Proposers are advised that additional vendor information, including, but not limited to forms, documents and other information, including M/WBE Participation Plan Submission Forms and protest procedures, may be found on the Port Authority website at:
http://www.panynj.gov/business-opportunities/become-vendor.html

N. Contractor Staff Background Screening

The Contractor awarded this contract will be required to have its staff, and any subcontractor's staff working under this Contract, authorize the Authority or its designee to perform background checks. Such authorization shall be in a form acceptable to the Authority. The Contractor (and subcontractor) may also be required to use an organization designated by the Authority to perform the background checks. The cost for said background checks for staff that pass and are granted a credential shall be reimbursable to the Contractor (and its subcontractors) as an out-of-pocket expense as provided herein. Staff that are rejected for a credential for any reason are not reimbursable.

As of January 29, 2007, the Secure Worker Access Consortium (S.W.A.C.) is the only Port Authority approved provider to be used to conduct background screening, except as otherwise required by federal law and/or regulation. Information about S.W.A.C., instructions, corporate enrollment, online applications, and location of processing centers can be found at http://www.secureworker.com, or S.W.A.C. may be contacted directly at (877)522-7922.

2. SCOPE OF WORK

The full Scope of Work is set forth in detail in Attachment C.

3. PROPOSER PREREQUISITES

Only Proposers who can demonstrate that they comply with the following should submit proposals as only proposals from such Proposers will be considered:

A. The Proposer shall have had at least five (5) years of continuous experience immediately prior to the date of the submission of its proposal in providing application management and administration services for the types of systems described herein to commercial and industrial accounts under contract. The Proposer may fulfill this prerequisite if it can demonstrate that the persons or entities owning and controlling the Proposer have had a cumulative total of at least the same number of years and type of direct continuous experience immediately prior to the submission of this proposal as is required of the Proposer, or has owned and controlled other entities which meet the requirement.

B. During the time period stated in (A) above, the Proposer shall demonstrate satisfactory performance of at least three (3) contracts for similar services of similar scope. At least one contract shall include the provision of user application management services for security CCTV systems or access control systems.

The Proposer shall use Attachment F (Proposer Prerequisite Reference Form) in demonstrating the foregoing prerequisites.

C. The Proposer shall demonstrate that it has earned gross revenues of at least $2,000,000 for the last fiscal or calendar year from the type of services or products described herein. The Proposer shall submit the information requested in Section 4, below, to demonstrate satisfaction of this prerequisite.

In the event a proposal is submitted by a joint venture the foregoing prerequisites will be considered with respect to such proposal as follows:

With respect to subparagraph (A) and (B) above, the prerequisite will be considered satisfied if the joint venture itself, or any of its participants individually, can meet the requirements. With respect to subparagraph (C), the gross income of the joint venture itself may meet the prerequisites or the gross income of the participants in the joint venture may be considered cumulatively to meet the prerequisite.

If the proposal is submitted by a common law joint venture, a joint venture that has not been established as a distinct legal entity, each participant of the joint venture shall be held jointly and severally liable and must individually execute and perform all acts required by this proposal. Documents signed by a common law joint venture, in connection with this proposal, shall include the names of all participants of the joint venture followed by the words "acting jointly and severally". All joint venture Proposers must provide documentation of their legal status.

All Proposers must include documentation that they meet the above prerequisites.
By furnishing this solicitation document to Proposers, the Port Authority has not made a determination that the Proposers have met the prerequisites or have otherwise been deemed qualified to perform the services. In addition, a determination that a Proposer has met the prerequisites is no assurance that it will be deemed qualified in connection with other proposal requirements included herein.

4. FINANCIAL INFORMATION

The Proposer will be required to demonstrate that it is financially capable of performing the contract resulting from this RFP ("Contract"). The determination of the Proposer's financial qualifications and ability to perform this Contract will be in the sole discretion of the Port Authority. The Proposer shall submit, with its proposal, the following:

A. (1) Certified financial statements, including applicable notes, reflecting the Proposer's assets, liabilities, net worth, revenues, expenses, profit or loss and cash flow for the most recent year or the Proposer's most recent fiscal year.

(2) Where the certified financial statements in (1) above are not available, then reviewed statements from an independent accountant setting forth the aforementioned information shall be provided.

Where the statements submitted pursuant to subparagraphs (1) and (2) aforementioned do not cover a period which includes a date not more than forty-five days prior to the proposal Due Date, then the Proposer shall also submit a statement in writing, signed by an executive officer or his/her designee, that the present financial condition of the Proposer is at least as good as that shown on the statements submitted.

B. A statement of work which the Proposer has on hand, including any work on which a bid and/or proposal has been submitted, containing a description of the work, the annual dollar value, the location by City and State, the current percentage of completion, the expected date for completion, and the name of an individual most familiar with the Proposer's work on these jobs.

C. The name and address of the Proposer's banking institution, chief banking representative handling the Proposer's account, the Proposer's Federal Employer Identification Number (i.e., the number assigned to firms by the Federal Government for tax purposes), the Proposer's Dun and Bradstreet number, if any, the name of any credit service to which the Proposer furnished information and the number, if any, assigned by such service to the Proposer's account.

5. EVALUATION CRITERIA AND RANKING

All proposals will be reviewed by the Port Authority to determine if they adhere to the format required in this RFP, if they contain all required submissions and if the Proposer meets the prerequisites required for submission of a proposal. For proposals meeting such requirements, the following criteria, set forth in order of importance, will be utilized in the evaluation of proposals. Note that criteria A and B are of equal importance.

A. Cost of proposal: The total estimated Contract price as submitted on the Cost proposal Form.

B. Work Approach: The demonstrated ability to provide the required services described in the Scope of Work (Attachment C), including the completeness of the services proposed; the ability to satisfy or exceed the requirements of the Service Levels; the quality of the technical approach to be used to ensure consistently high-quality services.

C. Management Approach and Experience: The Proposer's staffing capacity, financial stability, industry track record, and capability of managerial, technical and physical resources to deliver the required services over an extended period of time; the specific experience to manage business application administration components of a complex and large corporate environment comparable in size and technical architecture to that of the Port Authority's, which includes the level of staff experience and knowledge of the technology needed to support the Authority's systems administration requirements; the status of proposed staff's current certification on Verint CCTV System (Version 6.2 or above) and Lenel Access System (Version 6.4 or above); the Proposer's commitment to provide the requested services, to meet or exceed all requirements, and to develop and maintain a business alliance based on proposal and prior contract experience; the quality and effectiveness of the Proposer's M/WBE Plan and the extent to which it meets or exceeds Port Authority Standards.

   Moreover, consideration will be given to the degree of business risk assumed by the Port Authority. This will include but not be limited to the assessment of the impact resulting from the possible failure of the Contractor to perform under the terms and conditions of this Contract. As part of the evaluation, business risk will also be measured by the Port Authority's assessment of its ability to immediately replace the Contractor in a manner that maintains or improves the quality and continuity of the services required herein.

6. M/WBE SUBCONTRACTING PROVISIONS

The Port Authority has a long-standing practice of making its business opportunities available to Minority Business Enterprises (MBEs) and Women-Owned Businesses (WBEs) and has taken affirmative steps to encourage such firms to seek business opportunities with the Port Authority. The successful Proposer will use good faith efforts to provide for meaningful participation by the Port Authority certified M/WBEs as defined in this document, in the purchasing and subcontracting opportunities associated with this contract, including purchase of equipment, supplies and labor services.

Minority Business Enterprise (MBE) - shall mean a business entity which is at least 51% owned and controlled by one or more members of one or more minority groups, or, in the case of a publicly held corporation, at least 51% of the stock of which is owned by one or more minority groups, and whose management and daily business operations are controlled by one or more such individuals who are citizens or permanent resident aliens.

"Minority Group" means any of the following racial or ethnic groups:

a. Black persons having origins in any of the Black African racial groups not of Hispanic origin;

b. Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American culture or origin, regardless of race;

c. Asian and Pacific Islander persons having origins in any of the original peoples of the Far East, Southeast Asia, The Indian Subcontinent, or the Pacific Islands;

d. Native American or Alaskan native persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.

Women-Owned Business Enterprise (WBE) - shall mean a business enterprise which is at least 51% owned by one or more women, or, in the case of a publicly held corporation, at least 51% of the stock of which is owned by one or more women and whose management and daily business operations are controlled by one or more women who are citizens or permanent or resident aliens.

The Contractor shall use good faith efforts to achieve participation equivalent to 12% of the total Contract price for MBEs and 5% of the total Contract price for WBEs.

Good faith efforts to include participation by M/WBEs shall include, but not be limited to the following:

1) Dividing the services and materials to be procured into small portions where feasible;
2) Giving reasonable advance notice of specific subcontracting and purchasing opportunities to such firms as may be appropriate;
3) Soliciting services and materials from M/WBEs, which are certified by the Port Authority;
4) Ensuring that provision is made for timely progress payments to the M/WBEs and;
5) Observance of reasonable commercial standards of fair dealing in the respective trade or business.

Proposers are directed to use form PA3749B as the recording mechanism for the M/WBE participation Plan which may be downloaded at http://www.panynj.gov/business-opportunities/become-vendor.html

The M/WBE Plan submitted by the Contractor to the Port Authority shall contain, at a minimum, the following:

- Identification of M/WBE's: Provide the names and addresses of all M/WBEs included in the Plan. If none are identified, describe the process for selecting participant firms in order to achieve the good faith goals under this Contract.
- Level of Participation: Indicate the percentage of M/WBE participation expected to be achieved with the arrangement described in the Plan.
- Scope of Work: Describe the specific scope of work the M/WBE's will perform.
- Previous M/WBE Participation: Describe any previous or current M/WBE participation, which the Proposer has utilized in the performance of its contracts.

All M/WBE subcontractors listed on the M/WBE Participation Plan must be certified by the Port Authority in order for the Contractor to receive credit toward the M/WBE goals set forth in this Contract. Please go to http://www.panynj.gov/business-opportunities/supplier-diversity.html to search for M/WBEs by a particular commodity or service. The Port Authority makes no representation as to the financial responsibility of such firms or their ability to perform Work under this Contract.

Proposers shall include their M/WBE Participation Plan with their proposals, to be reviewed and approved by the Authority's Office of Business Diversity and Civil Rights (OBDCR).

Proposers may request a waiver of the M/WBE participation goals set forth in this Contract by providing with its proposal, information in accordance with this provision and the provision entitled "M/WBE Good Faith Participation" in the Standard Terms and Conditions of this Contract.

If the Contractor wishes to subcontract a portion of the Work through a firm not listed in the Directory, but which the Contractor believes should be eligible because it is (1) an M/WBE, as defined above and (2) competent to perform portions of the Work, the Contractor shall submit an M/WBE Uniform Certification Application to the Port Authority of New York and New Jersey, Office of Business Diversity and Civil Rights (OBDCR), 233 Park Avenue South, 4th Floor, New York, NY 10003. The application is available online at http://www.panynj.gov/business-opportunities/sd-become-certified.html. In addition, to update your certification file and to advise OBDCR of changes to any information, please email these changes to OBJOcert@panynj.gov . Credit toward applicable goals will be granted only to Port Authority certified vendors. For more information about M/WBE Programs, call (212) 435-7819.

7. PROPOSAL SUBMISSION REQUIREMENTS

In order to expedite the evaluation of proposals, the Proposer's response to this RFP shall follow the format and order of items, using the same paragraph identifiers, as set forth below.

A. Letter of Transmittal

The Proposer shall submit a letter on its letterhead, signed by an authorized representative, stating its experience and qualifications in meeting the requirements of this RFP. This letter shall include a statement on whether the Proposer is submitting a proposal as a single entity, a joint venture, or is partnering with another firm in a prime/subcontracting relationship. In all cases, information required for a single entity is required for each participant in a joint venture.

The Letter of Transmittal shall contain:

(1) Name and address of the Proposer and an original signature on the Letter of Transmittal by an authorized representative on behalf of the Proposer;

(2) Name(s), title(s) and telephone number(s) of the individual(s) who are authorize to negotiate and execute the Contract;

(3) Name, title and telephone number of a contact person to which the Port Authority can address questions or issues related to this RFP;

(4) Name and address of proposed subcontractors, if any;

(5) If a corporation: (a) a statement of the names and residences of its officers, and (b) a copy of its Certificate of Incorporation, with a written declaration signed by the secretary of the corporation, with the corporate seal affixed thereto, that the copy furnished is a true copy of the Certificate of Incorporation as of the date of the opening of the proposals;

If a partnership: a statement of the names and residences of its principal officers, indicating which are general and which are special partners;

If an individual: a statement of residence;

If a joint venture: information on each of the parties consistent with the information requested above; if the Contract is awarded to a common law joint venture (a partnership of business entities) each member will be jointly and severally liable under the Contract.

B. Executive Summary

The Proposer shall submit a summary presenting the major features of its proposal and how the proposal satisfies the requirements contained in this RFP, as well as the special competencies and expertise of the Proposer to meet the requirements of this RFP.

C. Agreement on Terms of Discussion

The Proposer shall submit a copy of the "Agreement on Terms of Discussion," signed by an authorized representative of the Proposer. The Agreement format is included as Attachment A and shall be submitted by the Proposer without any alterations or deviations. Any Proposer who fails to sign the Port Authority's "Agreement on Terms of Discussion" will not have its proposal reviewed. If the Proposer is a joint venture, an authorized representative of each party must sign the Agreement.

D. Certifications With Respect to the Contractor's Integrity Provisions

The Proposer, by signing the Letter of Transmittal, makes the certifications in the "Contractor's Integrity Provisions," included as Section 38 of Attachment B of this RFP. If the Proposer cannot make any such certifications, it shall enclose an explanation of that inability. ("Certification Statement").

E. Documentation of Proposer Prerequisites

The Proposer shall submit documentation to demonstrate that it meets all prerequisites, if any, included herein.

F. Proposal

The Proposer must submit a proposal that details and clearly describes its experience and capability to perform the services described in this RFP, its approach to such work and the cost of such work to the Port Authority. At a minimum, the proposal shall address the following:

1. Cost proposal:

   Using Attachment E hereof, the Proposer shall submit a Cost proposal indicating the compensation that it expects to receive. The Cost proposal shall be complete and inclusive of all work required by this RFP, including but not limited to material and labor costs, fuel costs, any salaries, health benefits and other benefits, overheads, profits, etc.

   Note: Currently, the Authority anticipates requesting system administration services for Class 1 and Class 2 systems. However, the Authority may remove such services at some point during the Contract. Therefore, tables 1 and 2 of Attachment E requests pricing for Class 1 and Class 2 Systems **with** system administration (as defined in Section 2.A of the SOW, Attachment B). However, for informational purposes only, Proposers shall also complete Attachment E.1, which requests pricing for Class 1 and Class 2 systems **without** system administration. If the Port Authority removes system administration from the Contract for Class 1 and Class 2 systems, the prices provided in Attachment E.1 shall prevail for the systems specified therein.

2. Work Approach:

   The Proposer shall describe in detail its approach to satisfying the requirements listed in the Scope of Work, particularly the proposed services for each of the systems listed in Attachment D (Description of Current Distributed Systems). Moreover, the Proposer shall:

   - Describe its ability to provide the proposed services and the methodologies to perform the activities listed in the Scope of Work (Attachment C) and to support the systems identified in Attachment D. Also include a documented quality control methodology for all upgrade activities;

   - Identify the processes and/or tools to measure performance against the service levels specified in this RFP;

   - Document the processes used in engagements similar to that required by the Scope of Work;

   - Include a transition plan for beginning and ending the assignment described in the Scope of Work;

   - Provide active disaster recovery procedures, as applicable for the applications, which would adhere to the disaster recovery requirements in Attachment G (Control Requirements Contract Checklist);

   - Describe its ability and experience in working with complex IT corporate environments.

3. Management Approach:

   The Proposer shall describe in detail its experience, including relevant contracts performed in the last five years, its financial capability, management structure, and proposed staffing, including resumes and other supporting documentation, to perform and manage the work. In addition to the foregoing information, the Management Plan shall describe the anticipated

roles and responsibilities of the Proposer and the expectations concerning the Authority's role. Moreover, the Management Plan shall:

- Describe the Proposer's overall organizational structure and explain the relationship of information technology contracts to its overall business goals and objectives;

- Describe the Proposer's approach to the support of application software, and to creating and maintaining related modules or routines, which may or may not be on Class 1 or Class 2 platforms identified in Attachment D;

- Identify any issues related to the Proposer's support of third-party vendor applications in Attachment D, including any special requirements/limitations imposed by the Proposer itself;

- Describe the support structure in place to administer information technology contracts and describe the management tools and techniques used to manage such contracts;

- Include organizational charts, descriptions of project management and quality assurance programs and other relevant material to demonstrate the Proposer's management and approach;

- Indicate the proximity of the key management to the Port District, as defined in Section 1.A, above; and

- Include the Proposer's M/WBE Participation Plan.

3. A Staffing Plan:

The Management Plan shall also include a Staffing Plan demonstrating a sufficient level of staffing experienced in the services needed to support the Scope of Work described herein. Moreover, the Proposer's Staffing Plan shall consider the geographic dispersion of facilities and the service levels required by the Contract. At minimum, the Staffing Plan shall:

- Include a proposed Organizational Chart for the Contract, which shall indicate key supervisory personnel to be assigned for the duration of the Contract and their anticipated functions and relevant experience. This section shall also describe the Proposer's intended organizational and operational structure to be used for Contract management;

- Include a statement documenting the amount of staff that will be dedicated to performing the Contract, and demonstrate how such staffing coverage will satisfy the requirements of the Scope of Work;

- Describe the composition of the Proposer's regional offices and the Proposer's principal personnel and their qualifications, experience and length of employment;

- Include resumes and any other information that will demonstrate the experience and qualifications of the proposed staff (and, if applicable, that of its subcontractor), including the qualifications and experience of its technical management and key technical staff (including the Engagement Manager) who will participate in fulfilling the requirements of the submitted proposal.

  In addition to documenting individual expertise and experience, the resumes shall:

  - identify the certifications achieved by the proposed staff, particularly the certifications (Lenel and Verint) required herein. If proposed staff have not achieved the required certifications by the submission of the proposal, this section of the Management Plan shall demonstrate how they will obtain such certification by Contract commencement; and
  - identify the airport (JFK, LGA, EWR) at which each of the proposed staff will work.
- Include the Proposer's issue escalation procedure and all contact information;

- Specify any assumptions regarding Authority-provided offices, office equipment and other workspace requirements and equipment the Authority is expected to provide the Proposer's staff.

- Include a statement of the total amount of full-time (minimum of forty [40] hours per week) employees currently employed by the Proposer and deployed in similar engagements, and the number employed in each of the preceding three (3) years. The statement shall also identify the amount and experience of its staff.

- Indicate the sources (e.g. subcontractors, etc.), if any, it will utilize to staff the functions required for this Contract. The Proposer shall state whether such sources have provided such services on similar projects for the Proposer or other firms, and include a list indicating specific contracts and describing the business relationship utilized to provide such services, the past experience of key personnel and their length of service with the firm, and their functions and responsibilities relative to a comparable contract.

3. B Background and Integrity Checks:

The Proposer shall submit a Contractor Identity Check/Background Screening Plan, which demonstrates how the Proposer will ensure that only employees, subcontractors, principals, and concerned related parties who were successfully prescreened and properly credentialed perform the services herein. This Plan shall be applicable to all years of the Contract and shall include but not be limited to the following:

- The length of time researched for the identity check/background screening on new hires, which shall be at a minimum of 10 years of employment history or verification of what an employee, subcontractor, principal or concerned related party documented they have done in the last 10 years preceding the date of the investigation, resources utilized to perform this, and the frequency at which it is performed on current employees;

- The type of investigation conducted, including criminal history background investigation, to the extent permitted by law, and other investigatory measures, including but not limited to personal, employment and credit history from open pubic source documents, if any, where permitted by law;

- A listing of the criteria used to determine what activities or records constitute an unacceptable security risk;

- The type of company identification issued and controls utilized to ensure that only authorized personnel possess such company identification, including procedures to return identification cards upon termination of employment;

- The length of time required by the Proposer to perform the identity check/background screening and to issue an identification card; and

- Details on what constitutes an exception to the identity check/background screening and actions taken as a result thereof.

G. Acknowledgment of Addenda

If any Addenda are posted or sent as part of this RFP, the Proposer shall complete, sign and include with its proposal the addenda form(s). In the event any Proposer fails to conform to these instructions, its proposal will nevertheless be construed as though the Addenda had been acknowledged.

If the Proposer downloaded this RFP document, it is the responsibility of the Proposer to periodically check the Port Authority website at http://www.panynj.gov/business-opportunities/bid-proposal-advertisements.html and download any addenda that might have been issued in connection with this solicitation.

H. Acceptance of Standard Contract Terms and Conditions

The Port Authority has attached to this RFP as Attachment B, governing the Contract. The Proposer is expected to agree with these Standard Contract Terms and Conditions. However, if the Proposer has any specific exceptions, such exceptions should be set forth in a separate letter included with its response to this RFP. After the proposal Due Date, the Proposer will be precluded from raising any exceptions unless such exceptions are justified by and directly related to substantive changes in the business or technical requirements and are agreed to by the Proposer and the Port Authority.

I. M/WBE Plan

The Proposer shall submit an M/WBE Plan in accordance with the M/WBE Subcontracting Provisions hereunder.

8. CONDITIONS FOR THE SUBMISSION OF A PROPOSAL

In addition to all other requirements of this RFP, the Proposer agrees to the following conditions for the submission of its proposal.

A. Changes to this RFP

At any time, in its sole discretion, the Port Authority may by written addenda, modify, correct, amend, cancel and/or reissue this RFP. If an addendum is issued prior to the date proposals are due, it will be provided to all parties in the medium in which the parties obtained the RFP. If an addendum is issued after proposals have been received, the addendum will be provided only to those whose proposals remain under consideration at such time.

B. Proposal Preparation Costs

The Port Authority shall not be liable for any costs incurred by the Proposer in the preparation, submittal, presentation, or revision of its proposal, or in any other aspect of the Proposer's pre-contract activity. No Proposer is entitled to any compensation except under an agreement for performance of services signed by an authorized representative of the Port Authority and the Proposer.

C. Disclosure of proposal Contents / Use of Ideas and Materials

proposal information is not generally considered confidential or proprietary. All information contained in the proposal is subject to the "Agreement on Terms of Discussion" attached hereto as Attachment A.

D. Ownership of Submitted Materials

All materials submitted in response to or in connection with this RFP shall become the property of the Port Authority. Selection or rejection of a proposal shall not affect this right.

E. Subcontractors

If a Proposer intends to use subcontractor(s) the Proposer must identify in its proposal the names of the subcontractor(s) and the portions of the work the subcontractor(s) will perform.

F. Conflict of Interest

If the Proposer or any employee, agent or subcontractor of the Proposer may have a possible conflict of interest, or may give the appearance of a possible conflict of interest, the Proposer shall include in its proposal a statement indicating the nature of the conflict. The Port Authority reserves the right to disqualify the Proposer if, in its sole discretion, any interest disclosed from any source could create a conflict of interest or give the appearance of a conflict of interest. The Port Authority's determination regarding any questions of conflict of interest shall be final.

G. Authorized Signature

Proposals must be signed by an authorized corporate officer (e.g., President or Vice President), General Partner, or such other individual authorized to bind the Proposer to the provisions of its proposal and this RFP.

H. References

The Port Authority may consult any reference familiar with the Proposer regarding its current or prior operations and projects, financial resources, reputation, performance, or other matters. Submission of a proposal shall constitute permission by the Proposer for the Port Authority to make such inquiries and authorization to third parties to respond thereto.

I. Evaluation Procedures and Negotiation

Only Proposers which meet the prerequisites, if any, may have their proposals evaluated based on the evaluation criteria set forth in this RFP. The Port Authority may use such procedures that it deems appropriate to evaluate such proposals. The Port Authority may elect to initiate contract negotiations with one or more Proposers including negotiation of costs/price(s) and any other term or condition, including modifying any requirement of this RFP. The option of whether or not to initiate contract negotiations rests solely with the Port Authority.

J. Taxes and Costs

Purchases of services and tangible personal property by the Port Authority in the States of New York and New Jersey are generally exempt from state and local sales and compensating use taxes, and from most federal excises (Taxes). All costs associated with the Contract must reflect this exemption and be stated in U.S currency.

K. Most Advantageous proposal/No Obligation to Award

The Port Authority reserves the right to award the Contract to other than the Proposer proposing the lowest price. The Contract will be awarded to the Proposer whose proposal the Port Authority believes, in its sole discretion, will be the most advantageous to the Port Authority. Neither the release of this RFP nor the acceptance of any response thereto shall compel the Port Authority to accept any proposal. The Port Authority shall not be obligated in any manner whatsoever to any Proposer until a proposal is accepted by the Port Authority in the manner provided in the Section of this RFP entitled "proposal Acceptance or Rejection."

L. Multiple Contract Awards

The Port Authority reserves the right to award multiple Contracts for the products, work and/or services that are the subject matter of this RFP and Proposers are hereby given notice that they may not be the Port Authority's only contractor for such products, work and/or services.

M. Right to Extend Contract

If this is a proposal for a contract for a term of years, including specified options for renewal, the Port Authority reserves the additional right to extend the contract term for an additional 120 days, upon the same terms and conditions of the original Contract negotiated between the Port Authority and the successful Proposer.

N. Rights of the Port Authority

(1) The Port Authority reserves all its rights at law and equity with respect to this RFP including, but not limited to, the unqualified right, at any time and in its sole discretion, to change or modify this RFP, to reject any and all proposals, to waive defects or irregularities in proposals received, to seek clarification of proposals, to request additional information, to request any or all Proposers to make a presentation, to undertake discussions and modifications with one or more Proposers, or to negotiate an agreement with any Proposer or third person who, at any time, subsequent to the deadline for submissions to this RFP, may express an interest in the subject matter hereof, to terminate further participation in the proposal process by a Proposer or to proceed with any proposal or modified proposal, which in its judgment will, under all circumstances, best serve the Port Authority's interest. The Port Authority may, but shall not be obliged to, consider incomplete proposals or to request or accept additional material or information. The holding of any discussions with any Proposer shall not constitute acceptance of a proposal, and a proposal may be accepted with or without discussions.

(2) No Proposer shall have any rights against the Port Authority arising from the contents of this RFP, the receipt of proposals, or the incorporation in or rejection of information contained in any proposal or in any other document. The Port Authority makes no representations, warranties, or guarantees that the information contained herein, or in any addenda hereto, is accurate, complete, or timely or that such information accurately represents the conditions that would be encountered during the performance of the contract. The furnishing of such information by the Port Authority shall not create or be deemed to create any obligation or liability upon it for any reason whatsoever and each Proposer, by submitting its proposal, expressly agrees that it has not relied upon the foregoing information, and that it shall not hold the Port Authority liable or responsible therefor in any manner whatsoever. Accordingly, nothing contained herein and no representation, statement or promise, of the Port Authority, its directors, officers, agents, representatives, or employees, oral or in writing, shall impair or limit the effect of the warranties of the Proposer required by this RFP or Contract and the Proposer agrees that it shall not hold the Port Authority liable or responsible therefor in any manner whatsoever.

(3) At any time and from time to time after the opening of the proposals, the Port Authority may give oral or written notice to one or more Proposers to furnish additional information relating to its proposal and/or qualifications to perform the services contained in this RFP, or to meet with designated representatives of the Port Authority. The giving of such notice shall not be construed as an acceptance of a proposal. Information shall be submitted within three (3) calendar days after the Port Authority's request unless a shorter or longer time is specified therein.

O. No Personal Liability

Neither the Commissioners of the Port Authority, nor any of them, nor any officer, agent or employee thereof shall be charged personally with any liability by a Proposer or another or held liable to a Proposer or another under any term or provision of this RFP or any statements made herein or because of the submission or attempted submission of a proposal or other response hereto or otherwise.

9. ATTACHMENTS

None

ATTACHMENT A: AGREEMENT ON TERMS OF DISCUSSION

The Port Authority's receipt or discussion of any information (including information contained in any proposal, vendor qualification, ideas, models, drawings, or other material communicated or exhibited by us or on our behalf) shall not impose any obligations whatsoever on the Port Authority or entitle us to any compensation therefor (except to the extent specifically provided in such written agreement, if any, as may be entered into between the Port Authority and us). Any such information given to the Port Authority before, with or after this Agreement on Terms of Discussion ("Agreement"), either orally or in writing, is not given in confidence. Such information may be used, or disclosed to others, for any purpose at any time without obligation or compensation and without liability of any kind whatsoever. Any statement which is inconsistent with this Agreement, whether made as part of or in connection with this Agreement, shall be void and of no effect. This Agreement is not intended, however, to grant to the Port Authority rights to any matter, which is the subject of valid existing or potential letters patent. The foregoing applies to any information, whether or not given at the invitation of the Authority.

Notwithstanding the above, and without assuming any legal obligation, the Port Authority will employ reasonable efforts, subject to the provisions of the Port Authority Freedom of Information Code and Procedure (FOI Code) adopted by the Port Authority's Board of Commissioners on March 29, 2012, which may be found on the Port Authority website at: http://www.panynj.gov/corporate-information/pdf/foi-code.pdf, not to disclose to any competitor of the undersigned, information submitted which are trade secrets which, if disclosed, would cause injury to the competitive position of the enterprise, and which information is identified by the Proposer as proprietary, as more fully set forth in the FOI Code, which may be disclosed by the undersigned to the Port Authority as part of or in connection with the submission of a proposal.

_____
(Company)

_____
(Signature)

_____
(Title)

_____
(Date)

ORIGINAL AND PHOTOCOPIES OF THIS PAGE ONLY.
DO NOT RETYPE.

ATTACHMENT B: GENERAL CONTRACT PROVISIONS

1. GENERAL AGREEMENT

The undersigned (hereinafter referred to as the "Contractor" or "you") agrees to provide, and The Port Authority of New York and New Jersey (hereinafter referred to as the "Authority" or the "Port Authority") agrees to accept the Contractor's proposal to provide Aviation Application Management and Administration of certain systems at John F. Kennedy International ("JFK"), LaGuardia ("LGA") and Newark Liberty International ("EWR") Airports, as more fully described in the Scope of Work (Attachment C) attached hereto and made a part hereof. The Scope of Work requires the doing of all things necessary or proper for or incidental to the requirements as set forth in the Scope of Work. All things not expressly mentioned in the Scope of Work but involved in carrying out their intent are required by the Scope of Work and the Contractor shall perform the same as though they were specifically mentioned, described and delineated.

Subject only to the provisions of the clause herein entitled "Extra Work", the Contractor's sole compensation in full consideration for the performance of all the Contractor's obligations under this Contract is provided in the Cost proposal, as accepted by the Port Authority.

2. DEFINITIONS

As used herein, for all services related to the security systems supported under this Contract, "Director" shall shall mean the Chief Security Officer acting either personally or through his duly authorized representatives acting within the scope of the particular authority vested in them unless specifically stated to mean acting personally.

As used herein, for all services related to non-security systems supported under this Contract, "Director" shall mean the Director of Aviation acting either personally or through her duly authorized representatives acting within the scope of the particular authority vested in them unless specifically stated to mean acting personally.

For the purpose of administering this Contract, both Directors have designated the Senior Security and Technology Analyst of the Aviation Department to act as their duly authorized representative and as Contract Manager.

For the purposes of this Contract, the Contract Manager (sometimes referred to herein as the "Manager") shall be the individual with day-to-day responsibility for managing the services on behalf of the Port Authority. The Director may modify this designation in a writing forwarded to the Contractor at the address designated for delivery of notice herein.

As used herein, the term "days" or "calendar days" in reference to a period of time shall mean consecutive calendar days, Saturdays, Sundays, and holidays included.

"Facility" shall mean Port Authority Facilities within the Port District.

"Services" or "Work" - shall mean all services, equipment and materials (including materials and equipment, if any, furnished by the Authority) and other facilities and all other things necessary or proper for, or incidental to the services to be performed or goods to be furnished in connection with the service to be provided hereunder, as set forth in the Scope of Work.

As used herein, the term "Work Day" shall mean a day between Monday and Friday with Monday and Friday included, and Holidays excluded.

As used herein the term "Specifications" shall mean all requirements of this RFP, technical and otherwise, for the performance of the Scope of Work and services hereunder.

Holidays: The following legal holidays will be observed at Port Authority offices and facilities:

New Year's Day
Martin Luther King, Jr. Day
Presidents' Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veterans Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

As used herein, the terms "Port Authority" or "Authority" shall mean The Port Authority of New York and New Jersey.

Minority Business Enterprise (MBE) - shall mean a business entity which is at least 51% owned and controlled by one or more members of one or more minority groups, or, in the case of a publicly held corporation, at least 51% of the stock of which is owned by one or more members of one or more minority groups, and whose management and daily business operations are controlled by one or more such individuals who are citizens or permanent resident aliens.

"Minority Group" means any of the following racial or ethnic groups:

- Black persons having origins in any of the Black African racial groups not of Hispanic origin;
- Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American culture or origin, regardless of race;
- Asian and Pacific Islander persons having origins in any of the original peoples of the Far East, Southeast Asia, The Indian Subcontinent, or the Pacific Islands;
- Native American or Alaskan native persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.

Small Business Enterprise (SBE) - The criteria for a Small Business Enterprise are:

- The principal place of business must be located in New York or New Jersey;
- The firm must have been in business for at least three years with activity; and
- Average gross income limitations by industry as established by the Port Authority.

Women-Owned Business Enterprise (WBE) - shall mean a business enterprise which is at least 51% owned by one or more women, or, in the case of a publicly held corporation, at least 51% of the stock of which is owned by one or more women and whose management and daily business operations are controlled by one or more women who are citizens or permanent resident aliens.

Subcontractor - shall mean anyone who performs work (other than or in addition to the furnishing of materials, plant or equipment) in connection with the services to be provided hereunder, directly or indirectly for or on behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any person who furnished merely its own personal labor or its own personal services. "Subcontractor", however, shall exclude the Contractor or any subsidiary or parent of the Contractor or any person, firm or corporation which has a substantial interest in the Contractor or in which the Contractor or the parent or the subsidiary of the Contractor, or an officer or principal of the Contractor or of the parent of the subsidiary of the Contractor has a substantial interest, provided, however, that for the purpose of the

clause hereof entitled "Assignments and Subcontracts" the exclusion in this paragraph shall not apply to anyone but the Contractor itself.

3. GENERAL PROVISIONS

A. Under no circumstances shall you or your subcontractors communicate in any way with any department, board, agency, commission, or other organization or any person whether governmental or private in connection with the services to be performed hereunder except upon prior written approval and instructions of the Director, provided, however, that data from manufacturers and suppliers of materials, devices and equipment shall be obtained by you when you find such data necessary unless otherwise instructed by the Authority.

B. Any services performed for the benefit of the Authority at any time by you or on your behalf, even if expressly and duly authorized by the Authority, shall be deemed to be rendered under and subject to this Contract (unless referable to another expressly written, duly executed contract by the same parties), whether such additional services are performed prior to, during or subsequent to the services described herein, and no rights or obligations shall arise out of such additional services except as provided under this Contract.

C. The Contractor shall observe and obey (and compel its officers, employees, guests, invitees, and those doing business with it, to observe and obey) the rules and regulations of the Port Authority now in effect, and such further rules and regulations which may from time to time during the effective period of this Contract, be promulgated by the Port Authority for reasons of safety, health, preservation of property, or maintenance of a good and orderly appearance of the Facilities, or for the safe and efficient operation of the Facilities. The Port Authority agrees that, except in cases of emergency, it shall give notice to the Contractor of every rule and regulation hereafter adopted by it.

D. This Contract does not constitute the Contractor as an agent or representative of the Port Authority for any purpose whatsoever. The Contractor shall perform all services hereunder as an independent Contractor and the Contractor, its officers, and employees shall not be deemed to be agents, servants, or employees of the Port Authority.

4. DURATION

This Contract shall commence on or about April 1, 2014, and shall remain in effect for a period of three (3) years (hereinafter the "Base Term"), unless otherwise terminated in accordance with the provisions hereof. The Authority shall have the right to extend this Contract for up to two (2) additional two-year periods by written notice to the Contractor at least thirty (30) days prior to the expiration of the Base Term or the expiration of the Option Period, if applicable.

The Authority shall also have the right to extend this Contract for an additional 120 day period, from the date originally fixed for expiration of the Base Term or any option period then in effect upon the same terms and conditions except as set forth elsewhere in this Contract, to be effected by written notice to the Contractor received no later than thirty (30) days prior to the expiration date of the Base Term or the expiration date of the option period, if applicable.

5. PRICE ADJUSTMENT

All Contract prices for services and for extra work labor shall be applicable through the end of the Base Term. The Contractor's compensation for the Option Periods shall be adjusted as stated below, but shall not exceed three (3%) percent per year:

a. For the first year of the first two-year Option Period of the Contract, the quarterly United States Bureau of Labor Statistics Employment Cost Index for Wages and Salaries for Private Industry Workers Professional, Specialty and Technical (non seasonally adjusted data June 1989 = 100) (hereinafter the "Index") for the first Quarter of 2016 and first Quarter of 2017 shall be obtained. The compensation for services and Extra Work labor payable in the third year of the Base Term of the Contract shall be multiplied by a fraction, the numerator of which shall be said Index for the first Quarter of 2017 and the denominator of which shall be said Index for the first Quarter of 2016. The resulting product shall be the compensation payable for services and Extra Work labor in the first year of the first Option Period.

b. For the second year of the first Option Period, the Index for the first Quarter of 2018 shall be obtained. The compensation for services and for Extra Work labor payable in the second year of the option period shall be the Prices payable in the first year of the option period multiplied by a fraction, the numerator of which shall be said Index for the first Quarter of 2018 and the denominator of which shall be the number of said Index for the first quarter of 2017. The resulting product shall be the compensation payable for services and Extra Work labor in the second year of the first Option Period.

c. For the first year of the second Option Period, the Index for the first Quarter of 2019 shall be obtained. The compensation for services and for Extra Work labor payable in the first year of the second option period shall be the Prices payable in the second year of the first option period multiplied by a fraction, the numerator of which shall be said Index for the first Quarter of 2019 and the denominator of which shall be the number of said Index for the first quarter of 2018. The resulting product shall be the compensation payable for services and Extra Work labor in the first year of the second Option Period.

d. For the second year of the second Option Period, the Index for the first Quarter of 2020 shall be obtained. The compensation for services and for Extra Work labor payable in the second year of the second option period shall be the Prices payable in the first year of the second option period multiplied by a fraction, the numerator of which shall be said Index for the first Quarter of 2020 and the denominator of which shall be the number of said Index for the first quarter of 2019. The resulting product shall be the compensation payable for services and Extra Work labor in the second year of the second Option Period.

e. In the event of a change of the basis for the computation of the Said Index or the discontinuance of its publication, such other appropriate index shall be substituted as may be agreed upon by the Authority and the Contractor as properly reflecting changes in the value of the of the services and Extra Work labor similar to that established in the said Index. If the parties cannot agree, the Authority will select the substitute Index.

f. The Contractor's compensation for Services and Extra Work labor for the 120-day extension option shall not be subject to adjustment. Labor and service costs for the 120-day extension period shall be the same as in effect during the year prior to the start of the 120-day option.

6. EXTRA WORK

Except as specifically hereinafter provided in this numbered clause, the Contractor shall immediately supply such modified or additional products and services as the Authority may direct ("Extra Work"). If such changes or additions are without fault on its part, or on the part of others performing on behalf of the Contractor whether or not in privity of contract with the Contractor, and if solely as a result thereof, the Contractor incurs

additional costs in the performance of its obligations hereunder, the Contractor may request compensation for such changes or additions in addition to the compensation provided for elsewhere herein. Agreement by the Authority, if such is forthcoming, shall be in writing. The execution of the aforementioned written agreement shall be a condition precedent to payment of any additional compensation for changes or additions. Accordingly, if the Authority directs the Contractor to make any change in or addition to products or services which entitle it to compensation in addition to that provided for elsewhere herein, ite shall not proceed with such changes or additions prior to execution of the aforementioned written agreement except as set forth in the clause hereof entitled "Compensation for Extra Work".

If, as a result of any changes in or additions to the products or services the Authority directs the Contractor to make, the costs of performance of its obligations hereunder are decreased, the parties agree to make such adjustments by way of reduction in the compensation provided for elsewhere herein as they may deem equitable and reasonable and, in making such adjustments, no allowance shall be made for anticipated profits.

The Director shall have the authority to order Extra Work up to an amount equal to six percent (6%) of the Total Estimated price for the base term plus 6% for any option years that have been exercised unless the Contractor is advised of a greater authorization in a letter signed by the Authority's Director of Procurement. Nothing herein shall be construed as a presentation that any changes or additions will be ordered.

7. COMPENSATION FOR EXTRA WORK

The Director and the Contractor may agree, in writing, on lump sum or other compensation for Extra Work. In the event that no such agreement is reached, compensation shall be increased by the sum of the following amounts and such amounts only:

A. for labor, compensation equal to the applicable hourly rates set forth in Sections 5 and 6 of the Cost proposal, as accepted by the Authority;
B. the actual net cost in money of the materials required for the work; and
C. in addition to the foregoing, if the extra work is performed by a subcontractor, five percent (5%) of the amounts under (A) and (B). No extra work shall be performed by a subcontractor without the prior written approval of the Director.

8. EXTRA WORK PROCEDURES

Whenever any Extra Work is performed by the Contractor on a basis other than on a lump sum basis, the Contractor shall, as a condition precedent to payment for such work, furnish to the Director or his/her authorized representative at the end of each day daily time slips showing (a) the name and employee number of each person employed thereon, and the number of hours in each day during which they performed Extra Work; (b) a brief description of the nature of the work performed and a list of material and equipment used and the Port Authority authorized representative who approved the Extra Work. Item (b) shall be supplemented by the Contractor at a later date with a statement indicating from whom materials were purchased and the amount paid therefor. Such daily time slips are for the purpose of enabling the Director or his authorized representatives to determine the accuracy of the amounts claimed by the Contractor.

9. PERFORMANCE OF EXTRA WORK

The provisions of this Contract relating generally to the Work shall apply without exception to any Extra Work required and to the performance thereof, except to the extent that a written order in connection with any particular item of Extra Work may expressly provide otherwise.

10. REQUIRED SERVICE LEVELS AND LIQUIDATED DAMAGES FOR NON-PERFORMANCE

The Contractor's obligations for the performance of all work at the service levels specified in this Contract are of the essence. The Contractor guarantees that it can and will complete performance under this Contract at the service levels stipulatedbelow. The Authority may consider continued failure to meet performance under this Contract at the levels stipulated as a material breach of this Contract. Service level monitoring and damages assessed will begin immediately upon the provision of the services stated herein. The Service Levels specified in the table below are elaborated in Section 3 (Service Level Agreement) of the Scope of Work (Attachment C).

Inasmuch as the damage and loss to the Authority which will result from the Contractor's failure to perform at these levels will include items of loss whose amount will be incapable or very difficult to accurately estimate, the damages to the Authority for non-performance will be liquidated as follows:

Service	Liquidated Damages
Section 4.1 of the SOW: Server Availability (applying only to Class 1 and 2)	2% of the total monthly payment for the affected system
Section 4.2 of the SOW: Application Patch/Version Maintenance (applying only to Class 1 and 2)	2% of total monthly payment for the affected system for each two-week delay past the 12 months of general release.
Section 4.4 of the SOW: Operational Requests (applying only to Class 1 and 2)	$500 per day if the referenced service levels are not satisfied within the stated times
Section 4.5 of the SOW: Backups and Archiving (applying only to Class 1 and 2)	$5,000 per instance
Section 4.6 of the SOW: Application System Monitoring (applying only to Class 1 and 2)	$1,000 per instance of non-monitoring
Section 4.7 of the SOW: Hours of Service (All Classes)	$500 per instance of non-compliance.
Section 4.8 of the SOW: Continuity of Coverage, measured daily (All Classes)	$5,000 per each percentage over 15% per year, unless otherwise approved by the Authority
Section 4.9 of the SOW: 100% of compliance with the Control Requirements Contract Checklist (Attachment G) and Standards and Guidelines for Port Authority Technology (Attachment H) (All Classes)	$500 per each instance of non-compliance.
Section 4.10 of the SOW: Response Times	$500 per instance of non-compliance

The above services refer specifically to the work described hereunder, which is the Contractor's responsibility. The Authority will actively monitor the Contractor's performance and enforce contract non-compliance and non-performance clauses by assessing Liquidated Damages. However, the Authority will not assess liquidated damages if non-compliance results from events or activities for which the Contractor is not responsible.

The Contractor will track, calculate, monitor and report on performance against the Service Levels above and will adjust invoices accordingly.

Repeated failure to meet the above Service Level Standards on the part of the Contractor constitutes a material breach of the Contract and will be cause for the Contractor to be declared in breach of Contract, regardless of the existence of Liquidated Damages provisions. In the event the Contractor is declared in breach of Contract, in addition to all other rights and remedies available under this Contract, law and equity, the Port Authority shall be entitled to collect Liquidated Damages up to the time of the breach.

11. PAYMENTS

Subject to the provisions of this Contract, the Port Authority agrees to pay to the Contractor and the Contractor agrees to accept from the Port Authority as full and complete consideration for the performance of all its obligations under this Contract and as sole compensation for the Services performed by the Contractor hereunder, a compensation calculated from the services performed and the respective unit prices inserted by the Contractor in the Cost Response Form in Attachment G (as accepted by the Authority), forming a part of this Contract.

The manner of submission of all bills for payment to the Contractor by the Authority for Services rendered under this Contract shall be subject to the approval of the Contract Manager in all respects, including, but not limited to, format, breakdown of items presented and verifying records. All computations made by the Contractor and all billing and billing procedures shall be done in conformance with the following procedures:

A. Payment shall be made in accordance with the prices for the applicable service as they appear on Attachment E entitled "Cost Proposal," as accepted by the Authority, as same may have been adjusted hereunder minus any deductions for services not performed and/or any applicable liquidated damages. All Services must be completed within the time frames specified or as designated by the Contract Manager. Contractor shall submit to the Contract Manager by the fifth day of each month following the month of commencement of this Contract and on or by the fifth day of each month thereafter (including the month following the termination, revocation or expiration of this Contract) a complete and correct invoice for the Services performed during the preceding month accompanied by such information as may be required by the Contract Manager for verification. The invoice must show the Contractor's Federal Tax Identification Number. Payment will be made within thirty (30) days of Authority verification of the invoice. No certificate, payment, acceptance of any Services or any other act or omission of any representative of the Authority shall operate to release the Contractor from any obligation under or upon this Contract, or to stop the Authority from showing at any time that such certificate, payment, acceptance, act or omission was incorrect or to preclude the Authority from recovering any monies paid in excess of those lawfully due and any damage sustained by the Authority.

B. If System Administration is removed from Class 1 and 2 systems, as set forth in Section 2.A of Attachment C, payment for application management, without systems administration, of such removed systems will be

in accordance with the prices for the applicable service as they appear on Attachment E1, as accepted by the Port Authority, as same may have been adjusted hereunder minus any deductions for services not performed and/or any applicable liquidated damages. All Services must be completed within the time frames specified or as designated by the Contract Manager. Contractor shall submit to the Contract Manager by the fifth day of each month following the month of commencement of this Contract and on or by the fifth day of each month thereafter (including the month following the termination, revocation or expiration of this Contract) a complete and correct invoice for the Services performed during the preceding month accompanied by such information as may be required by the Contract Manager for verification. The invoice must show the Contractor's Federal Tax Identification Number. Payment will be made within thirty (30) days of Authority verification of the invoice. No certificate, payment, acceptance of any Services or any other act or omission of any representative of the Authority shall operate to release the Contractor from any obligation under or upon this Contract, or to stop the Authority from showing at any time that such certificate, payment, acceptance, act or omission was incorrect or to preclude the Authority from recovering any monies paid in excess of those lawfully due and any damage sustained by the Authority.

C. In the event an audit of received invoices should indicate that the correct sum due the Contractor for the relevant billing period is less than the amount actually paid by the Authority, the Contractor shall pay to the Authority the difference promptly upon receipt of the Authority's statement thereof. The Authority may, however, in its discretion elect to deduct said sum or sums from any subsequent payments payable to the Contractor hereunder.

"Final Payment", as the term is used throughout this Contract, shall mean the final payment made for services rendered in the last month of the Contract Term. However should this Contract be terminated for any reason prior to the last month of the Contract Term, then Final Payment shall be the payment made for services rendered in the month during which such termination becomes effective. The Contractor's acceptance of any payment, including Final Payment, shall act as a full and complete release to the Authority of all claims of and of all liability to the Contractor for all things done or furnished in connection with this Contract and for every act and neglect of the Authority and others relating to or arising out of this Contract, including claims arising out of breach of contract and claims based on claims of third persons. No payment, however, final or otherwise shall operate to release the Contractor from any obligations in connection with this Contract.

12. INTELLECTUAL PROPERTY

A) Except as provided below: as between the Port Authority and the Contractor all process flows, codes including, but not limited to machine code, scripts, programs, routines, processes, procedures, documentation, estimates, reports, records, data, charts, documents, models, designs, renderings, drawings, specifications, photographs, computations, computer tapes or discs, and other documentation of any type whatsoever, whether electronic or in the form of writing, figures or delineations, which are prepared or compiled in connection with this Contract, shall become the exclusive property of the Authority, and the Authority shall have the exclusive right to use or permit the use of them and any ideas or methods represented by them for any purpose and at any time without other compensation than that specifically provided for herein. With regard to training manuals or any other knowledge transfer documentation, communication or presentation prepared under this Contract the Authority shall expressly have the right to use, alter and reproduce including electronically, said manuals for its internal business purposes. The Contractor hereby warrants and represents that the Authority will have at all times the ownership and rights provided for in the

immediately preceding sentence free and clear of all claims of third persons whether presently existing or arising in the future and whether presently known to either of the parties to this Contract or not. Any information given to the Port Authority before, with or after submission of the Agreement on Terms of Discussion, either orally or in writing, is not given in confidence and may be used, or disclosed to others, for any purpose at any time without obligation or compensation and without liability of any kind whatsoever except as otherwise set forth in the Agreement On Terms Of Discussion.

B) All preexisting information or documentation including computer programs or code including source code, of the Contractor, utilized by the Contractor hereunder in the performance of its services hereunder shall be deemed licensed to the Authority for the duration and purposes of this Contract, but shall remain the property of the Contractor.

C) When in the performance of the Contract the Contractor utilizes passwords or codes for any purpose, the Contractor, upon written request by the Authority, made at any time during or after the performance of such services, shall promptly make available to the designated Authority representative all such passwords and codes.

D) Third party software not specially prepared for the purpose of this contract but utilized by the Contractor hereunder in the performance of its services hereunder shall be licensed to the Contractor and the Authority for the duration and purposes of this contract but shall remain the property of said third party.

E) The above-described software shall be furnished by the Contractor without additional compensation.

13. PROPRIETARY RIGHTS IN SUBJECT MATTER NOT WITHIN THE INTELLECTUAL PROPERTY CLAUSE

If in accordance with this Contract the Contractor furnishes research, development or consultative services in connection with the performance of the Work and if in the course of such research, development, or consultation patentable or copyrightable subject matter or trade secrets or other proprietary matter is produced by the Contractor, its officers, agents, employees, subcontractors, or suppliers, not custom software, and not covered under the clause hereof entitled "Intellectual Property", the Authority shall have, without cost or expense to it, an irrevocable, non-exclusive, royalty-free license to make, have made, and use, either itself or by anyone on its behalf, such subject matter in connection with any activity now or hereafter engaged in or permitted by the Authority. Promptly upon request by the Authority, the Contractor shall furnish or obtain from the appropriate person a form of license satisfactory to the Authority, but it is expressly understood and agreed that as between the Contractor and the Authority the license herein provided for shall nevertheless arise for the benefit of the Authority immediately upon the production of said subject matter and shall not await formal exemplification in a written license agreement as provided for above. Such license may be transferred by the Authority to its successors, immediate or otherwise, in the operations of or ownership of any facility now or hereafter operated by the Authority but such license shall not be otherwise transferable.

The right of the Authority as well as the Contractor to use all patented material, compositions of matter, manufactures, apparatus, appliances, processes of manufacture or types of construction as well as any copyrightable matter, trade secrets or other proprietary matters, shall be obtained by the Contractor without separate or additional compensation whether the same is patented or copyrighted before, during or after the performance of the Work.

14. INDEMNITY IN REGARD TO INFRINGEMENT MATTER

The Contractor shall indemnify the Authority against and save it harmless from all loss and expense incurred in the defense, settlement or satisfaction of any claims in the nature of patent, copyright, or other proprietary rights infringement arising out of or in connection with the Authority's use, in accordance with the two immediately preceding clauses of any matter protected as intellectual property. If requested by the Authority and if notified promptly in writing of any such claims, the Contractor shall conduct all negotiations with respect to and defend such claim without expense to the Authority. If the Authority be enjoined from using any of the components of the System which form the subject matter of this Contract, and as to which the Contractor is to indemnify the Authority against proprietary rights claims, the Authority may, at its option and without thereby limiting any other right it may have hereunder or at law or in equity, require the Contractor to supply, temporarily or permanently, components of the System not subject to such injunction and not infringing any proprietary rights and if the Contractor shall fail to do so, the Contractor shall, at its expense, remove all such facilities and refund the cost thereof to the Authority and otherwise equitably adjust compensation and take such steps as may be necessary to ensure compliance by the Authority with such injunction, to the satisfaction of the Authority.

The Contractor shall promptly and fully inform the Director of any claims or disputes for infringement or otherwise, whether existing or potential, of which it has knowledge relating to any Intellectual Property used, developed or licensed in connection with the performance of the Work or otherwise in connection with this Contract.

If so directed, the Contractor shall at its own expense defend any suit based upon any claim or demand, even if such suit, claim or demand is groundless, false or fraudulent, and in handling such shall not, without obtaining express advance permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority or the provision of any statutes respecting suits against the Port Authority.

15. TIME IS OF THE ESSENCE

The Contractor's obligations for the performance and completion of all work within the time or times provided for in this Contract, and as directed by the Director or Manager, are of the essence of this Contract.

16. FINAL PAYMENT

After satisfactory completion of all services required hereunder, and upon receipt from the Contractor of such information as may be required, the Director shall certify in writing to the Contractor the total compensation earned by the Contractor. If so required, the Contractor shall thereupon furnish to the Authority a detailed sworn statement of all claims, just and unjust, of subcontractors, materialmen and other third persons then outstanding which he has reason to believe may thereafter be made on account of the services provided under this Contract. Within thirty (30) days after issuance of such certificate of total compensation earned (or within thirty days after receipt of the documents provided for in the immediately preceding paragraph, if required and if such date is later), the Port Authority shall pay to the Contractor by check the amount stated in said certificate, less all other payments and advances whatsoever to or for the account of the Contractor. All prior estimates and payments shall be subject to correction in this payment, which is throughout this Contract called the Final Payment. The acceptance by the Contractor, or by anyone claiming by or through it, of the Final Payment shall be and shall operate as a release to the Authority of all claims and of all liability to the Contractor for all things done or furnished in connection with this contract and for every act and neglect of the

Authority and others relating to or arising out of this contract, including claims arising out of breach of the contract and claims based on claims of third persons.

The Contractor's agreement as provided in the immediately preceding paragraph shall be deemed to be based upon the consideration forming part of this Contract as a whole and not to be gratuitous; but in any event even if deemed gratuitous and without consideration, such agreement as provided in the immediately preceding paragraph shall nevertheless be effective. Such release shall include all claims, whether or not in litigation and even though still under consideration by the Authority. Such release shall be effective notwithstanding any purported reservation of right by the Contractor to preserve such claim. The acceptance of any check designated as "Final Payment" or bearing any similar designation shall be conclusively presumed to demonstrate the intent of the Contractor that such payment was intended to be accepted as final, with the consequences provided in this numbered clause, notwithstanding any purported reservation of rights.

The Contractor agrees that it shall not be entitled to, and hereby waives any right it might otherwise have to, and shall not seek any judgment whether under this Contract or otherwise for any such Final Payment or for an amount equivalent thereto or based thereon, or for any part thereof, if such judgment would have the effect of varying, setting aside, disregarding or making inapplicable the terms of this numbered clause or have the effect in any way of entitling the Contractor to accept such Final Payment or an amount equivalent thereto or based thereon or any part thereof other than in the same fashion as a voluntary acceptance of a Final Payment subject to all the terms of this Contract including this numbered clause, unless and until the Contractor should obtain a judgment on any claim arising out of or in connection with this Contract (including a claim based on breach of contract) for an amount not included in said Final Payment.

17. DEFAULT, REVOCATION OR SUSPENSION OF CONTRACT

A. If one or more of the following events shall occur:

1. Fire or other event which destroys all or a substantial part of the Facility, asset or infrastructure necessary to perform the Scope of Work;
2. Any governmental agency shall condemn or take a temporary or permanent interest in all or a substantial part of the Facility, or all of a part of the Port Authority's interest herein;

then upon the occurrence of such event or at any time thereafter during the continuance thereof, the Port Authority shall have the right on twenty-four (24) hours written notice to the Contractor to revoke this Contract, such revocation to be effective upon the date and time specified in such notice.

In such event this Contract shall cease and expire on the effective date of revocation as if said date were the date of the expiration of this Contract. Such revocation shall not, however, relieve the Contractor of any liabilities or obligations hereunder which shall have accrued on or prior to the effective date of revocation.

B. If one or more of the following events shall occur:

1. The Contractor shall become insolvent, or shall take the benefit of any present or future insolvency statute, or shall make a general assignment for the benefit of creditors, or file a voluntary petition in bankruptcy or a petition or answer seeking an arrangement or its reorganization or the readjustment of its indebtedness under the federal bankruptcy laws or under any other law or statute of the United States or of any State thereof, or consent to the appointment of a receiver, trustee, or liquidator of all or substantially all its property; or

2. By order or decree of a court the Contractor shall be adjudged bankrupt or an order shall be made approving a petition filed by any of the creditors, or, if the Contractor is a corporation, by any of the stockholders of the Contractor, seeking its reorganization or the readjustment of its indebtedness under the federal bankruptcy laws or under any law or statute of the United States or of any State thereof; or

3. A petition under any part of the federal bankruptcy laws or an action under any present or future insolvency law or statute shall be filed against the Contractor and shall not be dismissed within thirty (30) days after the filing thereof; or

4. The interest of the Contractor under this Contract shall be transferred to, passed to or devolve upon, by operation of law or otherwise, any other person, firm or corporation; or

5. The Contractor, if a corporation, shall, without the prior written approval of the Port Authority, become a surviving or merged corporation in a merger, a constituent corporation in a consolidation, or a corporation in dissolution; or

6. If the Contractor is a partnership, joint-venture, or similar arrangement (referred to herein for convenience as the "partnership"), and the said partnership shall be dissolved as the result of any act or omission of its copartners or any of them, or by operation of law or the order or decree of any court having jurisdiction, or for any other reason whatsoever; or

7. By or pursuant to, or under authority of any legislative act, resolution or rule, or any order or decree of any court or governmental board, agency or officer having jurisdiction, a receiver, trustee, or liquidator shall take possession or control of all or substantially all of the property of the Contractor and such possession or control of all or substantially all of the property of the Contractor and shall continue in effect for a period of fifteen (15) days;

then upon the occurrence of any such event or at any time thereafter during the continuance thereof, the Port Authority shall have the right upon five (5) days notice to the Contractor to terminate this Contract and the rights of the Contractor hereunder; termination to be effective upon the date and time specified in such notice as if said date were the date of the expiration of this Contract. Termination shall not relieve the Contractor of any liabilities or obligations hereunder which have accrued on or prior to the effective date of termination.

C. If any of the following shall occur:

1. The Contractor shall cease, abandon any part of the service, desert, stop or discontinue its services in the premises for any reason whatsoever and regardless of the fault of the Contractor; or

2. The Contractor shall fail to keep, perform and observe each and every other promise, covenant and agreement set forth in this Contract on its part to be kept, performed or observed, within five (5) days after receipt of notice of default thereunder from the Port Authority (except where fulfillment of its obligations requires activity over a greater period of time, and the Contractor shall have commenced to perform whatever may be required for fulfillment within five (5) days after receipt of notice and continues such performance without interruption except for causes beyond its control);

then upon the occurrence of any such event or during the continuance thereof, the Port Authority shall have the right on twenty four (24) hours notice to the Contractor to terminate this Contract and the rights of the Contractor hereunder, termination to be effective upon the date and time specified in such notice. Termination shall not relieve the Contractor of any liabilities, which shall have accrued on or prior to the effective date of termination.

D. If any of the events enumerated in this Section shall occur prior to commencement date of this Contract the Port Authority upon the occurrence of any such event or any time thereafter during the continuance thereof by twenty-four (24) hours notice may terminate or suspend this Contract and the rights of the Contractor hereunder, such termination or suspension to be effective upon the date specified in such notice.

E. No payment by the Port Authority of any monies to the Contractor for any period or periods after default of any of the terms, covenants or conditions hereof to be performed, kept and observed by the Contractor and no act or thing done or omitted to be done by the Port Authority shall be deemed to be a waiver of the right of the Port Authority to terminate this Contract or of any other right or remedies to which the Port Authority may be entitled because of any breach thereof. No waiver by the Port Authority of any default on the part of the Contractor in the performance of any of the terms, covenants and conditions hereof to be performed, kept or observed by the Contractor shall be or be construed to be a waiver by the Port Authority of any other subsequent default in the performance of any of the said terms, covenants and conditions.

F. In addition to all other rights of revocation or termination hereunder and notwithstanding any other provision of this Contract the Port Authority may terminate this Contract and the rights of the Contractor hereunder without cause at any time upon five (5) days written notice to the Contractor and in such event this Contract shall cease and expire on the date set forth in the notice of termination as fully and completely as though such dates were the original expiration date hereof and if such effective date of termination is other than the last day of the month, the amount of the compensation due to the Contractor from the Port Authority shall be prorated when applicable on a daily basis. Such cancellation shall be without prejudice to the rights and obligations of the parties arising out of portions already performed but no allowance shall be made for anticipated profits.

G. Any right of termination contained in this paragraph, shall be in addition to and not in lieu of any and all rights and remedies that the Port Authority shall have at law or in equity consequent upon the Contractor's breach of this Contract and shall be without prejudice to any and all such other rights and remedies. It is hereby specifically agreed and understood that the exercise by the Port Authority of any right of termination set forth in this paragraph shall not be or be deemed to be an exercise by the Port Authority of an election of remedies so as to preclude the Port Authority from any right to money damages it may have for the period prior to the effective date of termination to the original expiration date of the Contract, and this provision shall be deemed to survive the termination of this Contract as aforesaid.

H. If (1) the Contractor fails to perform any of its obligations under this Contract or any other contract between the Port Authority and the Contractor (including its obligation to the Port Authority to pay any claim lawfully made against it by any supplier, subcontractor or worker or other person which arises out of or in connection with the performance of this Contract or any other contract with the Port Authority) or (2) any claim (just or unjust) which arises out of or in connection with this Contract or any other contract between the Port Authority and the Contractor is made against the Port Authority or (3) any

subcontractor under this Contract or any other contract between the Port Authority and the Contractor fails to pay any claims lawfully made against it by any supplier, subcontractor, worker or other third person which arises out of or in connection with this Contract or any other contract between the Port Authority and the Contractor or if in the opinion of the Port Authority any of the aforesaid contingencies is likely to arise, then the Port Authority shall have the right, in its discretion, to withhold out of any payment (final or otherwise) such sums as the Port Authority may deem ample to protect it against delay or loss or to assure the payment of just claims of third persons, and to apply such sums in such manner as the Port Authority may deem proper to secure such protection or satisfy such claims. All sums so applied shall be deducted from the Contractor's compensation. Omission by the Port Authority to withhold out of any payment, final or otherwise, a sum for any of the above contingencies, even though such contingency has occurred at the time of such payment, shall not be deemed to indicate that the Port Authority does not intend to exercise its right with respect to such contingency. Neither the above provisions for rights of the Port Authority to withhold and apply monies nor any exercise or attempted exercise of, or omission to exercise, such rights by the Port Authority shall create any obligation of any kind to such supplier, subcontractors, worker or other third persons. If, however, the payment of any amount due the Contractor shall be improperly delayed, as a result of or with respect to anything contained in this subsection, the Port Authority shall pay the Contractor interest thereon at the rate of 6% per annum for the period of the delay, it being agreed that such interest shall be in lieu of and in liquidation of any damages to the Contractor because of such delay.

I. If the Port Authority has paid any sum or has incurred any obligation or expense which the Contractor has agreed to pay or reimburse the Port Authority, or if the Port Authority is required or elects to pay any sum or sums or incurs any obligations or expense by reason of the failure, neglect or refusal of the Contractor to perform or fulfill any one or more of the conditions, covenants, or agreements contained in this Contract, or as a result of an act of omission of the Contractor contrary to the said conditions, covenants and agreements, the Contractor shall pay to the Port Authority the sum or sums so paid or expense so incurred, including all interests, costs and damages, promptly upon the receipt of the Port Authority's statement therefore. The Port Authority may, however, in its discretion, elect to deduct said sum or sums from any payment payable by it to the Contractor.

J. If the Port Authority pays any installment to the Contractor without reducing said installment as provided in this Contract, it may reduce any succeeding installment by the proper amount, or it may bill the Contractor for the amount by which the installment paid should have been reduced and the Contractor shall pay to the Port Authority any such amount promptly upon receipt of the Port Authority's statement therefore.

K. Until actual payment to the Contractor, its right to any amount to be paid under this Contract (even though such amount has already been certified as due) shall be subordinate to the rights of the Authority under this clause.

L. The Port Authority shall also have the rights set forth above in the event the Contractor shall become insolvent or bankrupt or if its affairs are placed in the hands of a receiver, trustee or assignee for the benefit of creditors.

18. CONTRACTOR PERSONNEL STANDARDS OF PERFORMANCE

The Contractor shall furnish sufficiently trained management, supervisory, technical and operating personnel to perform the services required of the Contractor under this Contract. If, in the opinion of the Director, any of

the Contractor's personnel are not satisfactory in the performance of services to be furnished hereunder, the Contractor shall remove such personnel and replace them with personnel satisfactory to the Director.

At the time the Contractor is carrying out its operations there may be other persons working physically in the vicinity or in the same logical or technical infrastructure. The Contractor shall so conduct its operations as to work in harmony and not endanger, interfere with or delay the operations of others, all to the best interests of The Authority and others and as may be directed by the Director.

19. HIGH SECURITY AREAS

A. Services under the Contract may be required in high security areas, as the same may be designated by the Manager from time to time. The Port Authority shall require the observance of certain security procedures with respect to the high security areas, which may include the escort to, at, and/or from said high security areas by security personnel designated by the Contractor or any subcontractor's personnel required to work therein.

B. Twenty-four hours prior to the proposed performance of any work in a high security area, the Contractor shall notify the Manager. The Contractor shall conform to the procedures as may be established by the Manager from time to time and at any time for access to high security areas and the escorting of personnel hereunder. Prior to the start of work, the Contractor shall request a description from the Manager of the high security areas which will be in effect on the commencement date. The description of high security areas may be changed from time to time and at any time by the Manager during the term of the Contract.

20. NOTIFICATION OF SECURITY REQUIREMENTS

The Authority has the responsibility of ensuring safe, reliable and secure transportation facilities, systems, and projects to maintain the well-being and economic competitiveness of the region. Therefore, the Authority reserves the right to deny access to certain documents, sensitive security construction sites and facilities (including rental spaces) to any person that declines to abide by Port Authority security procedures and protocols, any person with a criminal record with respect to certain crimes or who may otherwise poses a threat to the construction site or facility security. The Authority reserves the right to impose multiple layers of security requirements on the Contractor, its staff and subcontractors and their staffs depending upon the level of security required, or may make any amendments with respect to such requirements as determined by the Authority.

These security requirements may include but are not limited to the following:

- Execution of Non-Disclosure and Confidentiality Agreements and Acknowledgements

- Contractor/ Subcontractor identity checks and background screening

The Port Authority's designated background screening provider may require inspection of not less than two forms of valid/current government issued identification (at least one having an official photograph) to verify staff's name and residence; screening federal, state, and/or local criminal justice agency information databases and files; screening of any terrorist identification files; access identification to include some form of biometric security methodology such as fingerprint, facial or iris scanning, or the like.

The Contractor may be required to have its staff, and any subcontractor's staff, material-men, visitors or others over whom the Contractor/subcontractor has control, authorize the Authority or its designee to perform background checks, and a personal identity verification check. Such authorization shall be in a form acceptable to the Authority. The Contractor and subcontractors may also be required to use an organization designated by the Authority to perform the background checks.

As of January 29, 2007, the Secure Worker Access Consortium (S.W.A.C.) is the only Port Authority approved provider to be used to conduct background screening and personal identity verification, except as otherwise required by federal law and/or regulation (such as the Transportation Worker Identification Credential for personnel performing in secure areas at Maritime facilities). Information about S.W.A.C., instructions, corporate enrollment, online applications, and location of processing centers can be found at http://www.secureworker.com, or S.W.A.C. may be contacted directly at (877) 522-7922 for more information and the latest pricing. The cost for said background checks for staff that pass and are granted a credential shall be reimbursable to the Contractor (and its subcontractors) as an out-of-pocket expense as provided herein. Staff that are rejected for a credential for any reason are not reimbursable.

- Issuance of Photo Identification Credential

No person will be permitted on or about the Authority construction site or facility (including rental spaces) without a facility-specific photo identification credential approved by the Authority. If the authority requires facility-specific identification credential for the Contractor's and the subcontractor's staff, the Authority will supply such identification at no cost to the Contractor or its subcontractors. Such facility-specific identification credential shall remain the property of the Authority and shall be returned to the Authority at the completion or upon request prior to completion of the individual's assignment at the specific facility. It is the responsibility of the appropriate Contractor or subcontractor to immediately report to the Authority the loss of any staff member's individual facility-specific identification credential. The Contractor or subcontractor shall be billed for the cost of the replacement identification credential. Contractor's and subcontractor's staff shall display Identification badges in a conspicuous and clearly visible manner, when entering, working or leaving an Authority construction site or facility.

Employees may be required to produce not less than two forms of valid/current government issued identification having an official photograph and an original, unlaminated social security card for identify and SSN verification. Where applicable, for sensitive security construction sites or facilities, successful completion of the application, screening and identity verification for all employees of the Contractor and subcontractors shall be completed prior to being provided a S.W.A.C. ID Photo Identification credential.

- Access control, inspection, and monitoring by security guards

The Authority may provide for Authority construction site or facility (including rental spaces) access control, inspection and monitoring by Port Authority Police or Authority retained contractor security guards. However, this provision shall not relieve the Contractor of its responsibility to secure its equipment and work and that of its subconsultant/subcontractor's and service suppliers at the Authority construction site or facility (including rental spaces). In addition, the Contractor, subcontractor or service provider is not permitted to take photographs, digital images, electronic copying and/or electronic transmission or video recordings or make sketches on any other medium at the Authority construction sites or facilities (including rental spaces), except when necessary to perform the Work under this Contract, without prior written permission from the Authority. Upon request, any photograph, digital images, video recording or sketches made of the Authority construction site or facility shall be submitted to the Authority to determine compliance with this paragraph, which submission shall be conclusive and binding on the submitting entity.

21. INSURANCE PROCURED BY THE CONTRACTOR

The Contractor shall take out, maintain, and pay the premiums on Commercial General Liability Insurance, including but not limited to premises-operations, products-completed operations, and independent contractors coverage, with a contractual liability endorsement covering the obligations assumed by the contractor under this contract, AND, if vehicles are to be used to carry out the performance of this Contract, then the Contractor shall also take out, maintain, and pay the premiums on Automobile Liability Insurance covering owned, non-owned, and hired autos in the following minimum limits:

Commercial General Liability Insurance - **$ 5 million combined single limit per occurrence for bodily injury and property damage liability.**

Automobile Liability Insurance - **$ 5 million combined single limit per accident for bodily injury and property damage liability.**

In addition, the liability policy (ies) shall name The Port Authority of NY and NJ and its related entities as additional insureds, including but not limited to premise-operations, products-completed operations on the Commercial General Liability Policy. Moreover, the Commercial General Liability Policy shall not contain any provisions for exclusions from liability other than provisions for exclusion from liability forming part of the most up to date ISO form or its equivalent unendorsed Commercial General Liability Policy. The liability policy (ies) and certificate of insurance shall contain cross-liability language providing severability of interests so that coverage will respond as if separate policies were in force for each insured. These insurance requirements shall be in effect for the duration of the contract to include any warrantee/guarantee period.

The certificate of insurance and liability policy (ies) must contain the following endorsement for the above liability coverages:

"The insurer(s) shall not, without obtaining the express advance written permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the Tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority, or the provisions of any statutes respecting suits against the Port Authority."

The Contractor shall also take out, maintain, and pay premiums on Workers' Compensation Insurance in accordance with the requirements of law in the state(s) where work will take place, and Employer's Liability Insurance with limits of not less than
$1 million each accident.

In addition, the policy (ies) shall include the Authority and its wholly owned entities as an additional insured and the policy (ies) and its certificate must be specifically endorsed to contain a provision that the policy may not be canceled, terminated, or modified without thirty (30) days' prior written notice to the Port Authority of NY and NJ, Attn: Facility Contract Administrator, at the location where the work will take place and to the General Manager, Risk Financing.

The Port Authority may at any time during the term of this agreement change or modify the limits and coverages of insurance. Should the modification or change results in an additional premium, The General Manager, Risk Financing for the Port Authority may consider such cost as an out-of-pocket expense.

Within five (5) days after the award of this agreement or contract and prior to the start of work, the Contractor must submit an original certificate of insurance, to the Port Authority of NY and NJ, Facility Contract Administrator, at the location where the work will take place. This certificate of insurance MUST show evidence of the above insurance policy (ies), stating the agreement/contract number prior to the start of work. The General Manager, Risk Financing must approve the certificate(s) of insurance before any work can begin. Upon request by the Port Authority, the Contractor shall furnish to the General Manager, Risk Financing, a certified copy of each policy, including the premiums.

If at any time the above liability insurance should be canceled, terminated, or modified so that the insurance is not in effect as above required, then, if the Manager shall so direct, the Contractor shall suspend performance of the contract at the premises. If the contract is so suspended, no extension of time shall be due on account thereof. If the contract is not suspended (whether or not because of omission of the Manager to order suspension), then the Authority may, at its option, obtain insurance affording coverage equal to the above required, the cost of such insurance to be payable by the Contractor to the Port Authority.

Renewal certificates of insurance or policies shall be delivered to the Facility Contract Administrator, Port Authority at least fifteen (15) days prior to the expiration date of each expiring policy. The General Manager, Risk Financing must approve the renewal certificate(s) of insurance before work can resume on the facility. If at any time any of the certificates or policies shall become unsatisfactory to the Port Authority, the Contractor shall promptly obtain a new and satisfactory certificate and policy.

The requirements for insurance procured by the Contractor shall not in any way be construed as a limitation on the nature or extent of the contractual obligations assumed by the Contractor under this contract. The insurance requirements are not a representation by the Authority as to the adequacy of the insurance to protect the Contractor against the obligations imposed on them by law or by this or any other Contract. ***[CITS#4219N]***

22. ASSIGNMENTS AND SUBCONTRACTS

Any assignment or other transfer by the Contractor of this Contract or any part hereof or of any of its rights hereunder or of any monies due or to become due hereunder and any delegation of any of its duties hereunder without the express written consent of the Director shall be void and of no effect as to the Authority, provided, however, that the Contractor may subcontract portions of the Work to such persons as the Director, may, from time to time, expressly approve in writing. For each individual, partnership or corporation proposed by the Contractor as a subcontractor, the Contractor shall submit to the Authority a certification or, if a certification cannot be made, a statement by such person, partnership or corporation to the same effect as the certification or statement required from the Contractor pursuant to the clauses of the "Integrity" Section entitled "Certification of No Investigation Indictment, Conviction, Debarment Suspension, Disqualification and Disclosure of Other Information and "Non-Collusive Bidding and Code of Ethics Certification; Certification of No Solicitation Based on Commission, Percentage, Brokerage Contingent or Other Fee". All further subcontracting by any subcontractor shall also be subject to such approval of the Director.

No consent to any assignment or other transfer, and no approval of any subcontractor, shall under any circumstances operate to relieve the Contractor of any of its obligations; no subcontract, no approval of any subcontractor and no act or omission of the Authority or the Director shall create any rights in favor of such subcontractor and against the Authority; and as between the Authority and the Contractor, all assignees, subcontractors, and other transferees shall for all purposes be deemed to be agents of the Contractor.

Moreover, all subcontractors and all approvals of subcontractors, regardless of their form, shall be deemed to be conditioned upon performance by the subcontractor in accordance with this Contract; and if any subcontractor shall fail to perform the Contract to the satisfaction of the Director, the Director shall have the absolute right to rescind his approval forthwith and to require the performance of the Contract by the Contractor personally or through other approved subcontractors.

23. CERTAIN CONTRACTOR'S WARRANTIES

The Contractor represents and warrants:

a. That it is financially responsible and experienced in, and competent to perform this Contract; that no representation, promise or statement, oral or in writing, has induced it to submit its Response, saving only those contained in the papers expressly made part of this Contract; that the facts stated or shown in any papers submitted or referred to in connection with its Response are true; and, if the Contractor be a corporation, that it is authorized to perform this Contract;

b. That it has carefully examined and analyzed the provisions and requirements of this Contract, that from its own investigations it has satisfied itself as to the nature of all things needed for the performance of this Contract, the general and local conditions and all other matters which in any way affect this Contract or its performance, and that the time available to it for such examination, analysis, inspection and investigations was adequate;

c. That the Contract is feasible of performance in accordance with all its provisions and requirements and that it can and will perform it in strict accordance with such provisions and requirements;

d. That no Commissioner, officer, agent or employee of the Authority is personally interested directly or indirectly in this Contract or the compensation to be paid hereunder;

e. That, except only for those representations, statements or promises expressly contained in this Contract, no representation, statement or promise, oral or in writing, of any kind whatsoever by the Authority, its Commissioners, officers, agents, employees or consultants has induced the Contractor to enter into this Contract or has been relied upon by the Contractor, including any with reference to: (1) the meaning, correctness, suitability or completeness of any provisions or requirements of this Contract; (2) the nature, existence or location of materials, structures, obstructions, utilities or conditions, which may be encountered at the installation sites; (3) the nature, quantity, quality or size of the materials, equipment, labor and other facilities needed for the performance of this Contract; (4) the general or local conditions which may in any way affect this Contract or its performance; (5) the price of the Contract; or (6) any other matters, whether similar to or different from those referred to in (1) through (5) immediately above, affecting or having any connection with this Contract, the bidding thereon, any discussions thereof, the performance thereof or those employed therein or connected or concerned therewith.

f. That, notwithstanding any requirements of this Contract, any inspection or approval of the Contractor's services by the Authority, or the existence of any patent or trade name, the Contractor nevertheless warrants and represents that the services and any intellectual property supplied to the Authority hereunder shall be of the best quality and shall be fully fit for the purpose for which they are to be used. The Contractor unconditionally guarantees against defects or failures of any kind, including defects or failures in design, workmanship and materials, excepting solely defects or failures which the Contractor demonstrates to the satisfaction of the Authority have arisen solely from accident, abuse or fault of the Authority occurring after issuance of Final Payment hereunder and not due to fault on the Contractor's part. In the event of defects or failures in said services, or any part thereof, then upon receipt of notice thereof from the Authority, the Contractor shall correct such defects or failures as may be necessary or desirable, in the sole opinion of the Authority, to comply with the above guaranty.

g. Moreover, the Contractor accepts the conditions at the sites of work as they may eventually be found to exist and warrants and represents that it can and will perform the Contract under such conditions and that all materials, equipment, labor and other facilities required because of any unforeseen conditions (physical or otherwise) shall be wholly at its own cost and expense, anything in this Contract to the contrary notwithstanding. The Authority is responsible for all facility power.

h. Nothing in the Scope of Work or any other part of the Contract is intended as or shall constitute a representation by the Authority as to the feasibility of performance of this Contract or any part thereof. Moreover, the Authority does not warrant or represent either by issuance of the Scope of Work or by any provision of this Contract as to time for performance or completion or otherwise that the Contract may be performed or completed by the times required herein or by any other times.

i. The Contractor further represents and warrants that it was given ample opportunity and time and by means of this paragraph was requested by the Authority to review thoroughly all documents forming this Contract prior to execution of this Contract in order that it might request inclusion in this Contract of any statement, representation, promise or provision which it desired or on which it wished to place reliance; that it did so review said documents; that either every such statement, representation, promise or provision has been included in this Contract or else, if omitted, that it expressly relinquishes the benefit of any such omitted statement, representation, promise or provision and is willing to perform this Contract without claiming reliance thereon or making any other claim on account of such omission.

j. The Contractor further recognizes that the provisions of this clause (though not only such provisions) are essential to the Authority's consent to enter into this Contract and that without such provisions; the Authority would not have entered into this Contract.

24. RIGHTS AND REMEDIES OF THE CONTRACTOR

Inasmuch as the Contractor can be adequately compensated by money damages for any breach of this Contract which may be committed by the Authority, the Contractor expressly agrees that no default, act or omission of the Authority shall constitute a material breach of this Contract, entitling it to cancel or rescind it or (unless the Director shall so direct) to suspend or abandon performance.

25. TAX EXEMPTIONS

Purchases of services and tangible personal property by the Port Authority are exempt from New York and New Jersey state and local sales and compensating use taxes. (Sales Taxes). Therefore, the Port Authority's purchase of the Contractor's services under this Contract is exempt from Sales Taxes. Accordingly, the Contractor must not include Sales Taxes in the price charged to the Port Authority for the Contractor's services under this Contract.

26. TITLE TO EQUIPMENT

Title to all equipment to be furnished hereunder by the Contractor shall be transferred to the Authority upon its delivery to the installation site.

The Contractor shall furnish such bills of sale and affidavits of title as the Authority shall reasonably request.

27. NOTICE REQUIREMENTS

No claim against the Authority shall be made or asserted in any action or proceeding at law or in equity, and the Contractor shall not be entitled to allowance of such claim, unless the Contractor shall have complied with all requirements relating to the giving of written notice and of information with respect to such claim as provided in this clause. The failure of the Contractor to give such written notice and information as to any claim shall be conclusively deemed to be a waiver by the Contractor of such claim, such written notice and information being conditions precedent to such claim. As used herein "claim" shall include any claim arising out of this Contract (including claims in the nature of breach of contract or fraud or misrepresentation before or subsequent to execution of this Contract and claims of a type which are barred by the provisions of this Contract) for damages, payment or compensation of any nature or for performance of any part of this Contract.

The requirements as to the giving of written notice and information with respect to claims shall be as follows:

A. In the case of any claims for which requirements are set forth elsewhere in this Contract as to notice and information, such requirements shall apply.

B. In the case of all other types of claims, notice shall have been given to the Director, as soon as practicable, and in any case within forty eight (48) hours after occurrence of the act, omission, or other circumstances upon which the claim is or will be based, stating as fully as practicable at the time all information relating thereto. Such information shall be supplemented with any further information as soon as practicable after it becomes or should become known to the Contractor, including daily records showing all costs which the Contractor may be incurring or all other circumstances which will affect any claim to be made which records shall be submitted to the Authority.

C. The above requirements for notices and information are for the purpose of enabling the Authority to avoid waste of public funds by affording it promptly the opportunity to cancel or revise any order, change its plans, mitigate or remedy the effects of circumstances giving rise to a claim or take such other action as may seem desirable and to verify any claimed expense or circumstance as they occur and the requirements herein for such notice and information are essential to this Contract and are in addition to any notice required by statue with respect to suits against the Authority.

   The above referred to notices and information are required whether or not the Authority is aware of the existence of any circumstances which might constitute a basis for a claim and whether or not the Authority has indicated it will consider a claim.

   No, act, omission or statement of any kind shall be regarded as a waiver of any of the provisions of this clause or may be relied upon as such waiver except only either a written statement signed by the Executive Director of the Authority or a resolution of the Commissioners of the Authority expressly stating that a waiver is intended as to any particular provision of this clause, and more particularly, no discussion, negotiation, consideration, correspondence or requests for information with respect to a claim by any Commissioner, officer, employees or agent of the Authority shall be construed as a waiver of any provision of this clause or as authority or apparent authority to effect such a waiver.

   Since merely oral notice or information may cause disputes as to the existence or substance thereof, and since notice, even if written, to other than the Authority representative above designated to receive it may not be sufficient to come to the attention of the representative of the Authority with the knowledge

and responsibility of dealing with the situation, only notice and information complying with the express provisions of this clause shall be deemed to fulfill the Contractor's obligation under this Contract.

28. SERVICE OF NOTICES ON THE CONTRACTOR

Whenever provision is made in this Contract for the giving of any notice to the Contractor, its deposit in any post office box, enclosed in a postpaid wrapper addressed to the Contractor at its office, or its delivery to its office, shall be sufficient service thereof as of the date of such deposit or delivery, except to the extent, if any, otherwise provided in the clause entitled "Submission to Jurisdiction". Until further notice to the Authority the Contractor's office will be that stated in its Response. Notices may also be served personally upon the Contractor; or if a corporation, upon any officer, director or managing or general agent; or if a partnership upon any partner.

29. NO THIRD PARTY RIGHTS

Nothing contained in this Contract is intended for the benefit of third persons, except to the extent that the Contract specifically provides otherwise by use of the words "benefit" or "direct right of action".

30. INDEMNIFICATION AND RISKS ASSUMED BY THE CONTRACTOR

To the extent permitted by law, the Contractor shall indemnify and hold harmless the Port Authority, its Commissioners, officers, representatives and employees from and against all claims and demands, just or unjust, of third persons (including employees, officers, and agents of the Port Authority) arising out of or in any way connected or alleged to arise out of or alleged to be in any way connected with the Contract and all other services and activities of the Contractor under this Contract and for all expenses incurred by it and by them in the defense, settlement or satisfaction thereof, including without limitation thereto, claims and demands for death, for personal injury or for property damage, direct or consequential, whether they arise from the acts or omissions of the Contractor, of the Port Authority, of third persons, or from the acts of God or the public enemy, or otherwise, including claims and demands of any local jurisdiction against the Port Authority in connection with this Contract.

The Contractor assumes the following risks, whether such risks arise from acts or omissions (negligent or not) of the Contractor, the Port Authority or third persons or from any other cause, excepting only risks occasioned solely by affirmative willful acts of the Port Authority done subsequent to the opening of responses on this Contract, and shall to the extent permitted by law indemnify the Port Authority for all loss or damage incurred in connection with such risks:

- The risk of any and all loss or damage to Port Authority property, equipment (including but not limited to automotive and/or mobile equipment), materials and possessions, on or off the premises, the loss or damage of which shall arise out of the Contractor's operations hereunder. The Contractor shall if so directed by the Port Authority, repair, replace or rebuild to the satisfaction of the Port Authority, any and all parts of the premises or the Facility which may be damaged or destroyed by the acts or omissions of the Contractor, its officers, agents, or employees and if the Contractor shall fail so to repair, replace, or rebuild with due diligence the Port Authority may, at its option, perform any of the foregoing work and the Contractor shall pay to the Port Authority the cost thereof.

- The risk of any and all loss or damage of the Contractor's property, equipment (including but not limited to automotive and/or mobile equipment) materials and possessions on the Facility.

- The risk of claim, whether made against the Contractor or the Port Authority, for any and all loss or damages occurring to any property, equipment (including but not limited to automotive and/or mobile equipment), materials and possessions of the Contractor's agents, employees, materialmen and others performing work hereunder.

- The risk of claims for injuries, damage or loss of any kind just or unjust of third persons arising or alleged to arise out of the performance of work hereunder, whether such claims are made against the Contractor or the Port Authority.

If so directed, the Contractor shall at its own expense defend any suit based upon any such claim or demand, even if such suit, claim or demand is groundless, false or fraudulent, and in handling such shall not, without obtaining express advance permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority or the provision of any statutes respecting suits against the Port Authority.

Neither the requirements of the Port Authority under this Contract, nor the approval by the Port Authority of the methods of performance hereunder nor the failure of the Port Authority to call attention to improper or inadequate methods or to require a change in the method of performance hereunder nor the failure of the Port Authority to direct the Contractor to take any particular precaution or other action or to refrain from doing any particular thing shall relieve the Contractor of its liability for injuries to persons or damage to property or environmental impairment arising out of its operations.

The provisions of this numbered clause shall also be for the benefit of the Commissioners, officers, agents, and employees of the Authority, so that they shall have all the rights which they would have under this numbered clause if they were named at each place above at which the Authority is named, including a direct right of action against the Contractor to enforce the foregoing indemnity, except, however, that the Authority acting through its Commissioners may at any time in its sole discretion and without liability on its part cancel the benefit conferred on any of them by this numbered clause, whether or not the occasion for invoking such benefit has already arisen at the time of such cancellation.

Neither the Authority's acceptance of the performance by the Contractor in part or in whole, nor the making of a payment shall release the Contractor from its obligations under this numbered clause.

Moreover, neither the enumeration in this numbered clause nor the enumeration elsewhere in this Contract of particular risks assumed by the Contractor or of particular claims for which it is responsible shall be deemed (a) to limit the effect of the provisions of this numbered clause or of any other clause of this Contract relating to such risks or claims, (b) to imply that it assumes or is responsible for risks or claims only of the type enumerated in this numbered clause or in any other clause of this Contract, or (c) to limit the risks which it would assume or the claims for which it would be responsible in the absence of such enumerations.

31. SUBMISSION TO JURISDICTION

This Contract shall be construed in accordance with the laws of the State of New York. The Contractor hereby consents to the exercise by the courts of the States of New York and New Jersey of jurisdiction *in personam* over it with respect to any matter arising out of or in connection with this Contract and waives any objection to such jurisdiction which it might otherwise have; and the Contractor agrees that mailing of process by registered mail addressed to it at the address of the Contractor set forth in the Response, shall have the same

effect as personal service within the States of New York or New Jersey upon a domestic corporation of said State.

32. AUTHORITY OF THE DIRECTOR

Inasmuch as the public interest requires that the project to which this Contract relates shall be performed in the manner which the Authority, acting through the Director deems best, the Director shall have absolute authority to determine what is or is not necessary or proper for or incidental thereto and the Specifications shall be deemed merely the Director's present determination on this point. In the exercise of this authority, the Director shall have power to alter the Specifications, to require the performance of Work not required by them in their present form, even though of a totally different character from that required, and to vary, increase and diminish the character, quantity and quality of, or to countermand any Work now or hereafter required. If at any time it shall be, from the viewpoint of the Authority, impracticable or undesirable in the judgment of the Director to proceed with or continue the performance of the Contract or any part thereof, whether or not for reasons beyond the control of the Authority, the Director shall have authority to suspend performance of any part or all of the Contract until such time as the Director may deem it practicable or desirable to proceed. Moreover, if at any time it shall be, from the viewpoint of the Authority impracticable or undesirable in the judgment of the Director to proceed with or continue the performance of the Contract or any part thereof for reasons within or beyond the control of the Authority, the Director shall have authority to cancel this Contract as to any or all portions not yet performed and as to any materials not yet installed even though delivered. Such cancellation shall be without prejudice to the rights and obligations of the parties arising out of portions already satisfactorily performed, but no allowance shall be made for anticipated profits. To resolve all disputes and to prevent litigation, the parties to this Contract authorize the Director to decide all questions of any nature whatsoever arising out of, under, or in connection with, or in any way related to or on account of, this Contract (including claims in the nature of breach of contract or fraud or misrepresentation before or subsequent to acceptance of the Contractor's Response and claims of a type which are barred by the provisions of this Contract) and such decision shall be conclusive, final and binding on the parties. The Director's decision may be based on such assistance as he may find desirable. The effect of the decision shall not be impaired or waived by any negotiation or settlement offers in connection with the question decided, whether or not he participated therein, or by any prior decision of him or others, which prior decisions shall be deemed subject to review, or by any termination or cancellation of this Contract.

All such questions shall be submitted in writing by the Contractor to the Director for a decision together with all evidence and other pertinent information in regard to such questions, in order that a fair and impartial decision may be made. In any action against the Authority relating to any such question the Contractor must allege in the complaint and prove such submission, which shall be a condition precedent to any such action. No evidence or information shall be introduced or relied upon in such an action that has not been so presented to the Director.

In the performance of the Contract, the Contractor shall conform to all orders, directions and requirements of the Director and shall perform the Contract to his satisfaction at such times and places, by such methods and such manner and sequence as he may require, and the Contract shall at all stages be subject to his inspection. The Contractor shall employ no equipment, materials, methods or men to which he objects, and shall remove no materials, equipment or other facilities from the Authority site without permission. Upon request, he shall confirm in writing any oral order, direction, requirements or determination.

The enumeration herein or elsewhere of particular instances in which the opinion, judgment, discretion or determination of the Director shall control or in which the Contract shall be performed to his satisfaction or subject to his inspection, shall not imply that only the matters of a nature similar to those enumerated shall

be so governed and performed, but without exception the entire Contract shall be so governed and performed.

This provision shall be construed in accordance with the laws of the State of New York excluding its conflict of law provisions.

33. APPROVALS BY THE DIRECTOR

The approval by the Director of any service required hereunder, shall be construed merely to mean that at that time the Director knows of no good reason for objecting thereto and no such approval shall release the Contractor from its full responsibility for the satisfactory performance of the services to be supplied. "Approved equal" shall mean approved by the Director.

34. CONTRACT REVIEW AND COMPLIANCE AUDITS

The Contractor, and any subcontractors, shall provide prompt system access and reasonable assistance to the Authority's External and Internal Audit staff or its consultants in their performance of work under the contract, including producing specific requested information, extraction of data and reports. The Contractor, and any subcontractors, shall promptly support requests related to audits of the contract and administration tasks and functions covered by this Contract. The Authority will require access to the Contractor's Network Monitoring data center on a periodic basis; the hours to be determined, at the convenience of the authority.

The Authority reserves the right to use and load security and system software to evaluate the level of security and vulnerabilities in all systems which control, collect, dispense, contain, manage, administer, or monitor revenue "owned" by the Port Authority.

35. STATEMENT ON STANDARDS FOR ATTESTATION ENGAGEMENTS (SSAe) NO. 16 Audit

The Contractor shall conduct SSAE 16 or its successor on an annual basis and provide such report to the Authority. The Authority reserves the right to conduct or have agents conduct any additional audits they deem necessary.

36. AUTHORITY ACCESS TO RECORDS

The Authority shall have access during normal business hours to all records and documents of the Contractor relating to any service provided under this Contract, amounts for which it has been compensated, or claims the Contractor should be compensated, by the Authority above those included in the compensation set forth elsewhere herein. All Contractor records shall be kept in the Port District (as defined in McKinney's Unconsolidated Laws §6403). The Contractor shall obtain for the Authority similar access to similar records and documents of subcontractors. Such access shall be given or obtained both before and within a period of three (3) years after Final Payment to the Contractor, provided, however, that if within the aforesaid one year period the Authority has notified the Contractor in writing of a pending claim by the Authority under or in connection with this Contract to which any of the aforesaid records and documents of the Contractor or of its subcontractors relate either directly or indirectly, then the period of such right of access shall be extended to the expiration of six (6) years from the date of Final Payment with respect to the records and documents involved.

The Contractor shall provide, at no cost to the Authority, access for and reasonable assistance to such auditors from the Authority or the Authority's external auditors that may, from time to time, be designated to audit detail records which support Contractor charges to the Authority. The Authority shall have access to the detail

records that support Contractor charges to the Authority for up to three (3) years following the termination of the Contract.

No provision in this Contract giving the Authority a right of access to records and documents is intended to impair or affect any right of access to records and documents that the Authority would have in the absence of such provision.

37. CLAIMS OF THIRD PERSONS

The Contractor undertakes to pay all claims lawfully made against it by subcontractors, materialmen and workmen, and all claims lawfully made against it by other third persons arising out of or in connection with or because of the performance of this Contract and to cause all subcontractors to pay all such claims lawfully made against them.

38. NO DISCRIMINATION IN EMPLOYMENT, EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this Contract, the Contractor agrees as follows:

A. The Contractor is advised to ascertain and comply with all applicable federal, state and local statutes, ordinances, rules and regulations and Federal Executive Orders pertaining to equal employment opportunity, affirmative action and non-discrimination in employment.

B. Without limiting the generality of any other term or provision of this Contract, in the event of the Contractor's non-compliance with any such statutes, ordinances, rules, regulations or orders, this Contract may be canceled, terminated, or suspended in whole or in part.

39. CONTRACTOR'S INTEGRITY PROVISIONS

1. Certification of No Investigation (criminal or civil anti-trust), Indictment, Conviction, Debarment, Suspension, Disqualification and Disclosure of Other Information

By bidding on this Contract, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that the Bidder and each parent and/or affiliate of the Bidder has not

a. been indicted or convicted in any jurisdiction;

b. been suspended, debarred, found not responsible or otherwise disqualified from entering into any contract with any governmental agency or been denied a government contract for failure to meet standards related to the integrity of the Bidder;

c. had a contract terminated by any governmental agency for breach of contract or for any cause based in whole or in part on an indictment or conviction;

d. ever used a name, trade name or abbreviated name, or an Employer Identification Number different from those inserted in the Bid;

e. had any business or professional license suspended or revoked or, within the five years prior to bid opening, had any sanction imposed in excess of fifty thousand dollars ($50,000) as a result of any judicial or administrative proceeding with respect to any license held or with respect to any violation of a federal, state or local environmental law, rule or regulation;

f. had any sanction imposed as a result of a judicial or administrative proceeding related to fraud, extortion, bribery, bid rigging, embezzlement, misrepresentation or anti-trust regardless of the dollar amount of the sanctions or the date of their imposition; and

g. been, and is not currently, the subject of a criminal investigation by any federal, state or local prosecuting or investigative agency and/or a civil anti-trust investigation by any federal, state or local prosecuting or investigative agency.

2. Non-Collusive Bidding, and Code of Ethics Certification, Certification of No Solicitation Based On Commission, Percentage, Brokerage, Contingent or Other Fees

By bidding on this Contract, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that

a. the prices in its bid have been arrived at independently without collusion, consultation, communication or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

b. the prices quoted in its bid have not been and will not be knowingly disclosed directly or indirectly by the Bidder prior to the official opening of such bid to any other bidder or to any competitor;

c. no attempt has been made and none will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition;

d. this organization has not made any offers or agreements or taken any other action with respect to any Authority employee or former employee or immediate family member of either which would constitute a breach of ethical standards under the Code of Ethics dated April 11, 1996, (a copy of which is available upon request) nor does this organization have any knowledge of any act on the part of an Authority employee or former Authority employee relating either directly or indirectly to this organization which constitutes a breach of the ethical standards set forth in said Code;

e. no person or selling agency other than a bona fide employee or bona fide established commercial or selling agency maintained by the Bidder for the purpose of securing business, has been employed or retained by the Bidder to solicit or secure this Contract on the understanding that a commission, percentage, brokerage, contingent, or other fee would be paid to such person or selling agency;

f. the bidder has not offered, promised or given, demanded or accepted, any undue advantage, directly or indirectly, to or from a public official or employee, political candidate, party or party official, or any private sector employee (including a person who directs or works for a private sector enterprise in any capacity), in order to obtain, retain, or direct business or to secure any other improper advantage in connection with this Contract.

g. no person or organization has been retained, employed or designated on behalf of the Bidder to impact any Port Authority determination, where the solicitation is a Request for Proposals, with respect to (i) the solicitation, evaluation or award of this Contract, or (ii) the preparation of specifications or request for submissions in connection with this Contract.

The foregoing certifications shall be deemed to be made by the Bidder as follows:

- if the Bidder is a corporation, such certification shall be deemed to have been made not only with respect to the Bidder itself, but also with respect to each parent, affiliate, director, and officer of the Bidder, as well as, to the best of the certifier's knowledge and belief, each stockholder of the Bidder with an ownership interest in excess of 10%;

- if the Bidder is a partnership, such certification shall be deemed to have been made not only with respect to the Bidder itself, but also with respect to each partner.

Moreover, the foregoing certifications, if made by a corporate Bidder, shall be deemed to have been authorized by the Board of Directors of the Bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the Bidder cannot make the foregoing certifications, the Bidder shall so state and shall furnish with the signed bid a signed statement which sets forth in detail the reasons therefor. If the Bidder is uncertain as to whether it can make the foregoing certifications, it shall so indicate in a signed statement furnished with its bid, setting forth in such statement the reasons for its uncertainty. With respect to the foregoing certification in paragraph "2g", if the Bidder cannot make the certification, it shall provide, in writing, with the signed bid: (i) a list of the name(s), address(es), telephone number(s), and place(s) of principal employment of each such individual or organization; and (ii) a statement as to whether such individual or organization has a "financial interest" in this Contract, as described in the Procurement Disclosure policy of the Authority (a copy of which is available upon request to the Director of the Procurement Department of the Authority). Such disclosure is to be updated, as necessary, up to the time of award of this Contract. As a result of such disclosure, the Port Authority shall take appropriate action up to and including a finding of non-responsibility.

Failure to make the required disclosures shall lead to administrative actions up to and including a finding of non-responsibility.

Notwithstanding that the Bidder may be able to make the foregoing certifications at the time the bid is submitted, the Bidder shall immediately notify the Authority in writing during the period of irrevocability of bids and the term of the Contract, if Bidder is awarded the Contract, of any change of circumstances which might under this clause make it unable to make the foregoing certifications, might render any portion of the certifications previously made invalid, or require disclosure. The foregoing certifications or signed statement shall be deemed to have been made by the Bidder with full knowledge that they would become a part of the records of the Authority and that the Authority will rely on their truth and accuracy in awarding and continuing this Contract. In the event that the Authority should determine at any time prior or subsequent to the award of this Contract that the Bidder has falsely certified as to any material item in the foregoing certifications, has failed to immediately notify the Port Authority of any change in circumstances which might make it unable to make the foregoing certifications, might render any portion of the certifications previously made invalid, or require disclosure, or has willfully or fraudulently furnished a signed statement which is false in any material respect, or has not fully and accurately

represented any circumstance with respect to any item in the foregoing certifications required to be disclosed, the Authority may determine that the Bidder is not a responsible Bidder with respect to its bid on the Contract or with respect to future bids on Authority contracts and may exercise such other remedies as are provided to it by the Contract with respect to these matters. In addition, Bidders are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g. New York Penal Law, Section 175.30 et seq.). Bidders are also advised that the inability to make such certification will not in and of itself disqualify a Bidder, and that in each instance the Authority will evaluate the reasons therefor provided by the Bidder. Under certain circumstances the Bidder may be required as a condition of Contract award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Port Authority, said Monitor to be charged with, among other things, auditing the actions of the Bidder to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Port Authority.

3. Bidder Eligibility for Award of Contracts - Determination by an Agency of the State of New York or New Jersey Concerning Eligibility to Receive Public Contracts

Bidders are advised that the Authority has adopted a policy to the effect that in awarding its contracts it will honor any determination by an agency of the State of New York or New Jersey that a Bidder is not eligible to bid on or be awarded public contracts because the Bidder has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing rate of wage legislation.

The policy permits a Bidder whose ineligibility has been so determined by an agency of the State of New York or New Jersey to submit a bid on a Port Authority contract and then to establish that it is eligible to be awarded a contract on which it has bid because (i) the state agency determination relied upon does not apply to the Bidder, or (ii) the state agency determination relied upon was made without affording the Bidder the notice and hearing to which the Bidder was entitled by the requirements of due process of law, or (iii) the state agency determination was clearly erroneous or (iv) the state determination relied upon was not based on a finding of conduct demonstrating a lack of integrity or violation of a prevailing rate of wage law.

The full text of the resolution adopting the policy may be found in the Minutes of the Authority's Board of Commissioners meeting of September 9, 1993.

4. Contractor Responsibility, Suspension of Work and Termination

During the term of this Contract, the Contractor shall at all times during the Contract term remain responsible. The Contractor agrees, if requested by the Port Authority to present evidence of its continuing legal authority to do business in the States of New Jersey or New York, integrity, experience, ability, prior performance, and organizational and financial capacity.

The Port Authority, in its sole discretion, reserves the right to suspend any or all activities under this Contract, at any time, when it discovers information that calls into question the responsibility of the Contractor. In the event of such suspension, the Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, the Contractor must comply with the terms of the suspension order. Contract activity may resume at such time as the Port Authority issues a written notice authorizing a resumption of performance under the Contract.

Upon written notice to the Contractor, and an opportunity to be heard with appropriate Port Authority officials or staff, the Contract may be terminated by Port Authority at the Contractor's expense where the Contractor is determined by the Port Authority to be non-responsible. In such event, the Port Authority or its designee may complete the contractual requirements in any manner he or she may deem advisable and pursue available legal or equitable remedies for breach, including recovery of costs from Contractor associated with such termination.

5. No Gifts, Gratuities, Offers of Employment, Etc.

At all times, the Contractor shall not offer, give or agree to give anything of value either to a Port Authority employee, agent, job shopper, consultant, construction manager or other person or firm representing the Port Authority, or to a member of the immediate family (i.e., a spouse, child, parent, brother or sister) of any of the foregoing, in connection with the performance by such employee, agent, job shopper, consultant, construction manager or other person or firm representing the Port Authority of duties involving transactions with the Contractor on behalf of the Port Authority, whether or not such duties are related to this Contract or any other Port Authority contract or matter. Any such conduct shall be deemed a material breach of this Contract.

As used herein "anything of value" shall include but not be limited to any (a) favors, such as meals, entertainment, transportation (other than that contemplated by the Contract or any other Port Authority contract), etc. which might tend to obligate the Port Authority employee to the Contractor, and (b) gift, gratuity, money, goods, equipment, services, lodging, discounts not available to the general public, offers or promises of employment, loans or the cancellation thereof, preferential treatment or business opportunity. Such term shall not include compensation contemplated by this Contract or any other Port Authority contract. Where used herein, the term "Port Authority" shall be deemed to include all subsidiaries of the Port Authority.

The Contractor shall insure that no gratuities of any kind or nature whatsoever shall be solicited or accepted by it and by its personnel for any reason whatsoever from the passengers, tenants, customers or other persons using the Facility and shall so instruct its personnel.

In the event that the Contractor becomes aware of the occurrence of any conduct that is prohibited by this clause, it shall report such occurrence to the Port Authority's Office of Inspector General within three (3) business days of obtaining such knowledge. (See "http://www.panynj.gov/inspector-general" for information about to report information to the Office of Inspector General). Failing to report such conduct shall be grounds for a finding of non-responsibility.

In addition, during the term of this Contract, the Contractor shall not make an offer of employment or use confidential information in a manner proscribed by the Code of Ethics and Financial Disclosure dated April 11, 1996, (a copy of which is available upon request to the Office of the Secretary of the Port Authority).

The Contractor shall include the provisions of this clause in each subcontract entered into under this Contract.

6. Conflict of Interest

During the term of this Contract, the Contractor shall not participate in any way in the preparation, negotiation or award of any contract (other than a contract for its own services to the Authority) to which it is contemplated the Port Authority may become a party, or participate in any way in the review or resolution of a claim in connection with such a contract if the Contractor has a substantial financial interest in the contractor or potential contractor of the Port Authority or if the Contractor has an arrangement for future employment or for any other business relationship with said contractor or potential contractor, nor shall the Contractor at any time take any other action which might be viewed as or give the appearance of conflict of interest on its part. If the possibility of such an arrangement for future employment or for another business arrangement has been or is the subject of a previous or current discussion, or if the Contractor has reason to believe such an arrangement may be the subject of future discussion, or if the Contractor has any financial interest, substantial or not, in a contractor or potential contractor of the Authority, and the Contractor's participation in the preparation, negotiation or award of any contract with such a contractor or the review or resolution of a claim in connection with such a contract is contemplated or if the Contractor has reason to believe that any other situation exists which might be viewed as or give the appearance of a conflict of interest, the Contractor shall immediately inform the Director in writing of such situation giving the full details thereof. Unless the Contractor receives the specific written approval of the Director, the Contractor shall not take the contemplated action which might be viewed as or give the appearance of a conflict of interest. The Director may require the Contractor to submit a mitigation plan addressing and mitigating any disclosed or undisclosed conflict, which is subject to the approval of the Director and shall become a requirement, as though fully set forth in this Contract. In the event the Director shall determine that the performance by the Contractor of a portion of its Services under this Agreement is precluded by the provisions of this numbered paragraph, or a portion of the Contractor's said Services is determined by the Director to be no longer appropriate because of such preclusion, then the Director shall have full authority on behalf of both parties to order that such portion of the Contractor's Services not be performed by the Contractor, reserving the right, however, to have the Services performed by others and any lump sum compensation payable hereunder which is applicable to the deleted work shall be equitably adjusted by the parties. The Contractor's execution of this document shall constitute a representation by the Contractor that at the time of such execution the Contractor knows of no circumstances, present or anticipated, which come within the provisions of this paragraph or which might otherwise be viewed as or give the appearance of a conflict of interest on the Contractor's part. The Contractor acknowledges that the Authority may preclude it from involvement in certain disposition/privatization initiatives or transactions that result from the findings of its evaluations hereunder or from participation in any contract, which results, directly or indirectly, from the Services provided by the Contractor hereunder. The Port Authority's determination regarding any questions of conflict of interest shall be final.

7. Definitions

As used in this section, the following terms shall mean:

Affiliate - Two or more firms are affiliates if a parent owns more than fifty percent of the voting stock of each of the firms, or a common shareholder or group of shareholders owns more than fifty percent of the voting stock of each of the firms, or if the firms have a common proprietor or general partner.

Agency or Governmental Agency - Any federal, state, city or other local agency, including departments, offices, public authorities and corporations, boards of education and higher education, public development corporations, local development corporations and others.

Investigation - Any inquiries made by any federal, state or local criminal prosecuting agency and any inquiries concerning civil anti-trust investigations made by any federal, state or local governmental agency. Except for inquiries concerning civil anti-trust investigations, the term does not include inquiries made by any civil government agency concerning compliance with any regulation, the nature of which does not carry criminal penalties, nor does it include any background investigations for employment, or Federal, State, and local inquiries into tax returns.

Officer - Any individual who serves as chief executive officer, chief financial officer, or chief operating officer of the Bidder by whatever titles known.

Parent - An individual, partnership, joint venture or corporation which owns more than 50% of the voting stock of the Bidder.

If the solicitation is a Request for Proposal:

Bid - shall mean Proposal;
Bidder - shall mean Proposer;
Bidding - shall mean submitting a Proposal.

In a Contract resulting from the taking of bids:

Bid - shall mean bid;
Bidder - shall mean Bidder; except and until the Contract has been awarded, then it shall mean Contractor
Bidding - shall mean executing this Contract.

In a Contract resulting from the taking of Proposals:

Bid - shall mean Proposal;
Bidder - shall mean Proposer;
Bidding - shall mean executing this Contract.

40. CONFIDENTIAL INFORMATION/NON-PUBLICATION

A. As used herein, confidential information ("CI") shall mean all information disclosed to the Contractor or the personnel provided by the Contractor hereunder which relates to the Authority's and/or PATH's past, present, and future research, development and business activities including, but not limited to, software and documentation licensed to the Authority or proprietary to the Authority and/or PATH and all associated software, source code procedures and documentation. Confidential information shall also mean any other tangible or intangible information or materials including but not limited to computer identification numbers, access codes, passwords, and reports obtained and/or used during the performance of the Contractor's Services under this Contract.

B. Confidential information shall also mean and include collectively, as per The Port Authority of New York & New Jersey Information Security Handbook (October 15, 2008, corrected as of February, 9 2009), Confidential Proprietary Information, Confidential Privileged Information and information that is labeled, marked or otherwise identified by or on behalf of the Authority so as to reasonably connote that such information is confidential, privileged, sensitive or proprietary in nature. Confidential Information shall also include all work product that contains or is derived from any of the foregoing, whether in whole or in

part, regardless of whether prepared by the Authority or a third-party or when the Authority receives such information from others and agrees to treat such information as Confidential.

The Handbook and its requirements are hereby incorporated into this agreement and will govern the possession, distribution and use of CI if at any point during the lifecycle of the project or solicitation it becomes necessary for the Contractor to have access to CI. Protecting sensitive information requires the application of uniform safeguarding measures to prevent unauthorized disclosure and to control any authorized disclosure of this information within the Port Authority or when released by the Port Authority to outside entities. The following is an outline of some of the procedures, obligations and directives contained in the Handbook:

(1) require that the Contractor and subcontractors, when appropriate, sign Non-Disclosure Agreements (NDAs), or an Acknowledgment of an existing NDA, provided by the Authority as a condition of being granted access to Confidential Information categorized and protected as per the Handbook;
(2) require that individuals needing access to CI be required to undergo a background check, pursuant to the process and requirements noted in § 3.2 of the Information Security Handbook.
(3) require Contractors and commercial enterprises to attend training to ensure security awareness regarding Port Authority information;
(4) specific guidelines and requirements for the handling of CI to ensure that the storage and protection of CI;
(5) restrictions on the transfer, shipping, and mailing of CI information;
(6) prohibitions on the publication, posting, modifying, copying, reproducing, republishing, uploading, transmitting, or distributing CI on websites or web pages. This may also include restricting persons, who either have not passed a pre-screening background check, or who have not been granted access to CI, from viewing such information;
(7) require that CI be destroyed using certain methods, measures or technology pursuant to the requirements set forth in the Handbook;
(8) require the Contractor to mandate that each of its subcontractors maintain the same levels of security required of the Contractor under any Port Authority awarded contract.
(9) prohibit the publication, exchange or dissemination of CI developed from the project or contained in reports, except between Contractors and subcontractors, without prior approval of the Port Authority;
(10) require that CI only be reproduced or copied pursuant to the requirements set forth in the Handbook.

C. The Contractor shall hold all such Confidential Information in trust and confidence for the Authority, and agrees that the Contractor and the personnel provided by the Contractor hereunder shall not, during or after the termination or expiration of this Contract, disclose to any person, firm or corporation, nor use for its own business or benefit, any information obtained by it under or in connection with the supplying of services contemplated by this Contract. The Contractor and the personnel provided by the Contractor hereunder shall not violate in any manner any patent, copyright, trade secret or other proprietary right of the Authority or third persons in connection with their services hereunder, either before or after termination or expiration of this Contract. The Contractor and the personnel provided by the Contractor hereunder shall not willfully or otherwise perform any dishonest or fraudulent acts, breach any security procedures, or damage or destroy any hardware, software or documentation, proprietary or otherwise, in connection with their services hereunder.

D. Audits for Compliance with Security Requirements: The Port Authority may conduct random or scheduled examinations of business practices under this section entitled "CONFIDENTIAL INFORMATION/NON-

PUBLICATION" and the Handbook in order to assess the extent of compliance with security requirements, Confidential Information procedures, protocols and practices, which may include, but not be limited to, verification of background check status, confirmation of completion of specified training, and/or a site visit to view material storage locations and protocols.

E. The Contractor shall not issue nor permit to be issued any press release, advertisement, or literature of any kind, which refers to the Port Authority or to the fact that goods have been, are being or will be provided to it and/or that services have been, are being or will be performed for it in connection with this Contract, unless the vendor first obtains the written approval of the Port Authority. Such approval may be withheld if for any reason the Port Authority believes that the publication of such information would be harmful to the public interest or is in any way undesirable.

41. PROVISIONS OF LAW DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included therein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

42. IINVALID CLAUSES

If any provision of this Contract shall be such as to destroy its mutuality or to render it invalid or illegal, then if it shall not appear to have been so material that without it the Contract would not have been made by the parties, it shall not be deemed to form part thereof but the balance of the Contract shall remain in full force and effect.

43. NO ESTOPPEL OR WAIVER

The Authority shall not be precluded or estopped by any acceptance, certificate or payment, final or otherwise, issued or made under this Contract or otherwise issued or made by it, the Director or any officer, agent or employee of The Authority, from showing at any time the true amount and character of Work performed, or from showing that any such acceptance, certificate or payment is incorrect or was improperly issued or made; and The Authority shall not be precluded or estopped, notwithstanding any such acceptance, certificate or payment, from recovering from the Contractor any damages which it may sustain by reason of any failure on its part to comply strictly with this Contract, and any monies which may be paid to it or for its account in excess of those to which it is lawfully entitled.

44. NON-LIABILITY OF THE AUTHORITY REPRESENTATIVES

Neither the Commissioners of the Authority, nor any officer, agent, or employee thereof shall be charged personally by the Contractor with any liability or held liable under any term or provision of this Contract, or because of its execution or attempted execution, or because of any breach hereof.

45. MODIFICATION OF CONTRACT

No change in or modification, termination or discharge of this Contract, in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by the party to be charged therewith or his duly authorized representative, provided, however, that any change in or modification, termination or discharge of this Contract expressly provided for in this Contract shall be effective as so provided.

46. M/WBE GOOD FAITH PARTICIPATION

The Contractor shall use every good-faith effort to meet the goals set forth in the clause of the Selection Process Document entitled "M/WBE Subcontracting Provisions" for participation by Port Authority certified M/WBEs as defined in this document, in the purchasing and subcontracting opportunities associated with this contract, including purchase of equipment, supplies and labor services.

Good Faith efforts to include participation by MBEs/WBEs shall include the following:

1) Dividing the services and materials to be procured into small portions where feasible;
2) Giving reasonable advance notice of specific subcontracting and purchasing opportunities to such firms as may be appropriate;
3) Soliciting services and materials from M/WBEs, which are certified by the Port Authority;
4) Ensuring that provision is made for timely progress payments to the M/WBEs and;
5) Observance of reasonable commercial standards of fair dealing in the respective trade or business.

Either prior or subsequent to Contract award, the Contractor may request a full or partial waiver of the M/WBE participation goals set forth in this Contract by providing documentation demonstrating to the Manager, for approval by the Port Authority's Office of Business Diversity and Civil Rights, that its good faith efforts did not result in compliance with the goals set forth above because participation by eligible M/WBEs could not be obtained at a reasonable price or that such M/WBEs were not available to adequately perform as subcontractors. The Contractor shall provide written documentation in support of its request to the Manager. The documentation shall include, but not be limited to, documentation demonstrating good faith efforts as described above, which may include, proof that the Authority's directory does not contain M/WBEs in this specific field of work, a list of organizations contacted to obtain M/WBEs, and/or a list of M/WBEs contacted and their price quotes. If approved by the Authority's Office of Business Diversity and Civil Rights, the Manager will provide written approval of the modified or waived M/WBE Participation Plan.

Subsequent to Contract award, all changes to the M/WBE Participation Plan must be submitted via a modified M/WBE Participation Plan to the Manager for review and approval by the Authority's Office of Business Diversity and Civil Rights. For submittal of modifications to the M/WBE Plan, Contractors are directed to use form PA3749C, which may be downloaded at http://www.panynj.gov/business-opportunities/become-vendor.html. The Contractor shall not make changes to its approved M/WBE Participation Plan or substitute M/WBE subcontractors or suppliers for those named in their approved plan without the Manager's prior written approval. Unauthorized changes or substitutions, including performing the work designated for a subcontractor with the Contractor's own forces, shall be a violation of this section. Progress toward attainment of M/WBE participation goals set forth herein will be monitored throughout the duration of this Contract.

The Contractor shall also submit to the Manager, along with invoices, the Statement of Subcontractor Payments as the M/WBE Participation Report, form PA3968, which may be downloaded at http://www.panynj.gov/business-opportunities/become-vendor.html. The Statement must include the name and business address of each M/WBE subcontractor and supplier actually involved in the Contract, a description of the work performed and/or product or service supplied by each such subcontractor or supplier, the date and amount of each expenditure, and such other information that may assist the Manager in determining the Contractor's compliance with the foregoing provisions.

If, during the performance of this Contract, the Contractor fails to demonstrate good faith efforts in carrying out its M/WBE Participation Plan and the Contractor has not requested and been granted a full or partial waiver of the M/WBE participation goals set forth in this Contract, the Authority will take into consideration the Contractor's failure to carry out its M/WBE Participation Plan in its evaluation for award of future Authority contracts.

47. HARMONY

A. The Contractor shall not employ any persons or use any labor, or use or have any equipment, or permit any condition to exist which shall or may cause or be conducive to any labor complaints, troubles, disputes or controversies at the Facility which interfere or are likely to interfere with the operation of the Port Authority or with the operations of lessees, licensees or other users of the Facility or with the operations of the Contractor under this Contract.

The Contractor shall immediately give notice to the Port Authority (to be followed by written notices and reports) of any and all impending or existing labor complaints, troubles, disputes or controversies and the progress thereof. The Contractor shall use its best efforts to resolve any such complaint, trouble, dispute or controversy. If any type of strike, boycott, picketing, work stoppage, slowdown or other labor activity is directed against the Contractor at the Facility or against any operations of the Contractor under this Contract, whether or not caused by the employees of the Contractor, and if any of the foregoing, in the opinion of the Port Authority, results or is likely to result in any curtailment or diminution of the services to be performed hereunder or to interfere with or affect the operations of the Port Authority , or to interfere with or affect the operations of lessees, licensees, or other users of the Facility or in the event of any other cessation or stoppage of operations by the Contractor hereunder for any reason whatsoever, the Port Authority shall have the right at any time during the continuance thereof to suspend the operations of the Contractor under this Contract, and during the period of the suspension the Contractor shall not perform its services hereunder and the Port Authority shall have the right during said period to itself or by any third person or persons selected by it to perform said services of the Contractor using the equipment which is used by the Contractor in its operations hereunder as the Port Authority deems necessary and without cost to the Port Authority. During such time of suspension, the Contractor shall not be entitled to any compensation. Any flat fees, including management fees, shall be prorated. Prior to the exercise of such right by the Port Authority, it shall give the Contractor notice thereof, which notice may be oral. No exercise by the Port Authority of the rights granted to it in the above subparagraph shall be or be deemed to be a waiver of any rights of termination or revocation contained in this Contract or a waiver of any rights or remedies which may be available to the Port Authority under this Contract or otherwise.

B. During the time that the Contractor is performing the Contract, other persons may be engaged in other operations on or about the worksite including Facility operations, pedestrian, bus and vehicular traffic and other Contractors performing at the worksite, all of which shall remain uninterrupted.

The Contractor shall so plan and conduct its operations as to work in harmony with others engaged at the site and not to delay, endanger or interfere with the operation of others (whether or not specifically mentioned above), all to the best interests of the Port Authority and the public as may be directed by the Port Authority.

48. INCREASE AND DECREASE IN AREAS OR FREQUENCIES

The Director shall have the right, at any time and from time to time in his sole discretion, to increase and/or decrease the services required hereunder, frequencies of all or any part of the services required hereunder or to add areas not described herein in the Specifications or remove areas or parts of areas which are hereunder so described. In the event the Superintendent/Manager decides to change any frequencies or areas such change shall be by written notice not less than 24 hours, said changes to be effective upon the date specified in said notice.

In the event of an increase or decrease in services, areas or frequencies, the Contractor's compensation will be adjusted to reflect such change in areas or frequencies utilizing the applicable hourly rates for such services (for the applicable Contract year) as set forth on the Authority-accepted Pricing Sheet(s).

Where no specific Unit Price has been quoted for the type of services to be increased or decreased, the Manager shall have the right to negotiate the compensation to reflect such change, whether an increase or decrease in areas or frequencies, which, in the opinion of the Manager, are necessary to complete the work, by multiplying the increased or decreased amount by the negotiated rate.

In the event of a decrease in services, the Contractor shall not be entitled to compensation for Work not performed. If decreases in services result from the removal of systems administration from any system included herein, the prices for application management of the removed systems will be in accordance with the prices for the applicable services as they appear on Attachment E.1, as accepted by the Port Authority, as same may have been adjusted hereunder.

No such changes in areas or frequencies will be implemented which results in a total increase or decrease in compensation that is greater than 50% of the Total Estimated Contract Price for the Base Term or, if changes are to be implemented during an Option Period, 50% for that Option Period.

Any increases in frequencies or areas shall not constitute Extra Work and, as such, shall not be limited by the Extra Work provisions of this Contract.

ATTACHMENT C: SCOPE OF WORK

The Contractor shall provide on-site User Application Support and on-site Application Management and Administration Support of certain systems used at John F. Kennedy (JFK), LaGuardia (LGA), and Newark Liberty International (EWR) Airports, including but not limited to:

- User Application Support is required for the Airport Security Airside Access Control System (ASAAC), Airport Checkpoint Digital CCTV (ACDTV), and the Terminal Operations Management System (TOMS).

- User Application Support, Application Management and Systems Administration is required for the Parking Revenue Control System (PRCS), Ground Transportation Information System (GTIS), Identity Management and Credentialing System (IMCS, when built) at JFK, LGA, and EWR, and CrossMatch Fingerprint Workstations at JFK, LGA and EWR, MorphoCheck Handheld Terminal (HHT) at JFK, LGA and EWR, and the DataLink System at JFK.

As demonstrated in Attachment D (Description of Current Distributed Systems), these systems are divided into three categories or classes:

- Class 1, Distributed System: Defined as systems located at an airport with many end-of-line devices. The Contractor will provide application support, database support, systems administration, and user applications support. Distributed Systems include the PRCS, the GTIS, and the IMCS.

- Class 2, Database Systems: Defined as a system with connectivity to other systems and required at the airports. The Contractor will provide application support, database support, systems administration, and user application support. Database Systems include DataLink, CrossMatch and MorphoCheck Handheld Terminal.

- Class 3, User Application Support System: Defined as a system requiring support to the users of the application, with such support being provided at the airports. User Application Support Systems include ASAAC, ACDTV, TOMS.

Persons employed to work under this RFP must be lawfully permitted to work in this country and physically present themselves for job-related duties at Port Authority Facilities.

Functions to be performed by the Contractor for Distributed Systems, Database Systems and Systems requiring User Application Support include, but are not limited to the following:

1. **User Application Support (Class 3):** The Contractor's tasks shall include but not be limited to:

   - Providing licensed/certified VERINT CCTV and LENEL – Security knowledge to support user applications;
     - As directed by the Authority, the Contractor shall view the recordings to locate specific time period of a recording for investigations;
     - Perform Video Downloads from ACTDV system;
     - Identify Time & Location Of Specific Events;
     - Compile Investigation Packages, as provided through the Verint CCTV System;
     - Upload TSA files from Security System Files to Clearing House;
     - As requested by the Port Authority, change the door access (e.g. Pin Lock etc.) of the System

- Identify any errors from application and report them to the Authority, including its HelpDesk, as applicable and as per the Authority's escalation procedure.
- Match information file from the ASAAC system with CrossMatch file;
- Perform approximately 10 validation programs per year;
- Provide approximately 300 report runs a year;
- Check all cameras from the monitoring station and perform once per shift VERINT Review to determine if the cameras are in the correct location and that each one is recording actual video;
- Review and keep updated CCTV database of cameras;
- Convert all user application warnings and errors into non-technical terms and create the necessary escalation based on those warnings and errors for Operation Management;

- TOMS
  - Configure Flight Information Display System (FIDS) monitors.
  - Check daily that all monitor are active through the application.
  - Check daily that data obtained by the Authority from the firm OAG is being updated into the system.

2. **Distributed / Database Systems and User Application Support Systems (Classes 1, 2 and 3)**: The Contractor shall provide the following services related to the relevant categories of support:

- Business Application Administration & Analysis (just Class 1 and Class 2 Systems):
  - Gathering and documenting business requirements and translating them into functional system requirements, technical operational criteria, and operational design specifications;
  - Acquiring data, gathered from a system or multiple systems, for analysis;
  - Creating and modifying the Authority's existing or creating Business Resumption Plan.

- Data Mining & Generate Reports:
  - Discovering hidden patterns in a group of data that can be used to predict future behavior or discover relationships (All Classes).
  - Conducting investigative studies to observe different relationships between databases for the purposes of trend analysis and forecasting (approximately 100 per year for systems in All Classes);
  - Gathering and documenting business requirements and translating them into functional system design specifications (approximately 60 per year for systems in all Classes);
  - Acquiring data, gathered from a system or multiple systems, for analysis (approximately 60 per year for systems in All Classes);
  - Creating business reports from an analysis of the database (approximately 300 per year for all systems just in Class 1 and Class 2).

- Application knowledge - Application configuration (just Class 1 and Class 2 Systems):
  - Obtaining a working knowledge of the tools to configure and manage the systems;
  - Making application configuration changes (approximately 300 per year for all systems in Class 1 and Class 2);
  - Implementing application configuration changes to meet internal and external audits, as directed by the Contract Manager (approximately one per year per system in Class 1 and Class 2).

- Application Monitoring (just Class 1 and Class 2 Systems):
    - Logon Administration – Ongoing tasks
        - Review all application logons/passwords on systems for activity once per day and review access permissions once per day.
        - Review Privileges once per day.
        - Review all application logs at 9:00 AM and at 3:00 PM each day;
    - Logon Administration – Initial Efforts
        - Check that all passwords have been changed as per Standards and Guidelines for Port Authority Technology;
    - Develop daily check sheet for daily review of applications. This checklist shall be completed in the first 30 days of Contract Commencement. This checklist shall be updated within 30 days of all system upgrades or as new equipment is added;
    - Check physical hardware daily, notify the Authority, and escalate through the Authority's Helpdesk;
    - Review all application global settings and monitor that they are not changed;
    - Review all application components, document them, and monitor that they are not changed;
    - Log all any faults from user observations or calls made by end users from the Authority;
    - Interface with the Authority and the application provider to assist in fault resolution when requested, by monitoring application errors, application warnings, application information messages and other diagnostic screens from the application;
    - Log all Application Problems and log responses of trouble calls as well as identify any systemic problems. The Contractor shall create a form to log these issues in shared folder that will be used to keep track of all requests. Issues may be application-oriented or issues that were sent to the Authority's Helpdesk for resolution or to the application provider. The log shall be kept up to date such that all problems/responses are recorded within 24 hours of the event;
    - Ensure that all application faults have been properly completed and corrected and that there are no collateral problems either from the original fault or from the measures taken to correct the fault;
    - On at least a weekly basis, provide system-generated and or manual logs as required to collect, maintain, and provide regular reports on the health of the application and the statistics on health of systems;
    - Take measures to ensure that the application continues to be effective thorough industry best practices and the systems' performance monitoring, and recommend corrective action to correct capacity or performance issues;
    - Create a Business Resumption plan within 120 days of Contract Commencement working with the applicable application maintenance provider to produce a Disaster Recovery plan for each application;
    - Track problems and identify trends once a day;
    - Convert all application warnings and errors into non-technical terms and create the necessary escalation based on those warnings and errors for the Authority;
    - Check daily with the Authority's Landside Control Center (LCC) for any incidents or problems on the systems , and when called by LCC, assist in explaining incidents/problems;
    - Application Health Checking:
        - Identifying problems / Incidents;
        - Notifying application provider and having corrective maintenance done;
        - Follow-up on all incidents to completion;
        - Checking Logs.
    - Identify systemic problems;

- If requested, assist the application providers and the Authority in identifying network problems.

- Application Administration, Programming and Application Database Management. The technical application management of systems such as Microsoft SQL and ORACLE (just Class 1 and Class 2 Systems).
  - Supporting application upgrades when required (approximately 10 per year per system), and in integrating a new system (approximately one per year per system listed in Attachment D);
  - Performing, revising, updating, and creating the annual review of the application Best Practices Manual (approximately one per year per system listed in Attachment D);
  - Supporting the maintenance provider in an application administrative capacity in installing new equipment, when required;
  - Provide SQL Reports – Approximately 300 per year
  - Application Database Management
    - Validate that all data is being captured correctly
    - Validate that the data in Database Columns and Rows are being populated correctly.
    - Create SQL queries

- Training (All Classes):
  - User application training;
  - Providing limited group training (approximately one per year per system listed in Attachment D).

- Applications Server Software Integration and Deployment (just Class 1 and Class 2 Systems).
  - Consult and advise on all upgrade deployment and application integration.

- Platform Migration (just Class 1 and Class 2 Systems):
  - Support for application migration to new operating system platform.

- WEB Application Programming and Application Programming (just Class 1 and Class 2 Systems)
  - Application programming – Approximately 3 programs per year having approximately 5000 lines of code.

- Technology Consulting: (All Classes)
  - CCTV Consulting on VERINT
  - CCTV Consulting on Surveillance Analytics
  - CCTV Consulting on Cameras and related equipment
  - Provide the services of a senior Security CCTV / DVR expert to evaluate and consult on CCTV technology, camera placement, types of lenses, field of views, and analytics surveillance software.
  - Security Systems Consulting & Integration
  - Network Consulting
  - Future Technology Integration:
    - Testing New Application and Equipment;
    - Piloting New technology;
    - Test equipment purchased by the Authority for future; technology integration;
    - Provide expertise to evaluate and consult on CCTV technology, camera placement,

types of lenses, field of views, and surveillance analytics.

- Develop scope For New Technology or Upgrading Technology
  - Creating Functional Specifications
  - Concept of Operations
  - Technical Operational Criteria

- Business Task Analyst – (Functional Analyst at JFK, LGA, and EWR) (All Classes)

  - Review weekly all tasks of staff working on Business Systems Management and Business Administration Application Support for work done and keep records of work done;
  - Log submissions on a weekly basis, for review with the Authority;
  - Review All Application Vendor System Incidents and track completion;
  - Review of all open projects & provide weekly updates;
  - Review and prepare concise billing for the services provided hereunder with the Authority;
  - Coordinate and facilitate weekly meetings with the Authority to assign dedicated resources to perform tasks identified by the Authority;
  - Tracking all Technology Services Requests (TSRs) and report weekly on their status with the Authority;
  - As directed by the Authority's Contract Manager, meet with the Authority's Technology Services Department (TSD) to identify all open Helpdesk tickets/TSRs, and monitor and report on their status;
  - Regarding TSRs and under the direction of the Authority's Contract Manager:
    - Review End Users Needs & Requests
    - Correct the TSR, if Necessary
    - Follow-Up with TSD on status of TSRs
    - Keep Active Notes on the progress of the TSRs;
  - Review application maintenance provider requests to the Authority, and the list of open items list and work to be done;
  - Review the checklist of each application system that all work has been completed, and provide the status to the Authority on a weekly basis;
  - Keep a roll call report based on 'swipes' from security system of all Contractor staff entering and leaving the facilities;
  - Create a monthly report of Contractor attendance at the facilities, and provide such report to the Authority's Contract Manager;
  - Periodically suggest ways to enhance the use of the systems identified in Attachment D;
  - Audit full system use and remove all users from system who no longer should have access to application;
  - Participate in audit reviews and initiate/oversee needed corrective action;
  - Track and keep full list of all application vendors with escalation lists by the Contractor;
  - Keep current the Aviation Business Resumption Application list;
  - Report on the any gap between the current business processes and what needs to be done to improve the processes;
  - Oversee the delivery of technology commitments to ensure the successful delivery of services;
  - Provide the services of one Business Task Analyst at each airport (JFK, LGA and EWR) as a liaison for all technical consulting and tracking of systems;
  - Diagnose system problems at the airports, and help to correct them:

- Determine the problem from end-user
- Contact Maintenance provider
- Track problem to conclusion

2.A. Application System Administration of Distributed and Database Systems (Class 1 and 2 only):

Note: Currently, the Contract includes system administration services for Class 1 and Class 2 systems. However, the Authority may remove such services at some point during the Contract.

The Contractor shall perform the following tasks for Distributed and Database Systems:

- Notify the Authority's staff when the manufacturer is upgrading or discontinuing an operating system, database or application system.
- Attain a working knowledge of the application to support the application and make configuration changes with application vendor and Authority approval.
- Notify the Authority when system application provider is not conforming to Standards and Guidelines for Port Authority Technology.
- Perform all application administration tasks and functions as set forth below.

2.A.1: Application System Operations

The Contractor shall be responsible for (i) routine operation of the application system, (ii) management of configuration files and (iii) diagnosing and correcting application related problems. The Contractor shall perform all tasks as defined in the system operations manual, application technical documentation, other vendor product literature to assure functioning of the application at the required standards of performance and availability.

2.A.2: Application System Monitoring

The Contractor shall monitor the application and the impact it is having on the operating system as it pertains to the application, database, application error logs, and check that all components are present and operating within specified parameters. Based on these reviews the Contractor shall perform needed application system activities to ensure uninterrupted operation of the system. The Contractor must inform the maintenance provider and the Authority's Helpdesk of any problems.

The Contractor shall check system monitoring devices and programs, run-time system utilization parameters, and other diagnostic tools (e.g., disk usage, file size User ID allocations, processor loading, page faults, response times, etc.) to ensure that all aspects of the applications are operating properly and the application is meeting all specified performance criteria.

The Contractor shall monitor the state of the applications operating environment(s) including: temperature, humidity control, power conditioning/supply (e.g., uninterruptible power supplies), lighting, etc., to ensure appropriate and continuous environmental support for the system. The Contractor shall report deficiencies and anomalies to the Authority. The Contractor shall also inform the Authority if the fire and smoke-detection, Fire-extinguishing equipment, emergency lighting, backup power supply, and surge protection equipment are not operational.

The Contractor shall review application databases (tables, indexes, views/queries. etc.) to ensure that all databases are properly updated and the appropriate integrity and synchronization of all

system databases is maintained. The Contractor shall maintain logs or other appropriate records of all monitoring and system upkeep activities and logs of all anomalies found during any monitoring activities and the measures taken to correct those anomalies. The Contractor shall provide monthly, quarterly and semiannual reports of application system performance.

2.A.3: Operational Request

The Contractor shall respond to critical requests (e.g., resetting a user password, etc.) in a timely fashion as specified in Section 10 of Attachment B and Section 3 below. The Contractor shall also perform work to satisfy all routine operational requests (e.g., adding a new user; granting a user access to an existing application, etc.).

2A.4: System and Application/Database Back-ups and Archiving

The Contractor shall perform scheduled data, application, and application system backups to ensure that back-up media are properly stored, rotated on schedule, and replaced appropriately.

- Maintaining off-site back-ups

The Contractor shall perform scheduled back-ups for off-site storage or rotate back-up media to and from the off-site storage location as appropriate. The Contractor shall ensure that viable and complete back-ups are delivered to the off-site storage location when scheduled and that media to be rotated is returned from off-site storage location and returned to usage on the system as appropriate. The Contractor and the Authority will agree on the method on how to get the back-up media to and from the Authority-provided off-site storage location. The Authority will pay for use of the off-site storage facilities for back-ups as well as for the cost of the agreed upon method for transporting the storage media to and from the off-site storage facilities

- Maintaining records of back-up

The Contractor shall maintain logs of all back-up activity, rotation of back-ups, and usage/rotation of back-up media and records of all off-site data storage.

2.A.5 Archiving data

The Contractor shall follow best industry practices to capture data to be archived to permanent storage media, as required, to maintain proper system functioning or, as scheduled , in the system operating procedures (whichever occurs first). The Contractor shall ensure that archive media is properly stored, logged and maintained and that archived data is viable and accessible throughout the required archive retention period for the data. The Contractor and the Authority will agree on the method on how to get the archived storage media to and from the Authority-provided off-site storage location. The Contractor shall also be responsible for ensuring that an adequate inventory of media for primary and backup purposes is available and for advising the Authority in a timely manner to obtain additional media when needed.

- Accessing archived data

The Contractor shall be responsible for loading archived historic data onto the system as needed to generate reports, doing required searches and clearing loaded historic data from system when it is no longer needed for immediate access.

- Monitoring inventory of media

The Contractor shall be responsible to ensure that an adequate inventory of media for primary and backup purposes is available and for advising the Authority in a timely manner to order media for backups and archiving data as needed.

2.A.6 Database Administration

The Contractor shall be responsible for monitoring and maintaining various applications used throughout the facilities.

2.A.7 Application Fault Detection, Diagnosis, and Correction

Diagnosing Application system faults:

- React to application system faults detected through either monitoring, observation, or by reports from users;
- Application Log fault and capture pertinent data (e.g., record state of application components, take appropriate application dumps, record observations of users, etc.);
- Make necessary and appropriate notifications (e.g., Authority Contract Manager, affected users, etc.);
- Diagnose the nature/cause of application problem(s); and
- Determine responsibility for application correction of fault.

Correction of application system faults: The Contractor shall correct faults or follow application procedures to contact the appropriate service provider and initiate response from resolution provider. The Contractor shall then monitor and log response of service provider to trouble call.

Following up on corrective action: The Contractor shall verify that the fault has been appropriately and completely corrected and that there are no uncorrected collateral problems either from the original fault or from the measures taken to correct the fault.

Maintaining records of application faults: The Contractor shall log return to proper operation and record all pertinent data regarding fault including:

- Fault description and symptoms;
- How the fault was detected;
- The impact on application operation;
- How the fault was diagnosed;
- The diagnosis and response times;
- How the fault was corrected; and
- The elapsed time to restored system operation.

2.A.8 Report Generation

The Contractor shall produce reports; perform database queries as requested by the Authority; and collect necessary data and print reports. Typically, such reports are requested to analyze information, perform reports as needed for business requirements, and investigate operational anomalies, incidents, or trends that cannot be derived from standard reports. The Contractor

shall coordinate scheduling production of reports with the Authority. The Authority may allow for more time for a report to be done if the complexity is substantiated.

2.A.9 Production of operations reports

The Contractor shall provide application system-generated and/or manual log reports as required, and collect, maintain, and provide regular reports on computer room and application administration activities, etc., which are necessary for auditable reports of Contractor performance.

2.A.10 Monitor inventory of consumables

The Contractor shall monitor the inventory of all consumables – e.g. badges, supplies, backup tapes, etc. – used by the Contractor and advise the Authority in a timely manner to order consumables when needed.

2.A.11 Capacity Management and Performance Monitoring

The Contractor will be responsible for monitoring the applications' performance to ensure that performance and response meets the operational needs of the Authority. The Contractor shall provide non-intrusive methods to monitor the application and database. The Contractor shall take measures to ensure the continued effective operations of the application system through the accepted industry capacity management and performance monitoring procedures including recommending corrective actions to correct capacity or performance inadequacies to the Helpdesk.

The scope of the capacity management and performance monitoring portion furnished shall include but not be limited to the activities identified by the application provider.

Capacity Management

The Contractor shall maintain records on application performance and resource usage, message queuing, user response time, etc., adequate to project needed upgrades on current performance and expected growth.

Forecasting upgrade needs

The Contractor shall maintain communication with the Authority and in regard to plans for system expansion or modification that will affect system capacity or performance. The Contractor shall show monthly reports of growth or decline of application usage and predict trends should more users or equipment be added or removed, which may impact the application.

Tracking resource usage

The Contractor shall track such items as database/file sizes, application network traffic volume and simultaneous connections to ensure adequate resources will be available for the foreseeable future. The Contractor shall present the status of its findings monthly.

Tracking licenses

The Contractor shall track and report to the Authority the need to purchase additional licenses when application user limits are exceeded.

Performance Monitoring
At the Authority's request, the Contractor will identify performance issues within the application or the database, which will then be communicated by the Authority and Contractor to the application provider for remediation.

Troubleshooting:
The Contractor shall investigate and diagnose application system problems resulting in unsatisfactory system performance and take steps to remedy the problem by contacting the application provider and the Authority.

2.A.12 Coordinate with Application Hardware/Software Service Providers
The Contractor shall be responsible for monitoring performance of application software maintenance/support providers according to contract terms between the Authority and the vendors. Maintenance and support contracts are with and paid for by the Authority. The Contractor shall act as the primary contact between the Authority and the service providers in the scheduling of application services and diagnosing and monitoring the application and notifying and requesting the vendor to make the appropriate correction of application faults or failures. The Authority may elect to contact application and maintenance vendors directly to request service if it is determined that this will expedite fault correction. The Authority will supply hardware and software upgrades to the Contractor. The scope of the management of hardware/software service providers' portion of the application furnished shall include but not be limited to the activities identified below in this section:

Application Maintenance
The Contractor shall schedule regular preventive application maintenance service with the vendor or the Authority in accordance with service contracts and in coordination with the Authority to limit disruption of operations, and shall maintain records of service visits to ensure that vendors' contractual obligations are met.

Notifying vendors or TSD of application faults
The Contractor shall reassign/forward service calls to the appropriate service provider when application faults or failures require such. All faults must be called into the Authority's Helpdesk.

Application Software Upgrades
Contractor shall monitor or supervise, at the Authority's request, the installation of application upgrades and/or patches on host processors, servers and personal computer clients, ensuring that the software is maintained at a release level supported by the vendor and, as appropriate, within two release levels of the most current release.

Maintaining currency of application software
The Contractor shall monitor or supervise, as appropriate, the installation of application software upgrades and/or patches on host processors, servers and personal computer clients, including packaged software products, as well as new releases of custom software as directed by the Authority. The Contractor is not required to create application software patches or upgrades to the COTS application.

The Contractor may be asked to write or develop application that will need to be maintained by the Contractor. The Contractor may also be asked to rewrite applications as needed. Such applications are not known at this time.

Upon notification of a critical Security modification, the Contractor shall be capable of deploying it within 24 hours. This includes the preparation, testing, quality assurance of the modification, and reporting to and consultation with the Authority. If the Contractor requires more time due to the difficulty of the application or report, the Contractor will immediately notify the Authority , at which point a more appropriate time schedule will be determined.

Non-critical Security and Non-Security applications related modifications and fixes are to be scheduled with Authority staff, but in general they shall be deployed within 10 business days. Any application or update shall also include an automated method for removing the application modification or update in the event that the new software causes an adverse effect on the application or system to which it was deployed. Any modification or update shall include a test to determine if the patch or update is already on the desktop or application server.

No changes or modifications shall be made to any purchased COTS applications. If the Contractor requires more time due to the difficulty of the application or report than they will immediately notify the Authority, at which point a more appropriate time schedule will be determined.

The Contractor shall also maintain an inventory of all software applications. The Contractor shall develop a program to inform the Authority of new application version releases and develop a plan for its distribution across the Authority within six months of release by the manufacturer or developed software. The Contractor shall also notify the Authority as soon as the manufacturer of the application discontinues or announces plans to discontinue any version.

Operating System Upgrades

When needed, the Contractor must work with the application provider and the Authority to help assist and validate that the current application will not be impacted by any operating system upgrades that would be made by the Authority. The Contractor will notify the application provider and the Authority if it expects to see any problems in the application. The Contractor is not held responsible should a problem occur beyond standard best practice of monitoring the system.

Software Maintenance/Support

The Contractor shall act on behalf of the Authority in dealing with application software support providers in communicating requests for modifications to the system or in reporting required fixes to correct software deficiencies. The Contractor shall also maintain records and track the status of all such requests, and maintain contact with vendors to keep current on the latest releases and fixes to software, and shall keep the Authority aware of the status of all such releases, fixes and requests. Where software providers are engaged by the Authority to apply operating system or application software enhancements, upgrades, and/or patches on host processors, servers, and/or personal computer clients, the Contractor shall be responsible for supervising the software support provider activities in performing such work. The Contractor may be requested to purchase software tools and/or hardware products for diagnostics or other requirements. In the case where this is required, the Authority will be notified in writing about the request, the need and reason for such tool, and how the product will improve the system, as well as the cost to purchase it. The Authority may also request the Contractor to provide assistance or

manage and run pilot projects, or to test systems on new technology, which may require the Contractor to have a pilot system. The Contractor will be reimbursed at cost for the purchase of the product(s), subject to the Authority's approval.

Notifying vendors of application faults
The Contractor shall reassign/forward service calls to the appropriate service provider when system faults or failures require such correction, during normal office hours, within one hour of the fault or failure. In all cases a call must be made to the Authority's Helpdesk to log the call. The Contractor must have its own tracking system to track all system faults.

Change Management Administration
The Contractor will be responsible for ensuring that all changes to application software occur in a controlled manner by the application provider. The Contractor shall be responsible for monitoring and determining that all application hardware, software and application changes are properly authorized, tested and documented prior to implementation in the production environment and for maintaining a general awareness of changes to the Authority's information infrastructure. Testing would be in reference to new versions of applications, operating systems, or other relevant changes. The scope of the change management portion of the application System Administration services furnished shall include but not be limited to the activities identified below in this section:

Application Hardware Configuration Changes
The Contractor shall make provisions with application provider for the orderly implementation of hardware changes and upgrades minimizing the disruption of system services to users. The Contractor shall oversee and control changes to the hardware configuration and supervise the area during installation.

Application Testing on New Hardware
The Contractor shall ensure that all hardware configuration changes are tested prior to use in the production environment. Where possible and appropriate, the Contractor shall arrange for factory testing prior to acceptance of new hardware

Informing management of new application hardware options
The Contractor shall maintain contact with application providers to stay aware of all hardware / software upgrades, maintenance fixes, etc., which are available for the system.

Documenting the Application Hardware Configuration
The Contractor shall ensure that all documentation is received for new hardware, that configuration changes are properly documented and filed in the documentation library.

Application Software Configuration Changes
The Contractor, at the discretion of the Authority, shall verify that no unauthorized software has been introduced onto the system. If any unauthorized software is found, it shall be reported to the Authority. The versions of authorized software shall be checked to verify that no unauthorized changes have been made. Automated tools for change control should be researched and recommended w here appropriate.

Informing management of new software options
The Contractor shall maintain contact with the application providers to stay aware of application software upgrades and fixes.

Establishing a segregated test environment
The Contractor shall maintain a segregated test environment insulated from the production environment for testing of all changes to software prior to introduction to the production environment. The Contractor shall provide a description of the planned testing environment to support testing of new versions of applications, operating systems, etc. The Contractor will provide costs to create supporting test system for application.

Controlling software migrations
The Contractor shall establish and enforce procedures to ensure only approved changes are implemented by ensuring that:

- modification request forms have been received for all changes to be made to software;
- software version/revision level is identified;
- new application and system software versions are tested prior to use on the production system;
- new application and system software versions are documented;
- where applicable, changes to application software are deposited in escrow by the application provider.

Maintaining prior versions of software
The Contractor shall exercise control over software versions, ensuring the proper version of software is migrated and that prior versions are available for roll back in the event of an emergency.

Testing new software
The Contractor shall maintain a set of test transactions and known results to verify the integrity of the system along with new software releases. The test transactions shall be updated to include test data for all new conditions arising out of maintenance or enhancement of the system. The Contractor will be involved in all application and system migrations.

2.A.13 Application Security Administration • User Accounts
The Contractor shall be responsible for creating and maintaining a secure system environment in a manner consistent with the Authority's Standards and Guidelines for Technology. The scope of the application security administration portion of the application System Administration services furnished shall include but not be limited to the activities identified below in this section.

Maintaining lists of authorized users
The Contractor shall establish a listing of users authorized by the Authority to access the system and the system functions that each user is authorized to exercise. The Contractor shall also provide a means for immediate communication with the Authority when changes in employment status occur, which may require updating of said list.

Limiting application access to the system

The Contractor shall create logon privileges for the application for only those persons authorized by the Authority and periodically reconcile the list of users to the authorized list. The Contractor shall institute a policy of password assignment, expiration and change to limit the exposure to unauthorized access and limit access by individuals to the functions authorized through user profiles or other such means as are available through the application or operating system. The Contractor shall institute controls over application super-passwords or other special passwords so that their use is documented and approved by the Authority. The Contractor shall research sign-on violations to determine if a pattern is evident and report any findings to the Authority.

The Contractor shall review and monitor the security configurations, user accounts, passwords, and user security permissions established for all components of the application system the Contractor is responsible. These include the application database, application, Web services and applicable middleware software. The Contractor shall provide reports on how these configurations have been set and controls have been performed following the Standard and Guidelines for Port Authority Technology and business best practices. The Contractor shall use the available reporting tools as well as the Authority's specified third-party monitoring, auditing and reporting tools. The Authority reserves the right to use any additional security and system software to evaluate the level of security and vulnerabilities in all systems under this contract. The Contractor shall develop an acceptable procedure to notify users and correct unsatisfactory conditions, e.g., email notification of login lockouts, password expirations, etc.

With respect to Application Security Administration, the Contractor shall, at minimum, be responsible for:

- Establishing access rights, groups, profiles etc. for an application system or application for which they are responsible and documenting their use and definitions;
- Developing security procedures which define the granting of access and the administration of security functions of their application, and reviewing and updating these procedures on an ongoing basis;
- Developing add/change/delete access requests forms;
- Developing procedures for changing or deleting accounts or privileges when staff leave or change assignments, and executing these procedures in a timely manner;
- Reviewing regularly who has access to their data and determining if such access is appropriate and still required;
- Ensuring that users are required to acknowledge, in writing, that they have been informed of the organization's position on security and the confidentiality of information prior to access being given;
- Assigning appropriate expiration dates for accounts used by temporary/consulting staff;
- Developing procedures for responding to, documenting and escalating security incidents;
- Investigating and performing appropriate escalation of a security incident matter;
- Setting any global application controls (i.e. password controls, time out, concurrent logins) consistent with the Standards and Guidelines for Port Authority Technology;
- Reviewing daily the event log for irregular activities on the application;
- Regularly informing the Authority of security issues.
- Developing regular processing schedules for the production of security reports

- (e.g. unsuccessful logon attempts, audit trail reports);
- Developing procedures for reviewing the reports and logs on a regular basis and taking appropriate corrective action;
- Ensuring that the system complies with the Standards and Guidelines for Port
- Authority Technology;
- Determining high-risk activities, establishing logs of those activities and tables and determining appropriate review cycles;
- Ensuring that application database and application security issues are coordinated;
- Keeping abreast of vulnerabilities of application databases or application as they are discovered and patching them or implementing compensation controls with direction from the Authority;
- Developing procedures for the disposal of unneeded confidential data produced from the application;
- Ensuring all system hardware (i.e. servers, comm. rooms, backup tapes, etc.) and software are secured from tampering or damaging;
- Documenting the disaster and business resumption recovery plan;
- Administering application configuration files, backups, patches, and change controls.

The Contractor will provide system access and reasonable assistance to the Authority's external and internal audit staff or its consultants in the performance of financial, system, security and operational reviews, including producing specific requested information and extraction of data. In addition, the Contractor shall support requests related to audits of the service level agreement and administration tasks and functions specified herein. This participation is part of the ongoing application routine maintenance of systems and shall not be considered subject to an extra work allowance.

2.A.14 User Assistance: The Contractor shall

- Provide technical support to facility and other user department staff internal/external meetings;
- Provide technical assistance to system users;
- Act as the focal point for application provider contacts;
- Research and take corrective action on re-opened application malfunctions;
- Perform other support activities (e.g., visit/review similar systems or facilities, interview potential service providers, etc.)as may be assigned by the Authority;.
- Assist the Authority to establish user-training programs. The Contractor shall recommend the use of Contractor staff or coordinate or supervise a third party trainer in executing the training.

2.A.15 System Documentation Library

The Contractor shall establish and maintain a documentation library containing all application documentation for ongoing maintenance on applications. The Contractor will be responsible for ensuring that all documentation needed for the continued operation and maintenance of the systems is accurate and available. The scope of the system documentation shall include but not be limited to the activities identified below. The Contractor shall provide controlled access to documentation materials and shall assume responsibility for maintaining the inventory of documentation.

Establishing a documentation library

Where one does not already exist, the Contractor shall establish and maintain a documentation library containing all documentation material for applications, hardware/device drivers/firmware and software, and standards and procedure manuals, and act as the Authority's agent in obtaining any needed documentation not in the Authority's possession. All materials in or obtained for the documentation library shall be available electronically, backed up, and are the property of the Authority. The documentation library shall include but not be limited to the following:

- Application documentation including the suppliers' reference manuals; information regarding upgrades and fixes applied and currently available upgrades not yet applied;
- System documentation including functional specifications documentation, design specification documentation, program documentation and user documentation;
- Application hardware and wiring documentation including model and serial numbers, user and troubleshooting guides, wiring diagrams showing connections and wiring specifications;
- LAN & Fiber documentation tracking of the application;
- Test plans and procedures and results of factory-testing, field-testing, integration-testing, and acceptance-testing. This documentation will be used for retesting the application after modifications to software or hardware configuration or fixes to software. The Contractor shall also maintain a file of all test results and evaluation of results along with any recommendations arising out of that testing. All test plans and related files and data shall be the property of the Authority.
- Application software and drivers media needed to prepare servers and desktops for full restore;
- Documentation of security settings, as agreed to by the Authority, as well as- documented explanations of why the settings depart from the application defaults;
    - The Contractor will be involved in reviewing escrow and the process and ensuring that all that all escrow work is complete with the escrow firm that will be used.

The minimum Security Requirements for the documentation library shall be:

UNIX Administration – Where it pertains to the application.

Ports and Services Utilities
Access Rights/ Segregation of Duties Redundancy / Data Replication System Log & Violation Logs
Root
Vulnerability Scanner

Oracle – Where it pertains to the application.

Administration Services Utilities
Access Rights/ Segregation of Duties
Redundancy / Data Replication
Audit Trail and Triggers Sys, System, Internal Vulnerability Scanner

Business Application System Administration

System Monitoring & Network Monitoring for the application
Application Patch Management
Performance Monitoring
Change Control- System, Application

Application Security Administration

Review of Audit Trails and Violation Logs

Documentation
Business Application Administration Business Manuals Security
Business Administration Manuals
Business Application Manuals
Business User Manuals

General
Login Banner
Physical Security System Defaults
Authentication & Password Controls (90 day exp., 15 min. timeout, 3 attempts, concurrent logins, 6 alpha numeric)
Escalation Procedures
Incident Response Procedures
Archiving
Backup and Recovery
Disaster Recovery (Plan & Testing) Business Resumption (Plan & Testing) Software Inventory
Hardware Inventory
Account Expiration for Consultants and Contractors
Vulnerability Scanner

3. **Management of the Work**

The management work approach for the performance of the entire contract includes roles for a Contract Manager for the Authority and an Engagement Manager for the Contractor. The Authority Contract Manager will supervise the overall conduct of the Contractor with the Contractor's Engagement Manager.

The Work Approach shall adhere to the following format:

3.1 Organization

The Contractor shall be responsible for establishing and maintaining an organization appropriate to the scope of work to be performed under this Contract. This shall include but not be limited to:

- Assigning appropriate numbers of staff with skills appropriate to the tasks to be performed. All assigned staff must be accessible through either a paging device or a cell phone. A list of assigned staff and their contact information shall be provided to the Authority's Contract Manager, at the time of assignment.

- Ensuring that on-site staffing requirements are satisfied by having a sufficient number of staff with the appropriate skills on Authority sites, unless otherwise stated.

- Providing qualified persons, acceptable to the Authority, for relief of the assigned staff in the event of extended vacation, illness, personal business or any other absence of the assigned staff beyond five consecutive business days.

- Providing the assigned staff with a procedure for escalating technical issues, which cannot be solved on-site, and providing for the support of these individuals where such support is required.

- Providing a 24-hour/7-day hotline to respond to the requests for services in a timely manner and to meet service requirements.

- Reassigning staff and assigning new staff, who shall be pre-approved by the Authority's Contract Manager. All staff requires approval by the Authority's Contract Manager.

- Ensuring that the staff has a proficient understanding of all software applications and systems listed in Attachment D.

3.2 Schedules

The Contractor shall manage the work according to schedules published by the Contractor and approved by the Contract Manager. The schedules shall include but not be limited to:

- Ongoing recurrent duties;
- Application maintenance activities;
- Management activities;
- Add/modification/delete functions.

Changes to the work schedules shall be pre-approved by the Authority's Contract Manager.

3.3 Customer Status Reporting/Status Meetings

The Contractor shall schedule and conduct regular status meetings no less frequently than monthly with the Authority and other service providers. However, the Contractor shall schedule and conduct status meeting more frequently for resolution of pressing agenda items. The purpose of these meetings shall be to apprise the Authority of the status of the work, the operational status of the system, any problems noted and their immediate and long-term solutions.

The Contractor shall produce and deliver to the Authority, at least 48 hours prior to each status meeting, a status report. At minimum, the report shall provide:

- Statement of the application status and indication of progress made on work to correct deficiencies;
- Status of ongoing application activities as defined herein;
- Activities to be undertaken in the next reporting period;
- Activities/tasks behind schedule and identification of problems/concerns related to the system;
- Statistics on problems encountered and resolved in the reporting period and in the yearto date, as well as other pertinent statistics.

The Contractor shall also provide reports on staff activity, attendance, training, timesheets, etc., as required by the Contract Manager, to demonstrate satisfaction of the terms of this Contract.

3.4 Security Measures for Contractor's Staff

This section is intended for the creation of security controls relative to the Contractor's own staff. The Contractor shall be responsible for maintaining a secure environment and supplying personnel who satisfy Authority and/or regulatory requirements imposed by, for example, federal agencies such as the TSA.

Maintaining lists of authorized Contractor's staff

The Contractor shall maintain a list of Contractor employees authorized to enter secured areas and shall maintain communication with the Authority Contract Manager or other designated person as to changes in employment status that may require updating of said list. The Contractor shall advise the Authority of all Contractors' staffing changes in advance. In addition, the Contractor shall notify the Authority where access security may have been compromised (e.g., lost keys or access cards).

Application Access for Contractor's Staff

The Contractor shall maintain a list of Contractor employees authorized by the Authority's Contract Manager to access application systems, and any ancillary systems necessary to perform the job function. The Contractor shall also provide a means for immediate communication with the Authority's Contract Manager or other designated person when changes in employment status or assignments occur which may require updating of said list of authorized users. The Contractor will monitor and record all access to entry by Authority Staff and non-Authority staff who do not have an Authority badge with approved automated access. The Contractor will ensure that those individuals who are not authorized by Authority management will not gain entry to the computer facilities. After receiving authorization from Contract Manager, the Contractor's staff will also keep a log-book of all entry and exit of individuals entering the facilities, as well as their exit time from the computer facilities. If the location is outfitted with a security badge reader, then the security badge reader will be used by the Contractor as the sign in and sign out of the work place. The Contractor will create a weekly report, which will also be printed and given to the Contract Manager Monthly both electronically and on paper.

Limiting access to the system

The Authority shall issue appropriate logon IDs for only those persons authorized by the Authority to have access, and periodically reconcile the list of logon IDs to the authorized list. The Contractor shall institute controls over super-passwords or other special passwords so that their use is documented and approved by the Authority. Any request by the Contractor to increase access shall be documented in writing, with full backup information to document the need for the increased access.

Data Security

All information concerning the business of the Authority which becomes accessible or known to the Contractor, their employees or subcontractors, including but not limited to financial information, customers, customer lists, business plans, operational plans, data and computer programs, documentation, engineering/technical data, drawings, design process, pricing, research and development, strategic plans, and operating data resident on magnetic media, or other media processed, stored, archived or maintained, shall be protected from loss, erroneous alteration, and shall be held in strict confidence and protected from unauthorized access. All confidential data shall be protected at all times. The Contractor shall provide the same care and processes to prevent unauthorized access, modification or loss of the Authority data via the same, or enhanced, processes that it presently employs to protect its own information of a similar nature. In the event of any non-authorized access, modification, disclosure, loss or

inability to account for any Authority data, the Contractor will provide immediate notification to the Authority's Contract Manager.

3.5 Quality Assurance/Auditing

The Contractor shall establish and maintain a quality assurance program, which the Contractor will utilize to assure that all work is performed in accordance with the terms of this Contract, including compliance with the Standard and Guidelines for Port Authority Technology and at a level consistent with acceptable industry practices. The Contractor shall employ procedures to assure the timely and effective execution of all tasks required by this Contract. The program is expected to include a measurement program that tracks the quality and productivity of services provided by the Contractor. The Contractor shall issue reports regarding this Quality Assurance activity each quarter.

3.6 Contractor's Staff Training & Licensing

The Contractor shall be responsible for maintaining the appropriate knowledge, certifications skills and abilities of the staff assigned to administer the target system by providing a regular ongoing training program appropriate to the needs of each system administered and the staff assigned. The contractor must have personnel at the airport certified for the VERINT (Version 6.2 or above), and LENEL (Version 6.4 or above) systems The Contractor must provide a skilled licensed individual for any future systems as required by the Authority.

3.7 Coordination with Others

The Contractor will be required to coordinate with other third parties as required to perform the Scope of Work outlined in this Attachment. This includes Authority staff supporting specific applications, vendors retained by the Authority to support and/or maintain specific applications or systems. The Contractor will be responsible for documenting clear procedures for the coordination of these services and specify appropriate hand-offs between parties.

3.8 Work Space Requirements

The Contractor shall specify any assumptions regarding Authority-provided workstations, offices, office equipment and other workspace requirements and equipment the Authority is expected to provide his/her staff. Office supplies, telephone charges and equipment are the responsibility of the Contractor. The Contractor shall provide his/her own computers, adhering to the Standards and Guidelines for Port Authority Technology to perform the work hereof.

3.9 Geographic Coverage

Facility Locations are provided in Attachment D, Description of Current Distributed and Database Application Systems.

3.10 Transition Planning from Current Contractors

The selected Contractor will be expected to support an orderly transition from the existing vendor providing application management and administration of the systems described herein. The minimum transition period shall be 90 days or less, as determined feasible by the Authority. The

selected Contractor will be expected to actively participate in discussions and agree to written plans that clearly specify the transition period and responsibilities.

3.11 Transition Planning to Future Contractors

The selected Contractor will be expected to support an orderly transition to future vendors that will provide the services described herein. The minimum transition period shall be 90 days or less, as determined feasible by the Authority. The selected Contractor will be expected to actively participate in discussions and agree to written plans that clearly specify the transition period and responsibilities.

3.12 Annual Best Practices and Cost Reduction Opportunities

On at least an annual basis, the Contractor shall provide the Authority with a review of industry best practices for the services rendered. Such review shall document standard industry practice with a comparison of how the services are rendered under this contract. In addition to a review of best practices, the Contractor shall participate in an annual review of cost for services, given industry cost trends and changing market conditions. The Contractor may be required to cooperate with a third party retained by the Authority to assist in such reviews.

3.13 Right to Use Contractor Tools

The Contractor may have implemented specific Contractor-owned or proprietary tools for the management, operation or reporting on systems operations within the Authority. Upon termination or completion of this Contract, to avoid disruption of operations, the Authority or its designee shall be entitled to use of and access to any and all Contractor-specific tools until such time as they can be replaced and the license granted to the Authority hereunder with respect to such tools shall apply to such use and access.

3.14 Right to Acquire Contractor Tools

Upon termination or completion of this Contract, the Authority shall have the right to irrevocably license or purchase, at the price currently in effect for the Contractor's most favored customers, those materials, tools and equipment owned by the Contractor that allowed for the support and operation of the Authority's systems under maintenance. However, if termination is due to the Contractor's breach of this Contract, this will be at no cost to the Authority and such license or ownership shall be deemed transferred to the Authority at the time of such breach.

The Contractor shall only use tools that are transferable to the Authority, thereby ensuring the continuation of systems support after completion or termination of the Contract. The Contractor shall advise the Authority annually of all such tools in use.

4. Service Level Agreement (SLA)

The above tasks and work approach shall be performed in accordance with the service level agreements stated below. The Contractor shall provide monthly reports demonstrating its performance against all the SLA standards.

4.1 Server availability (Class 1 and 2):

All servers and associated storage and applications shall be on-line and available for general use 97% of the time per server as measured on a monthly basis.

4.2 Application Patch/version maintenance (Class 1 and 2):
The Contractor shall apply all critical application patches within 24 hours of their approval by the Authority. Software version upgrades are deployed within 12 months of general release by the application vendor.

4.3 User/group account maintenance and directory services modifications (Class 1 and 2):
All routine operational requests shall be satisfied within 48 hours of problem determination. Additional operational requests, not requiring dedicated Contractor staff and without a pre-established contractual deadline, shall be performed as a part of this contract by the deadline negotiated between the Contractor and the Contract Manager.

4.4 Operational Requests (Class 1 and 2):

- Resetting an application user password within 2 hours.
- Routine operational request is satisfied within 2 working days (e.g. adding a new application user, granting a user access to an existing application).
- Preparing simple ad hoc query reports for distributed systems within 1 working day.
- All queries and report requests that require more than 2 working days will be provided at no extra cost with an estimated time of completion within 24 hours.

4.5 Backups and Archiving (Class 1 and 2):
Minimum frequency and type of backup (incremental daily; once a week full backup) Minimum frequency of archive (as required to maintain server capacity)

4.6 Application System Monitoring (All Classes):
Application System monitoring shall be performed twice a day at a minimum.

4.7Hours of Service (All Classes):
For purposes of staffing and service level agreements, the Contractor's hours of service, provided on-site at the referenced airports, shall be from 7:00 AM to 6:00 P.M, Monday through Friday excluding Port Authority-defined holidays. In some instances, specific and ongoing schedule requirements may necessitate the permanent assignment of support staff outside these standard times, e.g., 6:01 PM. to 6:59AM. Many Port Authority offices are operated 24 hours a day, 7 days a week ("24 x 7"). The Contractor shall respond to system monitoring alerts 24 x 7 as required to meet the Authority's operational needs. Such permanent assignments should not entail overtime charges where the standard workday duration is not exceeded.

The Contractor's proposed minimum of qualified staff shall be maintained throughout the term of this Contract. Should the Contractor fail to provide and maintain the required amount of qualified staff at any time during the term of the Contract, the Authority may reduce the Contractor's fee in an amount corresponding to the cost of providing such staff.

Furthermore, the Authority Contract Manager shall pre-approve anticipated reductions in the Contractor's staff. It is understood that reductions in staff levels, may result in corresponding reductions of the Contractor's fee.

4.8 Continuity of coverage (All Classes):
Continuity is required and dedicated staff turnover cannot be greater than 15% per year without Authority Contract Manager approval.

4.9 Compliance with Control Requirements and Standards and Guidelines for Port Authority Technology (All Classes):
Contractor must satisfy 100% of requirements stated in Attachment G (Control Requirements Contract Checklist) and the Standards and Guidelines for Port Authority Technology (Attachment H).

4.10 Response Times (All Classes):
The Contractor must respond by phone to all Authority-generated requests regarding issues affecting the operation and use of the systems within one hour of such notification. The Contractor must address such issues onsite (at the origin of the issue) within four hours of such notification to the Authority.

5. Disaster Recovery Planning

Within 120 days of Contract Execution, the Contractor shall develop for the review and approval of the Authority Contract Manager a disaster recovery plan (for all classes) in accordance with the relevant requirements in Attachment G.

ATTACHMENT D: DESCRIPTION OF DISTRIBUTED SYSTEMS

CLASS 1

Class 1, Distributed System: Defined as systems located at an airport with many end-of-line devices. The Contractor will provide application support, database support, systems administration, and user applications support.

Distributed Systems are networked systems on local area networks (LAN's), which have related functionality and operational characteristics but are physically located in different locations. They are managed locally, unless otherwise specified, by individual facilities and are not networked across facilities. Application administration, system checks, enhancements and change controls are identical among facilities and are shared in a transparent way. Distributed Systems may include an application and database as part of their architecture and reside on their own separate network.

An application/database system is a dedicated server or group of servers with or without back-end storage attached. These systems provide database and application specific services to an identifiable population of users. Support for these systems will include providing end-user access to such applications, routine monitoring and application maintenance, system backup, data replication, file retention and archiving services, security, performing operating system upgrades and maintenance of databases, which conform to Standards and Guidelines for Port Authority Technology.

The current distributed systems are described in detail below, along with their geographic location.

1) **Parking Revenue Control System (PRCS) at JFK, LGA, EWR:**

DESCRIPTION:
The Parking and Revenue Control System (PRCS) monitors, controls, and reports on parking lot activities at airport public and employee parking lots. It monitors lane equipment and cashier activities, collects and controls public parking revenue, and provides an accurate, efficient and secure tool for auditing the parking revenue.

The PRCS is networked. The servers, communication systems and workstations are fully integrated in the PRCS Local Area Network (LAN) and communicate over Ethernet using the TCP/IP suite of protocols. All printers are networked printers.

Redundancy is achieved using 4 servers per airport (2 primary and 2 secondary/backup). Secondary servers automatically come up within one (1) minute of failure detection including automatic reconnection of clients to servers. The system performs all functions associated with parking revenue control, such as:

- Monitors the operational status of each public lane equipment or controller; Ticket Issuing Machine (TIM), Cashier Terminal (CT), Pre-cashiering machine (PRM), and Communication Syst em (CS).
- Maintains a current inventory of available parking spaces within each parking lot.

- Maintains and controls Cashier and Supervisor functions and access capabilities.
- Controls the exit of each non-revenue patron who is also a non-revenue badge holder.
- Creates a log of normal and abnormal conditions.
- Maintains the list of invalid tickets such as stolen ticket at entry or "back-out" ticket at entry.
- Control parking rates and allow the operator to modify the rate tables, and change the duration of the grace periods.
- Maintains a License Plate Inventory System to prevent the loss of revenue due to lost and swapped tickets, and manages data regarding unexplained disappearances from inventory and excessive abuses such as lost ticket claims.
- Maintains a License Plate Recognition system tying tickets to license plates preventing swapped ticket and lost ticket abuse scenarios.
- Provides a wide range of information to help management analyze and control critical conditions.
- Canned and custom reports provide information to aid management in controlling operational personnel and machines, audit transactions and individuals, verify cash deposits, analyze performance of individuals and areas, plan and allocate resources, control inventory, analyze and set rates, and a host of other activities.
- Processes credit card payments and performs on-line verification based on the credit card processor selected by the Authority.
- Provides on-line data retention with at least 13 months of transactions available on-line to operators.

HARDWARE / SOFTWARE ENVIRONMENT:

Hardware:

- Two (2) real-time Sun Enterprise DB servers (primary and backup) with automatic failover mechanism.
- Two (2) real-time Sun Enterprise Application Servers (primary and backup) with automatic failover mechanism.
- Two real-time HP Proliant Report Servers (primary and backup)
- Network Attached Storage NetApp (dual head controllers, clustered) for Oracle
- Cashier Terminal / Pay Station

Infrastructure:

- LAN router communicating with Port Authority Network: this interfaces with the credit card clearing-house for on-line real-time credit card authorizations
- Quantum tape library
- A dedicated local area network with a dual fiber optic ring with redundant forward and protect fiber rings provides Ethernet communication between system devices, workstations and servers. It integrates voice and data traffic.
- Ethernet TCP/IP communications connect workstations and communication controllers to the system servers.
- Portable Terminal Computers (for License Plate Inventory collection).

Workstations/Printers:

- Workstations at JFK: (Approximately 19 PCs) IBM ThinkCenter
- Printers at JFK: Approximately 6 HP Laser Jet

- Workstations at LGA: (Approximately 24) IBM ThinkCenter
- Printers at LGA: (Approximately 5) OKI, HP LaserJet, TallyGenicom

- Workstations at EWR: (Approximately 27) HP Compaq, Dell, IBM ThinkCentre
- Printers at EWR: (Approximately 6) HP LaserJet, Lexmark

Software:

- Server Operating System: Microsoft Windows, Sun Solaris
- NAS Operating System
- Database: Oracle
- Backup Software: NetBackup
- Report writer: Business Objects
- Inventory Management: HardCat

Lane and Express Pay Equipment

- Ticket Issuing Machines (TIM), Cashier Terminals (CT), Pre-cashiering machines (PRM)

HOURS OF OPERATION

- The Parking Revenue Control System operates 24 hours per day/7 days a week.

2) **Identity Management Credential System (IMCS)**

LOCATION: To be established

DESCRIPTION:
The Identity Credential Management System will be the front-end system to the CACS Physical Access Control System (PACS) that runs on LENEL. The IMCS system is a rule based system in creating a credential. The IMCS Server requires all of the "categories of support' as detailed in the scope of work

3) Ground Transportation Information System (GTIS)

LOCATION: John F. Kennedy International Airport, LaGuardia Airport & Newark Airport

DESCRIPTION:
The Ground Transportation Information System (GTIS or System) provides information at the Welcome Centers to the Customer Care Representatives (staffing is provided under a separate contract) who assist passengers in traveling to their final destinations. The System provides detailed information about ground transportation options, including carriers, destinations, schedules and fares. Passengers provide specific information to the Customer Care Representative (CCR), such as destination, number of adults and children traveling, number of bags, etc., and GTIS provides the CCRs with the transportation options for that destination and the fare. Once the customer selects the desired service, the CCR completes the reservation, prints a confirmation ticket/receipt, and captures the data on the System. When the driver arrives, the customer is escorted to the vehicle, the driver signs the reservation ticket, departs with the

customer, and the reservation is closed out by the CCR. No money transactions are conducted at the Welcome Centers.

HARDWARE / SOFTWARE ENVIRONMET:
HARDWARE: The GTIS master server is located at Kennedy airport in the computer room. There is also one server for Kennedy, LaGuardia, and Newark, which the operators access from their workstations. The communications to these servers are through the Port Authority Wide Area Network but the workstations are all connected by hard wire modem.

SOFTWARE: The GTIS System servers run on Microsoft's Windows operation system and the Desktop run on Windows. The database is Microsoft SQL and the GTIS application runs VB.NET.

HARDWARE:

- Servers: 2 at JFK, 1 at LGA and 1 at EWR
- PCs: Approximately 27 at JFK, 15 at LGA and 9 at EWR
- Ticket Printers: Approximately 18 at JFK, 12 at LGA, 10 at EWR
- Laser Printers: Approximately 1 at JFK, 1 at LGA, 1 at EWR
- Laptops Approximately 2 at JFK
- Training PCs: approximately 10 at JFK, 3 at LGA

Description of Current Database Systems

CLASS 2

Class 2, Database Systems: Defined as a system with connectivity to other systems and requires at the airports. The Contractor will provide application support, database support, systems administration, and user application support.

1) Datalink

LOCATION: Kennedy Airport

DESCRIPTION:
The Datalink tenant cardholder data exchange facility is a means to exchange Port Authority cardholder information for those individuals who are authorized for Aeronautical Operations Area (AOA) access. The data exchange consists of a two-phase process where in the initial data upload will be accomplished with the Port Authority providing the Tenant with CD media containing Port Authority cardholder information specific to the Tenant's Aeronautical Operations Area (AOA) access areas. The second phase occurs once a physical interface between the Port Authority security systems and the Tenant's security systems has been established. This phase will be the ongoing data transfer between the two systems.

Hardware: IBM server

2) CrossMatch

LOCATION: Kennedy, LaGuardia and Newark Airports

DESCRIPTION:
The Cross Match Guardian system along with the LSMS software is used by Kennedy Airport to background check their potential employees. The software is configured to allow the capture of the required demographic data for AAAE and once this is entered the fingerprint images are captured electronically. The system creates a file that is then sent electronically to AAAE for a national background check for criminal records.

Hardware:
CrossMatch WorkStations
3 at Newark Airport
3 at Kennedy Airport
2 at LaGuardia Airport

3) MorphoCheck Handheld Terminal

LOCATION: Kennedy, LaGuardia and Newark Airports

DESCRIPTION:

MorphoCheck Handheld Terminal (HHT) is a mobile handheld computer offered by MorphoTrak, Inc. It communicates to a backend server to obtain information regarding the access rights of card holders. The

MorphoCheck HHT is used by security personnel to read and authenticate smart cards, perform biometric authentication between the card holder and the card and to verify the cardholder is allowed access based on the information from the server

Hardware:
1 MorphoCheck servers at Newark, Kennedy and LaGuardia airports.

Description of User Application Support Systems

CLASS 3

Class 3, User Application Support System: Defined as a system requiring support to the users of the application, with such support being provided at the airports.

1) Airport Security and Airside Access Control System (ASAAC) at JFK, LGA and EWR

DESCRIPTION:
The system provides the following security, access control, and alarm monitoring functions:

- Access control and intrusion detection: To establish and maintain control over designated access control points.
- Badge system: To design and produce badges, record cardholders' data and pictures. System includes badge printers and digital cameras.
- The intelligent system controllers (ISC's): To monitor and receive data from field devices, make access decisions and encrypt personal identification numbers independently of host processor.
- Standard and custom reports: To provide facility support and management information during routine and emergency situations.
- Interface with external systems for updates and revokes

HARDWARE/SOFTWARE ENVIRONMENT:

OPERATING AND DATABASE MANAGEMENT SYSTEMS:
The operating system for the client/server network is an IBM 3650 with NEC cluster software running Microsoft 2008. The operating system also provides redundant capabilities for the host/server using NEC server software.
The integrated database is a SQL database with Microsoft SQL for the database management system.

FIBER OPTIC NETWORK:
A dedicated Intellect Sonet fiber optic network with redundant forward and protect fiber rings provides Ethernet communication between system devices, workstations and servers. It integrates voice, data, LAN, and video traffic through a fiber multiplexer providing the required bandwidth. Ethernet TCP/IP Communications connect workstations to the system. Communication between the ISC's also uses Ethernet TCP/IP providing flexible, high-speed communications between multiple sites and buildings.

HOST SERVERS:
The system consists of redundant servers and NEC cluster software and Windows Server software. The data base manager is Microsoft SQL Server Database Management system. The application software is Lenel OnGuard.

The hosts communicate to client workstations and Lenel OnGuard to the panels using TCP/IP protocol onto the fiber network. The primary and secondary hosts maintain database synchronization through a separate LAN with the use of the NEC application - This link is used to bring the repaired server up to date when recovering from a server failure.

CLIENT WORKSTATIONS
The client workstations are IBM ThinkCenter computers. The operating system is Microsoft XP. The applications software is Lenel OnGuard.

The following workstations are installed at each airport; these are approximate numbers:

- Administration Workstations (Quantity 4)
- Alarm Monitoring Workstations (Quantity 7)
- Enrollment and Badging Workstations (Quantity 5)
- Badge Printers (Quantity 5).

HOURS OF OPERATION:
The system operates 24 hours per day/7 days a week.

2) **Airport Checkpoint Digital CCTV system (ACDTV) at JFK, LGA and EWR**

DESCRIPTION:
The system provides the following camera surveillance security, and alarm analytic monitoring functions using the VERINT video system:

- Camera surveillance at checkpoints locations to monitor operations.
- Camera surveillance of airport locations.
- All CCTV information is controlled by a Master Server and a Master Recorder.
- Standard and custom reports: To provide facility support and management information during routine and emergency situations.

HARDWARE/SOFTWARE ENVIRONMENT:

OPERATING AND DATABASE MANAGEMENT SYSTEMS
The operating system for the Master Server and Master Recorder is Windows and the data storage is on EMC. The integrated database is a Microsoft SQL database management system.

FIBER OPTIC NETWORK
A dedicated fiber optic network with redundant forward and protect fiber rings provides Ethernet communication between system devices, workstations and servers.

CLIENT WORKSTATIONS:
The client workstations are IBM lenovo. The operating system is Microsoft Windows. The application software is VERINT.

Workstations, JFK: approximately 7
Cameras, JFK: approximately 800

Workstations, LGA: approximately 22
Cameras, LGA: approximately 300

Workstations, EWR: approximately 15
Cameras, EWR: approximately 380

HOURS OF OPERATION:
The system operates 24 hours per day/7 days a week.

3) **Terminal Operations Management System**
LOCATION: Newark International Airport

DESCRIPTION:
Airport 20/20 is a multi-functional Terminal Operations Management System (TOMS) utilized by operations staff to manage four functions. These functions include:

- Flight Information System Displays (FIDS) – This system provides a visual flight display within Terminal B at Newark Airport (EWR) as well as the outlying AirTrain stations.

- Baggage Information Display System (BIDS) – This system provides visual baggage carousel information for passengers arriving at the International Facility at EWR. This system is controlled remotely by an operator at a fixed location through the network and can be controlled through a web application.

- Gate Management System (GMS) – The primary goal of GMS is to provide an efficient and optimum allocation of gate resources on a daily and seasonal planning for aircraft arriving and departing Terminal B. Currently, the system is used for the planning of approximately 15 gates at Terminal B; however, this could be expanded to add more gates in the future if needed.

- Ticket Counter Allocation Management (TCAM) – This system is to provide an efficient and optimum allocation of common use terminal equipment, resources, and ticket counters on a daily and seasonal basis. Currently, the system is used to manage the allocation of approximately 125 ticket counters.

HARDWARE / SOFTWARE ENVIRONMENT:

HARDWARE: The TOMS system runs virtual on a Cluster at 2 different off airport sites and backed up. The communications to the servers are through the Port Authority Wide Area Network. All workstations and devices connect to the Cluster.

Hardware Breakdown, approximate counts:
FIDS Monitors 63
PCs 15
Laptops 3

SOFTWARE:
The TOMS software runs on Microsoft Windows. The database is ORACLE.

ATTACHMENT E: COST PROPOSAL

1. Entry of Prices

The prices quoted shall be written in figures, in ink, preferably in black ink where required in the spaces provided on the Pricing Sheet(s) below.

b. All Proposers are asked to ensure that all charges quoted for similar operations in the Contract are consistent.

c. Prices must be submitted for each Item required on the Pricing Sheet(s).

d. All Proposers are asked to ensure that all figures are inserted as required, and that all computations made have been verified for accuracy. The Proposer is advised that the Port Authority may verify only that proposal or those proposals that it deems appropriate and may not check each and every proposal submitted for computational errors. In the event that errors in computation are made by the Proposer, the Port Authority reserves the right to correct any error and to recompute the Total Estimated Contract Price, as required, based upon the applicable Unit Price inserted by the Proposer, which amount shall govern in all cases.

e. In the event the Proposer quotes an amount in the Total Estimated column but omits to quote a Unit Price for that amount in the space provided, the Port Authority reserves the right to compute and insert the appropriate Unit Price.

f. The Total Estimated Contract Price is solely for the purpose of facilitating comparisons of proposals. Compensation shall be in accordance with the section of this Contract entitled "Payment."

g. The Total Estimated Contract Price shall be obtained by adding Sections 1.A through 6.A on the following price sheets.

Pricing Sheets

Acronym legend:

- PRCS: Parking and Revenue Control System
- IMCS: Identity Credential Management System
- GTIS: Ground Transportation Information System
- ASAAC: Airport Security Airside Access Control System
- ACDTV: Airport Checkpoint Digital CCTV System
- TOMS: Terminal Operations Management System
- JFK: John F. Kennedy International Airport
- LGA: LaGuardia Airport
- EWR: Newark Liberty International Airport

1. Distributed Systems, Class 1:

Item	System	Year 1	Year 2	Year 3	Total
1	PRCS, JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
2	PRCS, LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
3	PRCS, EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
4	IMCS	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
5	GTIS, JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
6	GTIS, LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

7	GTIS, EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

1.A: Total 3-year price for Distributed Systems, Class 1: $ _____

2. **Database System, Class 2:**

Item	System	Year 1	Year 2	Year 3	Total
1	DataLink	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
2	CrossMatch JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
3	CrossMatch LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
4	CrossMatch EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
5	MorphoCheck Handheld JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
6	MorphoCheck Handheld LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

7	MorphoCheck Handheld Terminal	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

2.A: Total 3-year price for Database Systems, Class 2: $ _____

3. **User Application Support, Class 3:**

Item	System	Year 1	Year 2	Year 3	Total
1	ASAAC, JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
2	ASAAC, LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
3	ASAAC, EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
4	ACDTV, JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
5	ACDTV, LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
6	ACDTV, EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
7	TOMS	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

3.A: Total 3-year price for User Application Support Systems, Class 3: $ _____

4. **Business Task Analyst** (full time)

JFK	Year 1	Year 2	Year 3	Total
Hourly Rate: $____, Yr 1 $____, Yr 2 $____, Yr 3	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

LGA	Year 1	Year 2	Year 3	Total
Hourly Rate: $____, Yr 1 $____, Yr 2 $____, Yr 3	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

EWR	Year 1	Year 2	Year 3	Total
Hourly Rate: $____, Yr 1 $____, Yr 2 $____, Yr 3	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

4.A: Total 3-year price for Business Analyst $ _____

5. **Estimated Extra Work Schedule, hourly rates for regular business hours (7:00 AM – 6:00 PM, Monday through Friday, excluding Port Authority-defined holidays)**

Note: The table below is divided into technical tasks. Proposers should not assume that each technical task requires a different person who will perform the relevant task. The Authority assumes that one person will likely perform multiple tasks.

Technical Task	Year 1	Year 2	Year 3	Total
Application Scripting (Windows and UNIX)	Hourly Rate $_____ x 15 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 15 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 15 estimated hours = Est. Annual price: $_____	$_____
Application Database (MSSQL/Oracle, Query, MS Access)	Hourly Rate $_____ x 40 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 40 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 40 estimated hours = Est. Annual price: $_____	$_____
Network Application Consulting	Hourly Rate $_____ x 2 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 2 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 2 estimated hours = Est. Annual price: $_____	$_____
User Support Lenel	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	$_____
User Support: Verint CCTV	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	$_____

Web Application - Programming	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 10 estimated hours = Est. Annual price: $_____	$_____
Consulting on Aviation Applications and Technology	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	$_____

5.A: Total 3-year price for Estimated Extra Work, regular business hours $ _____

6. **Estimated Extra Work Schedule, hourly rates for non-regular business hours (Excluding Port Authority-defined holidays: 6:01 PM - 6:59 AM, Monday through Friday; and 6:01 PM through 6:59 AM Friday through Monday)**

Note: The table below is divided into technical tasks. Proposers should not assume that each technical task requires a different person who will perform the relevant tasks. The Authority assumes that one person will likely perform multiple tasks.

Technical Task	Year 1	Year 2	Year 3	Total
Application Scripting (Windows and UNIX)	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	$_____
Application Database (MSSQL/Oracle, Query, MS Access)	Hourly Rate $_____ x 60 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 60 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 60 estimated hours = Est. Annual price: $_____	$_____

Network Application Consulting	Hourly Rate $_____ x 2 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 2 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 2 estimated hours = Est. Annual price: $_____	$_____
User Support: Lenel	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	$_____
User Support: Verint CCTV	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	$_____
Web Application - Programming	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 20 estimated hours = Est. Annual price: $_____	$_____
Consulting on Aviation Applications and Technology	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	Hourly Rate $_____ x 30 estimated hours = Est. Annual price: $_____	$_____

6.A: Total 3-year price for Estimated Extra Work, non-regular business hours $ _____

7. TOTAL COST PROPOSAL: Sections 1.A through 6.A = $_____

ATTACHMENT E.1: PRICING SHEET FOR CLASS 1 AND 2 SYSTEMS, WITHOUT SYSTEM ADMINISTRATION SERVICES

Note: Currently, the Port Authority requests system administration services under this RFP for Class 1 and Class 2 systems. However, the Port Authority may remove such services at some point during the Contract. Therefore, for **informational purposes only**, Proposers shall provide pricing in this Attachment E.1 for the Class 1 and Class 2 systems **without** system administration (as identified in Section 2.A of the SOW, Attachment C). If the Port Authority removes system administration from the Contract, the prices provided in this Attachment E.1 shall be used for the systems specified herein.

1. Distributed Systems, Class 1:

Item	System	Year 1	Year 2	Year 3	Total
1	PRCS, JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
2	PRCS, LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
3	PRCS, EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
4	IMCS	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
5	GTIS, JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
6	GTIS, LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
7	GTIS, EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

1.A: Total 3-year price (without system administration) for Distributed Systems, Class 1: $ _____

2. Database System, Class 2:

Item	System	Year 1	Year 2	Year 3	Total
1	DataLink	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
2	CrossMatch JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
3	CrossMatch LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
4	CrossMatch EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
5	MorphoCheck Handheld Terminal JFK	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
6	MorphoCheck Handheld Terminal LGA	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____
7	MorphoCheck Handheld Terminal EWR	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	Monthly: $_____ x 12 = Annual : $_____	$_____

2.A: Total 3-year price (without system administration) for Database Systems, Class 2: $ _____

ATTACHMENT F- PROPOSER PREREQUISITE REFERENCE FORM

Name of Proposer:_____

Please provide a list of references on the firm's performance of similar work within the last five years, including all current contracts. Use additional sheets as necessary.

Include the following information for each reference:

Customer Name:_____
Address:_____
Contact Name and Title:_____
Phone and Fax Numbers of Contact:_____
Email Address of Contact:_____
Contract date(s):_____
Contract cost:_____
Description of work:
_____
_____

Customer Name:_____
Address:_____
Contact Name and Title:_____
Phone and Fax Numbers of Contact:_____
Email Address of Contact_____
Contract date(s):_____
Contract cost:_____
Description of Work:
_____
_____
_____

Customer Name:_____
Address:_____
Contact Name and Title:_____
Phone and Fax Numbers of Contact:_____
Email Address of Contact:_____
Contract date (s):_____
Contract cost:_____
Description of work:_____

ATTACHMENT G: CONTROL REQUIREMENTS CONTRACT CHECKLIST

General

- Documented procedures, flowcharts and process maps for the application.
- Conduct regular audits, vulnerability testing, security scanners.
- SSAE 16 SOC 2 (previously known as SAS 70 Level 2)
- ISO27001 Certification
- Physical access to the application hardware should be appropriately restricted.
- The application should have a warning banner, terms of use, and/or privacy statement that was approved by the PA Law Department on the login screen.
- Remote access should be restricted and documented in accordance with PA policy.
- Background check should be performed on all personnel.

System/Security Administration

- Administrative personnel should receive adequate training.
- System and security administration procedures should be documented and distributed.
- Administrator(s) roles and responsibilities should be documented.
- Developers and/or programmers should not have access to the production server.
- Operating system administrators should not have access to the production database and application.

Hardening of operating system/database that supports the application:

- Disable and/or remove unnecessary ports/services.
- Remove all sample from the box.
- Default, public, and guest accounts should be secured/locked/removed.
- Change all passwords; delete all default content and login scripts.
- Limit administrative and user account privilege and access.
- Document system accounts like administrator, root, oracle, and sys.
- Document user/group access rights
    - Users/groups should be setup with least access required to perform job responsibilities.
- Follow PA password standards or better (90-day expiration, lockout after 3 incorrect password attempts, no concurrent logins, 6 alphanumeric characters)
- Set "automatic session timeout" to 15 minutes of inactivity and require user to log back in with valid ID and password.
- Implement access control at the database level (i.e. user roles and permissions, passwords, secure links)
- Use secure encrypted remote access methods.
- If the application is a web application, log (and monitor) web traffic and trend the activity looking for abnormal activity.
- Ensure that appropriate security and vulnerability assessment tools are running.
- At login, last user login should not display.
- Inventory listing of hardware and software should be current and maintained.

License Management

- Ensure that application licensing requirements are documented, reviewed and maintained.

- Application licenses should be current/valid and individuals/groups with application access should have completed the necessary access request forms and adhere to licensing requirements.

Logical Access Controls

- Procedures to grant/modify/delete access should be documented.
    - Access request forms for adding/modifying/deleting users should be used.
    - Account expiration for contractors and consultants.
    - Accounts adequately identify the user – no generic accounts
- Ensure that security administrator procedures exist to:
    - Create/remove application access in a timely manner
    - Review user roles/permissions
- Validate that all users have accessed the application within the past 90 days.
    - Review dormant accounts
    - Inactive accounts should be removed.
- Each user has a unique user ID as described in the Port Authority Standard and Guidelines.
    - All user accounts profile should include Employee ID# and full user name.
- Roles should have a segregation of duties/roles.
    - Roles are setup with least access required to perform job responsibilities.
- Access Control List (ACL) should include:
    - Current list of ACL
    - Creation and updates to ACL
    - Testing and approvals of ACL
- The application should have the PA's warning banner on the login screen.
- Remote access should be approved, secured, and documented in accordance with PA policy.
- Encryptions level at a minimum should be AES 256bit when encryption is used.

Password Controls

- Ensure that password controls for the application are consistent with PA requirements
    - Passwords must be at least 6 alphanumeric characters long
    - Passwords must be changed every 90 days
    - Passwords must not be shared
    - Accounts should be locked after a three logon failures
    - Passwords should not be the same account name
    - No concurrent login capabilities
- Password file should be securely stored with limited access and encrypted.
- Application forces initial passwords to be changed and the initial passwords should not be easily guessable.
- Maintain a password dictionary and password history should be set to 5.

Application Controls:

Data Validation & Input Controls

- The application should have input controls to verify the validity of the data entered.

Data Retention and Management

- All data should be classified according to its sensitivity (confidential, etc) and protected accordingly.
- Data archive strategy should be documented and in place:
    - Should specify how long active data is kept.

Data Integrity and Security

- Sensitive data, such as credit card #s and social security #s, should be encrypted.
- Data should be restricted and audit trails should be available to identify all user activity include view access to sensitive data.
- Data should be stored in the database encrypted and blocked from user views in the application unless it is authorized.

Application Interfaces

- Interface file should be secured and archived.
- Reconciliation of data should be done on a batch record and totals. Detail data reconciliations should be completed on periodic basis.

Processing Controls

- Application databases/interfaces should have the necessary controls to prevent processing of inaccurate, duplicate, or unauthorized transactions and producing inaccurate outputs.
- Controls to ensure that all data is processed and accounted for should be in place.
- Rejected items should be logged, tracked and resolved in a timely manner.

Change Management

- Processes and tools should be used to report, track, approve, fix, and monitor changes on the application.
- The application and all changes to the application should be tested before being put into production.
    - Documentation of approval for change and evidence of testing should be in place.
    - Specific timetable/schedule should be documented.
- Emergency procedures should be documented and distributed.

Application Logging, Audit Trails and Record Retention

- Audit trails for operating, application, and database systems should exist and reviewed.
- Users and roles should be tracked and reviewed
    - Maintain documentation
- All failed logon attempts should be logged.
- All sensitive transactions and changes should be logged and an audit trail created.
- Audit trails should contain who made the change, when it was made, and what was changed.
- Only the security administrator should have access to change or delete these logs or audit trails.

- Audit trails should be reviewed by the business owner(s) and security administrator.

Management Reporting

- Management reporting should be produced through the application.
- Transaction logs should be maintained and reviewed periodically.
- Access reports by user and privilege should be produced and reviewed periodically including access violation reports and exception transaction reporting.

Contingency Planning, Disaster Recovery and Backup Management

- A business contingency plan and a disaster recovery plan for the application should be documented and stored off-site, including escalation plan and current call tree.
- Plans should be tested and the outcomes of the tests (success/failure) should be documented.
- Regular backups of the application and the application data should be stored off-site.
- Application executables should be stored off-site or in escrow.
- Application configurations should be documented and backed-up.
- Full system backup should be encrypted.
- Backup procedures should be documented.
- Tape maintenance should include:
    - Periodically testing integrity of tape
    - Procedures for tape destruction due to faulty or scratched hardware.

Performance Monitoring

- Incident monitoring procedures should be documented and incidents logs should be reviewed to ensure that appropriate action is taken.
- Performance statistics should be examined and reviewed periodically by system administrators/business owner(s).
    - If vendor(s) support the application, a vendor contract and service level agreement should be in place. The SLA should have provisions for uptime, performance monitoring, updates, etc.
- Baseline tools or security products should be used and checked on a quarterly basis.

Patch Management

- Patch management procedures and documentation
    - Procedures should include testing, approvals, and distribution.
    - Documentation should include emergency procedures.
- Apply all new patches and fixes to operating system and application software for security.

Physical Protection

- Physical access to the application hardware should be appropriately restricted.
    - Physical access secured by single authentication mechanism i.e. swipe card.
    - Physical security adequate for equipment (locked cabinets).
- Appropriate fire suppression systems should be in place.
- Environmental condition adequately controlled (no water, dirt, clutter) and monitored.
    - Temperature and humidity monitoring should be implemented.
- Security cameras installed in sensitive areas
- Power surge protection and emergency power backup are in place.

Anti-virus Management

- Virus patch management procedures should be documented, including emergency update procedures.
- Virus software should be implemented and up-to-date.
- An engine and definition management should be in place.
- A remote distribution server should be implemented
    - Documentation on remote distribution should be current and maintained.
- Intrusion detection system should be in place, including incident response procedures.
- Firewalls should be implemented
    - Firewall rules documentation should be up-to-date.

Wireless Device

- Devices should be using WPA/WPA2 and AES encryption or better.
- Devices should disallow broadcasting of the SSID.
- All default parameters should be changed.
- Devices should have MAC address filtering enable or some type of authentication mechanism in place.

Web Application Vulnerabilities and Controls

- Best Practice and Standards:
    - The Open Web Application Security Project (OWASP) - www.owasp.org
    - www.webappsec.org (a consortium of web application security professionals)
    - Center for Internet Security (CIS) – www.cisecurity.org
- Perform data validation & integrity checks for field values and ensure the HTML special characters are stripper for all HTML request.
- Do not allow site pages to be cached by user browsers.
- All sensitive, personal or confidential data (including SSN, passwords, session IDs for sensitive applications, confidential or sensitive business transactions, etc.) should be transmitted between browser and server within an SSL-encrypted session (or other encrypted transmission) and are encrypted in the database at rest.
- All sensitive and personal data should be masked and encrypted were possible.
- Legal Issues:
    - The site should have a privacy statement and term of usage.
    - American Disability Act – Section 508 should be consider during the development process due to the requirement that federal agencies' electronic and information technology is accessible to people with disabilities.
- Web Authentication: To prevent passwords from being passed in the clear, have authentication occur within an SSL encrypted tunnel. Use SSL (certificate) to protect the password.
- Password Reset:
    - For internal applications, reset passwords via the helpdesk or security administrator of the site
    - For external applications, send temporary password to known e-mail address, that must be changed upon login and/or
    - Have customer service reset after the user has been validated.
    - If possible, use two factor authentication like Secure ID fobs.

Credit Card Processing Checklist

- PCI Standards should be enabled and be PCI compliant. Ensure all vendors and consultants are required to be PCI compliant. Attachment - PCI DSS v2
- A segregated network and/or an approved Point of Sale terminal should be in place for the system or terminal used to process credit card transactions.
- The credit card processor standard and requirements should be enabled, i.e. maintain transaction data for two years.
- Maintain the security of the customer information, including not storing credit numbers, the cardholder CVC/CVV numbers or any of the data from the magnetic strip on the credit card.
- Maintain the transaction data for contesting chargebacks, ensure that the processor fees are appropriate and do reconciliations of the transactions processed and the money deposited in the Port Authority bank accounts.
- Make Treasury (Cash Mgmt) and Comptroller's (Revenue Accounting) aware credit card processing. Have Treasury fill out the Merchant form to get a Merchant ID for MasterCard/Visa, Discover and American Express.
- Have Treasury and Procurement enter into an agreement for credit card processing.
- Create a privacy policy and procedure for staff and consultants.
- Perform quarterly vulnerability scans of the network that contains the credit card processing, annual PCI reviews according to the PCI DSS, and annual system penetration testing.

Disaster Recovery Plan Checklist:

Disaster recovery is a plan which could be executed in the event of a total disaster in order to bring the computer systems back to a functioning whole. Typically, the disaster in question is one, which destroys a complete site that requires restoration of support, particularly Information Technology support. Most commonly considered causes of disasters are fire, explosion, flooding, hurricanes and tornados. Disaster recovery planning normally involves alternate locations for major systems as well as the planning and testing of switch over measures, emergency transportation and so on.

The Disaster Recovery plan should include at a minimum the following areas.

1. Disaster Recovery
    - Manager Responsibilities
    - Plan Administration
        - Distribution of the Disaster Recovery Plan – All team members, LAN and an offsite location should have a copy of the current plan and its attachments.
        - Maintenance of the Business Impact Analysis
        - Training of the Disaster Recovery Team
        - Testing of the Disaster Recovery Plan
        - Evaluation/Review of the Disaster Recovery Plan and Tests – the DR Plan should be reviewed and the DR Test should be performed at a minimum twice a year. Update the plan to reflect changes in activities, procedures, performance, staff, and etc. Set a regular time for the review.
        - Maintenance of the Disaster Recovery Test Results – Maintain copies of the test results and what scenarios and areas of the plan were tested.

2. Business Impact Analysis - Minimize the impact on the business with respect to dollar losses and operational interference
    - Critical Time Frame - Recover the system and/or component of the system within the critical time frames established and accepted by the user community. This should include the time estimate of how long it would take to recover the whole system or any sub components.
    - Application System Impact Statements - This area is where a business owner decision of what areas of the system has a priority in how it is brought back into normal operation. How long could these operations be performed without computer support?
        - Essential – Are systems or components of the system that are very critical and need to be back in operation immediately because the business cannot function.
        - Delayed – Are systems that are needed but could be delayed and could not adversely effect the business process.
        - Suspended – Are system or components that are not critical and can wait until the full system is back to normal operation.
    - Recovery Strategy & Approach

3. Disaster Definition – All possible interruptions should be defined, and then the steps to minimize their impact need to be documented. This includes disk array failure, power loss, loss of network, loss of wireless network, loss remote access, equipment, computer processor failures, etc.
    - Detailed Recovery Steps for each Disaster Definition - This should be the technical steps to recover the different areas of the system like the Operating system, database, application, routers, firewall, and etc.
    - Escalation Plans and Decision Points

4. Data Center Systems – Dependencies should be notated.
    - System Components- A copy of all essential office equipment and records should be stored off-site. Specify any special computer hardware, software, databases, networks or other technology.

        - Backup Strategy
            - Storage Rotation
            - Back-up Files
            - Off Site Storage of Back-up Files
            - Back-up Files Retrieval Process, Vendor information and Forms for Off Site Storage

        - Hardware -
            - Hardware inventory for system in operation
            - Desktop Workstations (In Office)
            - Desktop Workstation location
            - Desktop Workstations (Offsite including at home users)
            - Laptops

- Software -
  - Software inventory of the system in operation
  - Systems, Applications and Network Software
  - Communications
  - Operations

- Off-Site Inventory

- Supplemental Hardware/Software Inventory

5. Escalation Plans and Decision Points

6. Disaster Recovery Emergency Procedures
   - Plan Procedure Checklist - should have a checklist of the plan procedures and area for documenting exceptions where the plan was not adhere to and what was done in its place. Disaster Recovery Procedures in a check list with approval format.

   - Disaster Recovery Organization – should have the full disaster recovery team listed by position or individual and what are their responsibilities. This section of the plan should include Port Authority and PATH personnel, PA/PATH management, and all vendors that work or have responsibilities during a disaster. This area should be reviewed semi-annually for updates and changes.
     - Recovery Organization Chart
     - Disaster Recovery Team & Recovery Team Responsibilities
     - Recovery Management & Senior Manager Responsibilities
     - Damage Assessment and Salvage Team & Team Responsibilities

   Problems and Changes - Need to be documented and what was done to rectify them.

   Essential Position – Require back-up personnel to be assigned.

7. Pre-Disaster - What steps need to be in place prior to a disaster for this plan to work? If there are any assumptions, they should be notated here.
   - Recovery Management
   - Damage Assessment and Salvage
   - Hardware Installation

8. Contacts information - This area should be reviewed semi-annually for updates and changes.
   - Disaster Recovery Team - This should include primary and secondary phone numbers, home address, emergency contact information, and their backups information.
   - Vendor Phone/Address List – Include account information and account representative information.
   - Command Center – Primary and Alternative site locations, hot spots, phone numbers, time scheduling

9. Post-Disaster – Detail what steps need to be taken to move from disaster mode back to normal operations.

ATTACHMENT H: STANDARDS AND GUIDELINES FOR PORT AUTHORITY TECHNOLOGY

See following pages

THE PORT AUTHORITY OF NY & NJ

Standards & Guidelines

for Port Authority Technology

(for distribution in RFP's)

Technology Services Department

Version 7.2
March 25, 2010

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Introduction

The purpose of this document is to communicate the standards established by the Technology Services Department (TSD) and provide guidance in proposing IT solutions for the Port Authority of New York & New Jersey (PANYNJ), the Agency.
To that end, these guidelines are intended to help RFP Submitters do the following:

- Implement computing and networking solutions that ensure the utmost reliability, availability and security.
- Procure hardware and software that advances current and mandated business needs and enables departments to work with other departments/offices more effectively.
- Easily and efficiently communicate and exchange information throughout the agency.
- Achieve greater systems integration through leveraging and building upon standardized infrastructure and facilitating systems management.
- Adherence to these standards ensures that IT investments achieve Enterprise connectivity, interoperability, consistency, and will enhance performance in a cost-effective way.

1.0 The Port Authority Wide Area Network (PAWANET)

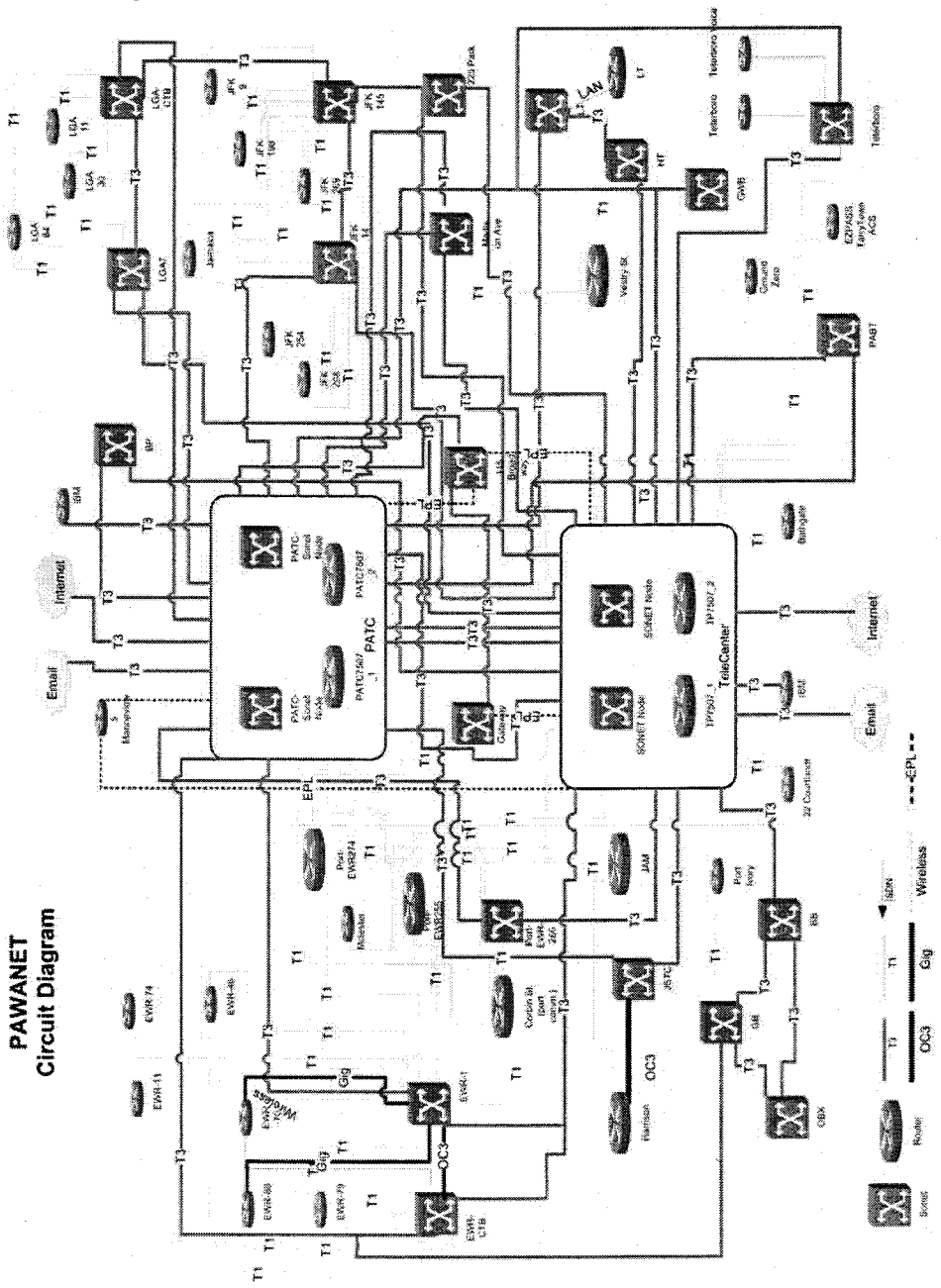
1.1 PAWANET Overview

The Port Authority has a modern distributed computing network, called the Port Authority Wide Area Network (PAWANET), which is managed as an Enterprise resource. It connects all the various Port Authority facilities and transportation systems using high-speed voice, data, and video lines or links.
This network is crucial to all Port Authority businesses because it provides the connections for applications such as e-Mail, Internet and Intranet access, SAP, PeopleSoft, Electronic Toll Collection, CADD, Lease Image, Closed Circuit Television (CCTV) surveillance systems, and in the future, videoconferencing, and more.

PAWANET consist of a Managed Fiber Optic SONET network, provided by Verizon Select Services. This network consists of two dual OC48 SONET Rings that connects key Port Authority facilities, and intersects the Port Authority's two Data Centers. High-speed DS1, DS3, and Resilience Packet Ring (RPR) links are allocated on this network to form PAWANET's Wide Area Network (WAN) topology. Additional high-speed Ethernet Private Lines (EPL) has been deployed to support Key Port Authority's off-ring facilities. Remote nodes are linked using high-speed dedicated communication lines. Alternate high speed dedicated communications lines and high-speed dial up communication links (ISDN Lines), provide back up paths should the primary links fail.

The network consists of state-of-the-art Cisco Systems equipment and services, such as, high performance Cisco Catalyst switches and routers. The Port Authority use Cisco Systems SMARTnet hardware/software maintenance services, and Cisco's Technical Assistance Center (TAC) to support and maintain the network.

1.2 PAWANET Circuit Diagram (Note: IGXs are no longer in the network)



Remote nodes are linked using high-speed dedicated communication lines. Alternate high speed dedicated communications lines and high-speed dial up communication links (ISDN Lines), provide back up paths should the primary links fail.

1.3 Inter-site Services Providers

The Technology Services Department (TSD) has contracted with a variety of companies to provide inter-site services Companies providing communications services for the Wide Area Network are listed below.

- AT&T Local Services
- Verizon

1.4 PAWANET Functions

Currently PAWANET provides the following functions:

Data	Supports the low and high volume transfer of data used for applications, such as SAP and PeopleSoft, and for network communications, such as e-Mail. Provides a data path for off-site, data backup of file, print and application servers. Enables the use of Storage Attached Network (SAN) for network storage of user files and routing jobs to shared network printers.
CCTV	The transfer of Closed Circuit TV (CCTV) data is supported across the entire network to provide security for the Port Authority's key facilities.
Voice	The network provides the hardware capabilities for voice transmission for future implementation.
Videoconferencing	The network switches and transmission lines are capable of handling videoconferencing to support the agency's future needs.

1.5 Features of PAWANET

PAWANET provides a high performance and reliable fail-safe communications network. These are its key features:

- Alternate paths of communication
- Support of high volume traffic such as CADD, CCTV and others
- Catalyst 3000, 4000 and 6500 switches at all the major sites, and at the Teleport.
- Cisco high performance 2000, 7200 and 7507 router family products with redundant power supplies.

1.6 Supported Protocols

The network supports the following network protocols, allowing dissimilar platforms to communicate within PAWANET:

TCP/IP:	TCP/IP is the universal protocol that allows communications between all systems within the Port Authority's network, as well as other networks.
IPX/SPX:	This protocol allows communications between all Novell platforms.

SNA/SDLC: This protocol allows communications between all IBM systems and other systems that support SNA.

1.7 PAWANET Switches and Routers

The current standard switches and routers used on PAWANET are:

- Dual SONET OC48 Rings that connects key Port Authority facilities and data centers.
- Cisco 7200 high performance routers
  Provide high-speed connectivity and routing capabilities across the ATM network in support of TCP/IP, IPX/SPX and bridging functions and provides routing capabilities for Port Authority Internet access.
- Cisco 7500 series high-capacity redundant routers
  Serve as the -network backbone core router that provides high speed routing functions between the, Teleport, Port Authority Technical Center and all PAWANET connected facilities as well as the IBM mainframe. Also provide high-speed connection and routing capabilities to the disaster site for data recovery in the event of a catastrophe.
- Cisco 2000 series medium capacity routers
  Provide high-speed connectivity and routing capabilities to the Port Authority's remote locations.

1.8 Approved Servers

IBM File/ Print/Application and NEC Express 5800 series servers may be connected to PAWANET. The use of Vmware's ESXi virtual infrastructure is also an approved configuration, Specialized servers (e.g., appliances) to support a specific line department application will be reviewed on a 'case-by-case' basis.

Replacement server must conform to the category listed above. Deviation from this policy will not be allowed without prior approval of the Chief Technology Officer or her/his designee.

1.9 Enterprise Addressing Scheme (including IP addressing)

The Port Authority's Enterprise network is a TCP/IP Class B network allowing for a maximum of 255 subnet assignments. Subnets are assigned on a geographical basis according to the number of resources required. Workstations are configured for dynamic assignment of IP addresses via Dynamic Host Configuration Protocol (DHCP).

1.10 Enterprise Network Monitoring Software

The Port Authority continually monitors its WAN and the availability of its links. To provide for real time monitoring, the following software utilities are used:

- HP Open View Network Management software
- Cisco Works for Switched Internetworks

2.0 Network Resources

2.1 Network Overview

The Port Authority has a modern distributed computing network, which is managed as an Enterprise resource. The network connects all individual PCs, servers, printers, and other devices in a unified computing infrastructure that makes it possible for the Port Authority to conduct its business.

The Enterprise Network consists of the PAWANET (see Section 1.1) and connected Local Area Networks (LAN's). The line of demarcation between the cable and wiring which is the responsibility of the carrier and the Port Authority's area of responsibility is usually a wiring closet. The Port Authority's Enterprise Network consists of the following components on the Port Authority side of demarcation:

- Enterprise Devices
    - Cabling
    - Routers
    - Switches
    - Wiring Closets
    - Communications Equipment Racks
    - Server Racks
    - File and Print Servers
    - Application Servers
    - Storage Area Networks (SAN)
    - Network Printers
- LAN Devices
    - Desktop PCs
    - Workstations
    - Laptops
    - Local Printers
    - Scanners
    - Copiers
    - PC Peripherals

2.2 Enterprise Network Architecture

The Port Authority operates an extensive network of Enterprise file, print and application servers. These devices are linked to an Enterprise Wide Area Network. The

flexibility provided by the use of multiple servers, server clusters and Storage Area Networks (SAN) offers users improved network response, greater reliability, increased data security and reduced operating cost. Adherence to the standards outlined in this section allows the Port Authority to manage their systems, applications and data in a way that best meets our business needs while maintaining interoperability and safeguarding Port Authority's information assets.

2.2.1 Operating System and Software

All Enterprise File & Print services in the Port Authority are currently based on the Novell Netware 6.5 operating system (the agency will be migrating to Microsoft networking services during Y2010). Microsoft Windows 2003 and 2008 servers (Standard and Enterprise) are the primary operating system in use. Sun Solaris is also supported as application servers and only when required for functionality.
In addition to the base operating system, all servers must include the following components:

- Virus Protection (minimum: McAfee Engine 8.5.0i, with current DAT files)
- Network Security
- Remote Monitoring and Management
- Intrusion Detection
- Systems Backup (minimum: Upstream 3.5.0c)
- Uninterrupted Power Supply (If central UPS is not installed at the location)
- Current Service Packs and security patches (minimum: SP1)

Note: All operating system and server software will be provided by the Technology Services Department.

2.2.2 Configuration

All network devices--including servers, workstations, network printers, and network faxes--must use IP addresses which conform to the standards outlined in sections, 1.9 *Enterprise Addressing Scheme*, and 2.3.1, *Server Names*. All servers will be configured using the following parameters:
Base Configuration:

- C: (OS Drive) Minimum 25 GB
- D: (Application Drive) Minimum Based on Application's space requirements
- IP Protocol

2.2.2.1 Drive Mapping Conventions and Organization

Mapping of workstation drive pointers to SAN or server disk volumes or folders is currently accomplished through a Novell NetWare Login Script or the Microsoft equivalent. The following drive letters are reserved for Novell installations:

Pointer	Volume or Folder

H:	Novell login (first network drive)
M:	Reserved
P:	Public Applications
Q:	Installation and Upgrade Utilities
S:	Departmental shared directories and files
T:	Reserved
U:	Users Private Home Directory
Z:	Novell system files (Search mapping)

- Public (Shared) application software installed on file and print servers, or server cluster must reside on a separate volume named "APPS".
  Example: P:\APPS
- Each software application installed on file and print servers, or server cluster, must have its own sub-folder.
  Examples: P:\APPS\EXCEL
  P\APPS\LOTUS
- SYS volume must be used for operating system and support software only.
- Shared Data stored on file and print servers, or server cluster, shall reside in a volume named Data, and shall be mapped to the "S:\" drive pointer.
  Example <Server _name>:\DATA\SHARE on a single server
  <Cluster_name>:\DATA\<Department_NAME>\SHARE on a server cluster
- Each Department's SHARE folder will contain at least three sub-folders titled Org, Everyone and Projects.
- The Projects folder is provided for storage of project related files. All departmental projects will be kept in a sub-folder under the Projects folder and the folder will be named using the same name as the project. User rights will be assigned by a group having the same name as the project folder. Only colleagues requiring access to the project files should be granted rights to that project folder.
- Under the Projects folder will be two additional folders, one called "Active" and one called "Completed". Active projects reside in the "Active" folder.
- When staff identify a project as being completed, the project folder will be moved to the "Completed" folder and all rights, except for "Read" and "FileScan" will be removed from the folder. This will ensure that the final project documents remain unchanged, while still allowing authorized staff to review the old documents and use them as templates for new documents if desired. The "Completed" folder will be set to archive its data.
- Under the "ORG" folder will be subfolders with names corresponding to the various divisions within the department. By default, only staff within a division will have access to a division's folder. These folders are intended to hold data for a specific division that would not normally be shared departmentally. Staff from other divisions would not have access to these folders unless the division manager of the

owning division gives their approval. Having folders setup by divisions will simplify the process of identifying who is responsible for the contents of a folder.

- The "S" and "U" drives should only be used to store business related files.
- The Systems Administrator, at the direction of the Director, may from time to time remove any data deemed to be non-business related.
- A folder called "Everyone" will be created in the Share folder. All staff in the department will have full access to this folder to store and retrieve files that are not related to a project or a division's day-to-day operations.
- Additional shared folders, with access restricted to only specific users, if required, will be created in the Share folder. Access will be restricted through the use of Inherited Rights and access will be granted through the use of groups. These groups will be named using the same name as the folder name.
- In general, rights to any folder will be granted through the use of a group having the same name as the folder. The group would have trustee rights to the folder, and users would be added to or removed from the group as needed. All rights would be granted or revoked through an internal workflow approval process.
- A user "U" drive will be assigned to each standard network account for use by each individual user to store business related data on the network. Access to the "U" drive is restricted to the account owner only. Users receive all rights to this folder except for "Access Control" and "Supervisory". Users cannot share data on their "U" drive. Files should be shared only by using the Share, ("S") drive.
- Access to a user's home directory, by anyone other than the owning user is prohibited and will be removed after notifying the end-user.
- Installation files used in the installation of desktop software must reside in a sub-folder under the "APPS" volume

  Example P:\APPS\Psoft

2.2.2.2 Connecting LAN Devices to the Enterprise Network

The Technology Services Department (TSD) is responsible for connecting all LAN devices to the Enterprise Network (PAWANET) provided they meet the Port Authority's standards.

2.2.3 Network Resources Security

2.2.3.1 Server Physical Security

All network equipment must be physically secured in a locked room.

2.2.3.2 Server Logical Security

To safeguard the Port Authority's Information Technology (IT) systems and data, TSD has implemented a number of processes and procedures, including the requirement that all users accessing the Port Authority's networks authenticate to a Directory Service

(using either Novell Netware e-Directory or Microsoft Active Directory (AD). Both Directory Services contain descriptions of all network devices including servers, printers, shared drives and user accounts.

TSD is responsible for providing all Enterprise servers with the following protection of their logical resources:

- Guard against unauthorized access by making sure that servers cannot be booted from a floppy.
- Scan all workstations for viruses daily.
- Scan all laptops for viruses at log-in.
- Scan all incoming data from users, server peripherals, diskette, CD-ROM, tape drives, other servers, and the Internet for viruses
- Perform regularly (daily and/or weekly) backups as defined by the Technology Services Department. (see section 2.5 - System Backup and Recovery)
- Test recovery procedures annually.
- Use system and application passwords that conform to the Technology Services Department standards.
- Configurations must conform to security parameters identified by NetVision Suite software.
- Perform deleted file purges immediately or no later than 6 days after file deletion.
- Control all remote access using the Port Authority's Remote Access System.

2.2.4 Network Access and User Account Security

2.2.4.1 Account Creation

User and Application accounts are unique and provisioned and managed in our Directory Service for both the Novell and Windows network resources. Documentation for the creation of user accounts and authority for access is maintained by the System Administrator.

2.2.4.2 Time Restrictions

Due to the fact that The Port Authority serves its clients 24 hours a day, we do not have Login Time Restrictions on network resources. All staff may access their Novell account 24 X 7.

2.2.4.3 Concurrent Logins

Login sessions will be limited to one connection per user. User accounts should not have the ability to login to multiple workstations after establishing one active connection to the network.

2.2.4.4 Intruder Detection

These system-monitoring features must be active:

- Restrict the count of incorrect login attempts to three before the account is locked out.
- The time for which unsuccessful login attempts are retained to determine a possible intruder attack should be a minimum of 30 minutes before the counter is reset to zero.
- The time for which a user account remains disabled before the account can be used again should be a minimum of 30 minutes.

2.2.4.5 Passwords

All user accounts must have passwords conforming to the following standards:

- Minimum length is six (6) characters.
- Should not be easily guessed. It should not be related to one's job and should not be a word in the dictionary or a proper name.
- Should be set to expire at least every 90 days and 30 days for accounts with system or application administrator access.
- Grace Logins should be activated and limited to three.
- Users should be notified several days in advance of password expiration.
- Users should be forced to change their password on initial login and once it expires.
- Unique passwords should be required when changed. Users should be prevented from reusing a previous password for a minimum of one-year.
- Users should not be permitted to change their passwords more than once a day.
- Passwords should be encrypted in storage.
- Passwords must be entered in a non-display field with a re-enter verify function for new passwords.
- Passwords must not be available on hard copy.
- Passwords used in system startup files and login scripts must be encrypted.
- If an application uses a default password, change it on installation.
- Do not use cyclical passwords, such as the word, February, during the month of February.
- Do not reveal your password to anyone except authorized persons.
- Use both upper and lower case characters and special characters where possible.
- Change password if it has been disclosed or compromised.
- Protect by using a screen saver password with a recommended 15-minute time-out period.
- Passwords should not be the same as the user ID

Passwords are considered confidential data. They protect the Port Authority's network resources and grant system privileges and access. Disclosure may result in unauthorized access to data, system files and transactions. Passwords are also your signature and identify you as the individual who is responsible for the system activity.

2.2.4.6 Modems

Staff are prohibited from connecting dial-up modems to workstations that are simultaneously connected to PAWANET or another internal communication network unless approved by the Technology Services Department (TSD).
Where modems have been approved, users must not leave modems connected to personal computers in autoanswer mode, such that they are able to receive in-coming dial-up calls.

2.2.5 Remote Access System

The use of local modems to establish direct dial connections to devices on the Port Authority's network is prohibited. Exceptions to this policy require the approval of the Technology Services Department (TSD).
The approved mechanism for remote access to the Port Authority network is through the Remote Access System (RAS). The Remote Access System utilizes an Internet-based Virtual Private Network (VPN) tunnel established over the Internet linking remote users to the Port Authority Wide Area Network (PAWANET) (remote client to PA site). It is designed to provide authorized Port Authority users with secure access to corporate applications and to files available on their departmental file servers. This access to applications and resources is delivered through a thin-client environment consisting of a farm of Citrix MetaFrame/Microsoft Terminal Services servers capable of supporting 200 or more simultaneous users each. There is no provided access to the user's office PC desktop. The system also provides access to IBM enterprise server ("mainframe") applications. Port Authority offices without direct connection to the Port Authority Wide Area Network (PAWANET) can use this system to establish remote access to corporate applications located on PAWANET.
RAS provides multiple security mechanisms to ensure that only authorized users gain access to the Port Authority's computing resources and systems. Through multiple security steps, the user must respond to security challenges. After successful authentication verification, authorized users are provided with access to corporate applications and their departmental network resources through the thin-client environment.
The Port Authority also supports corporate site-to-site VPN connections and utilizes Cisco equipment for these connections.

2.2.6 Network Resources Hardware Standards

2.2.6.1 Standard Servers

A representative sample of standard servers is as follows:

PORT AUTHORITY SERVER STANDARDS

Server Description	IBM Model
WEB Server, Small applications server	xSeries 3550M2
Medium applications server	xSeries 3650M2
Database Server, Multiple and Large application server	xSeries 3850M2

Each server shall have at least 3 network interface ports to support a production, management and backup network, and redundant power supplies.

The Port Authority manages servers models via a lifecycle process with a minimum 'in service' life of three (3) years.

2.3 Network Naming Conventions

2.3.1 Server Names

The Port Authority employs a naming convention for all servers within PAWANET. That convention will be discussed during a solution implementation phase,
Static IP addresses for servers, printers and faxes will be assigned by Technology Services Department (TSD).

2.4 Directory Services and Structure

The Port Authority uses Novell e-Directory and Microsoft Active Directory to manage network resources and user access. Port Authority departments are designated as organizational units (OU) and servers are network objects contained within the OU. All network printers should be created as e-Directory objects. NDPS should be utilized. Applications are distributed using Novell's ZENworks. Applications are distributed based on the type of workstation and user definitions. Scheduling of distributions is done in conjunction with client departments.

2.5 System Backup and Recovery

The Port Authority, for distributed servers, has standardized on FDR Upstream software for data backups.

- The System Administrator is responsible for verifying that system backups, both local and remote can be used to restore the data. Tests of the ability to successfully restore from the backup system will be performed annually. It is recommended that the test data restore be performed on a single non-critical directory only, not the entire server. Tests of the ability to restore system and application files will be

performed on a non-production server in a controlled environment. When incremental or differential backups are routinely used, the test restore procedure should incorporate both.

- Immediately prior to performing the test restore procedure, do a special full backup on the directories being tested.
- Testing a full restore should only be performed on a non-production server.

Depending on the criticality of the data and the redundancy needs, other products are in use within the Port Authority. Double-Take software is used for 'file-level' copies across distributed servers. IBM's SAN-to-SAN replication (block level copy) for database protection.
All backup media and records must be treated with the same level of security and confidentiality as the original data.

2.5.1 Backup Logs

The System Administrator will maintain the following logs for a period of two years:

- Back-up activity
- Rotation of back-ups,
- Usage/rotation of back-up media
- Off-site data storage.

2.5.2 Backup Scheduling

The System Administrator is responsible for performing back ups of data, application and system files. This must be as follows:

- Weekly full back up of each server. A full back up is a back up of all files on the server.
- Daily differential, incremental or full back up of each server or server cluster. The type of back up performed is dependent on time constraints and the amount of data to be backed up. Incremental back ups are back ups of all files changed since the last back up. Differential back ups are back ups of all files changed since the last full back up.
- A Grandfather, Father, Son (GFS) scheme based on a 33 tape rotation should be used to ensure complete back up and recovery.
- Store daily and weekly back-up media in a locked fire proof cabinet outside of the server room. Monthly media must be stored outside the immediate building at a location defined by the Port Authority.

2.6 Business Resumption Plan

The Vendors will work with the Technology Services Department (TSD) to develop a disaster recovery and contingency plan. The System Administrator will participate in the planning, design, implementation, testing, updating and documentation of the plan. Appendix 1 shows a recommended outline for such a plan. The Business Resumption Plan will be reviewed quarterly and tested at least annually.

2.7 Telecommunications Standards for Enterprise Network Resources

To see the standards and guidelines for the following telecommunications components, please see the Appendix.

Appendix 2 -- Standards for Setting up Closets & Communication Rooms

Appendix 3 -- Standard Cabling Schemes

Appendix 4 -- Unified Wiring Specifications

Appendix 5 -- Telephone Closet / IDF Termination Blocks

Appendix 6 -- Workstation Jacks

Appendix 7 -- Standard Switches

Appendix 8 -- Workstation and Lateral Cable Identification Management

Appendix 9 – Fiber Optics Specifications for Network Services - PAWANET

2.7.1 Closet and Telecommunications Room Access

The following standards must be followed regarding access to closets and communication rooms.

- All telecommunications rooms must be physically secured. Remote locations which are not secured by a guard or within line of sight of personnel must be secured by a card access system and/or video cameras.
- The Network Connections (NC) group is responsible for installing routers, switches (along with Cisco Staff when applied) and station drops. They also patch connections and troubleshoot LAN cabling.

System Administrators requiring routine maintenance of data communications equipment should call the Customer Support Desk when new devices or reconfigurations are required.

2.7.2 Telecommunications Installation Contractor's Responsibilities

1. Adherence to all of the above specifications.
2. Assurance of labor harmony by providing installation technicians whom currently maintains appropriate union membership.

3. The contractor must supply all cable, blocks, brackets, connectors, jacks, housings, face plates, special tools, etc., as necessary to perform an installation which is satisfactory to the Port Authority.
4. The contractor must label every workstation (jack faceplate) and the corresponding cross connect point (punch down block or patch panel) in accordance with the cable identification management plan, as previously described.
5. Install all Category 5e cabling in the proper manner, with the appropriate number of twists, so as to maintain Category 5e integrity and capabilities, as outlined in the TIA/EIA 568-B.2 standard.
6. The contractor must ensure that cable connections are in accordance with standard telecommunications practices and that all cabling maintains normal connectivity and continuity.
7. All materials must be agreed upon by PA Network Services prior to the start of installation.
8. All computer or network communication rooms and closets are to be isolated, locked, and secured. No other equipment, storage area, or smoking area are to be located in this room. This room must provide appropriate cooling and ventilation. Access to this room will be reserved to TSD staff and an agreed upon member of the site where the PAWANET equipment is located. This procedure is to ensure the security and the integrity of the Port Authority's computer network and its users.

2.7.3 Electrical Requirements

The following power and receptacles should be installed to support different equipment requirements such as:

- Standard 110/120 volt power receptacles
- Standard and/or NEMA L6-30P 208/220 volt power receptacles
- Dedicated circuit breaker per AC feed, with alternate power source.
- Server rack electrical requirements are specified in the appropriate design document.

Currently, services obtained through the PA's contract are required to have the APC (American Power Conversion) UPS included in the delivered service if central UPS is not installed at the equipment location.

2.7.4 Telephone Company Interface

The following items are needed for the telephone company interface, if needed for a specific vendor solution::

a) Install a dedicated wallboard for Telco demarcs (if none available for implementation)

b) Standard Telco Demarcs:

- P66 Block
- Network Termination Unit (Rj48 interface) Smartjacks
- Network Termination Unit (DB15-pin female interface)
- Network Termination Unit (V.35/V.36 female interface)
- Digital Signal X-connect (DSX)
- Basic T1 CSU/DSU
- Basic DS3 handoff coax/HSSI unit
- High-speed dialup modems for network trouble-shooting when needed

2.8 Documentation

It is the responsibility of the System Administrator to establish and maintain a library of all documentation designated as standard by the Port Authority. These include archived system files and system backups. Vendors will be provided our "Guide to Systems Administration" during the implementation phase of a project. The "Guide to Systems Administration" covers the provisioning and setup of computing & networking resources to successfully implement a project within the Port Authority.

3.0 Virus Scanning & Management

3.1 Overview

This section describes the standards and guidelines for the prevention, detection and removal of computer viruses, (malware). Its purpose is to minimize the risk and negative impact of computer virus infections in the work environment by establishing clearly defined roles, responsibilities and procedures for the effective management of computer viruses.

3.2 Standards

Standard virus protection software must be installed on all network servers and personal computers, and updated on a regular basis. To that end, the Technology Services Department (TSD) has designated McAfee VirusScan Enterprise + AntiSpyware Enterprise 8.5.0i (at the time of this writing) as the standard for virus management on both Windows desktops and servers.

3.3 Acquisition and Installation

The Technology Services Department (TSD) maintains current versions of standard virus protection software and virus detection files, (DATs), including configuration-specific instructions for downloading and installing the software on network servers and desktops.

4.0 Electronic Mail

4.1 E-Mail Overview

The Port Authority's Electronic Mail System (E-Mail) is designed to facilitate business communication among employees, job shoppers, contractors, consultants, and outside business associates. This E-Mail system is comprised of Microsoft Outlook desktop software accessing e-mail stored on Microsoft Exchange servers. This solution also includes group calendaring and workgroup collaboration.

4.2 E-Mail System Architecture

The Port Authority's E-Mail system is hosted by AT&T Corp. who acquired USinternetworking, a managed application service provider, and consists of Microsoft Exchange servers connected to the Port Authority's enterprise network. Authorized Port Authority staff access their corporate e-mail through Microsoft Outlook desktop software on the network. The system has multiple Exchange servers containing mailboxes and Public Folders. Additional servers host Outlook Web Access, Blackberry services, and perform Internet-based e-mail services including anti-spam and anti-virus e-mail checking.

The hosted Exchange site is on a Windows resource domain with a one-way trust to the Port Authority's corporate user account Windows domain located on the Port Authority network. This Port Authority Windows domain is used for Windows authentication services when the Outlook client is opened. In addition, the Port Authority hosts DNS servers to satisfy requests from the Outlook client as needed.

High-speed, secure, and redundant network connections connect the AT&T's data center and network to the Port Authority network.

4.3 E-Mail Environment: Design Considerations and Infrastructure

The E-mail environment is further described below:

- The E-Mail system is comprised of Microsoft Outlook 2007 desktop software accessing e-mail (via MAPI mail protocol) stored on several Microsoft Exchange 2007 servers
- The servers are currently configured for the following messaging protocols:
  - MAPI (Microsoft's Messaging Mail protocol)
  - Internally for X.400 mail protocol (which Exchange servers use)
- IMAP4 and POP3 mail protocols, NNTP news protocol, and LDAP directory protocol are disabled.
- RIM's Blackberry Enterprise Server software for Exchange provides wireless e-mail and calendar access to Blackberry wireless handheld device users.
- The two supported forms of SMTP addresses are:

- Primary form: Flastname@panynj.gov
  FLastname where F is the first initial of the user's first name and Lastname is the last name, and FLastname conforms to the corporate standards for a unique Novell user's username (also known as Novell ID). Flastname is also used as the Alias for a user in the Global Address List. Note that an earlier format with truncating the above to a maximum of eight characters is still in use for accounts created prior to Sept. 2001 (example: Flastnam@panynj.gov).
- Secondary form: Firstname.Lastname@panynj.gov

- Exceptions are governed by Novell directory structure and user account requirements.

4.4 Integrating Applications Server with Port Authority Email System

4.4.1 Requesting SMTP Services

The vendor will request SMTP services from and coordinate its work with the Technology Services Department

If the server is Windows-based and has an antivirus program installed, its settings will need to be changed if port 25 is blocked.

4.4.2 Email Restrictions

The following restrictions are in place to protect the SMTP system and the "credibility" of Agency mail servers on the Net:

- Forged email headers are **STRONGLY discouraged**, but applications for circumvention will be entertained, and valid business justifications must be included. The "From" and "Reply-to" fields should be valid users on the system sending email.
- Settings: The maximum number of recipients per email is currently 30. This includes "To", "cc", and "bcc"; maximum size with attachments is 5MB. Emails that do not conform to these restrictions will be rejected by the SMTP servers.
- Mail will be relayed only if your server has an entry in the SMTP access database.

Note: SMTP logs are checked periodically for policy violations. Repeated violations and failure to correct them will result in SMTP services being disabled for the offending system.

6.0 Workstation and Workstation Operating System

6.1 Overview

The Port Authority makes extensive use of workstations networked into an Enterprise Wide Area Network to accomplish its business objectives. In order to ensure compatibility with the agency's Enterprise network and to make optimal use of its resources, this section defines the standards governing workstations and their configuration and use.

6.2 Workstation Operating System Standard

The Port Authority's standard operating systems for workstations is Microsoft's Windows XP Professional (32-bit), Service Pack 2.
In limited circumstances, where business objectives warrant, alternative operating systems may be deployed with the approval of the department director and concurrence with the Chief Technology Officer.

6.3 Workstation Configuration

6.3.1 Workstation Naming Conventions

All departmental workstations must contain a unique computer name which is the machine's serial number.

Example: Workstation name: 23AAH86

System Administrators are responsible for naming workstations and maintaining an up-to-date inventory of equipment and names used.

6.3.2 Workstation User Accounts

Windows workstations must have user accounts that correspond to the user's network user identification.

6.3.3 Remote Workstation Management

The Port Authority also distributes software applications and upgrades via Novell's ZENworks. Each workstation should have Novell's Workstation Management module installed as part of the NetWare workstation client. This will enable remote distribution and updates of software, hardware inventory and workstation troubleshooting.

6.3.4 Drive Mappings

Drive mappings for workstations should be accomplished only through a Novell login script and should conform to the standard outlined.

6.3.5 Standard Workstation Hardware Configurations

There are standard configurations established for workstations and laptops. The current configurations are managed via a 'lifecycle' process within the Technology Services Department (TSD).

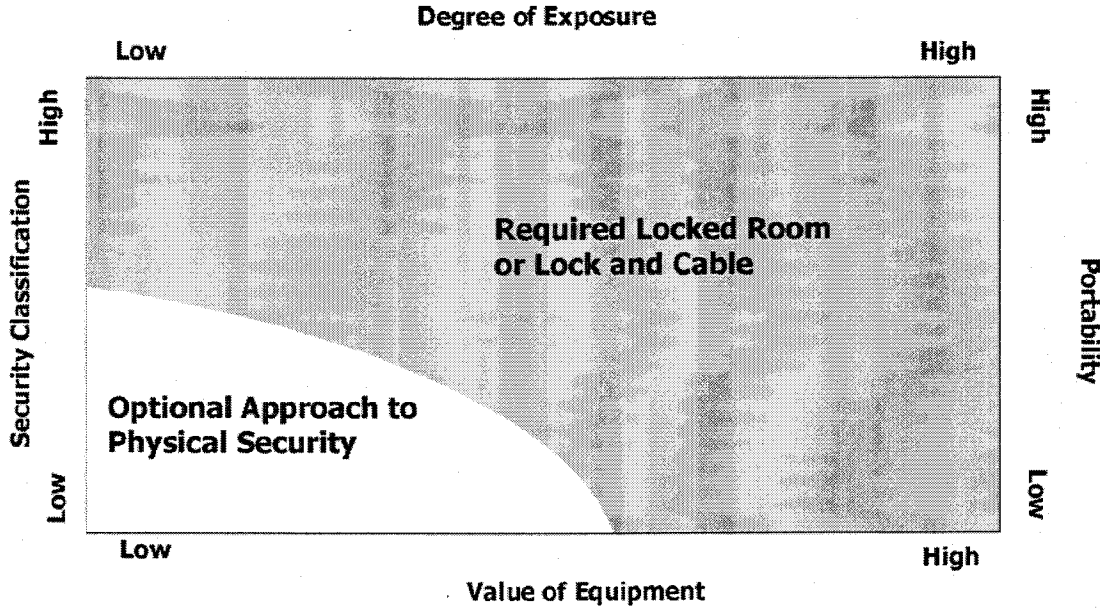
The standard for Workstations include the following Lenovo models (Computer models are subject to change):

- Lenovo ThinkCentre M57 or M58 for a desktop personal computer
- Lenovo Thinkstation D10 for CAD workstations
- Lenovo ThinkPad T400, ThinkPad X200 for laptop computers

6.4 Physical Security

The method of control should be based on the value of the equipment, the sensitivity of the data, its portability and the degree of exposure to theft. The department's Business Manager should make the appropriate determination of physical security required based on their best business judgment.

The graph below provides general guidance to Business Managers in determining the level of physical security required.



In all cases, laptops must be secured with a Lock/Cable product (e.g., Kensington).

6.5 Logical Security

The Technology Services Department (TSD) is responsible for providing for the security of computer resources and devices:

- Workstations are protected with Novell and Microsoft directory security mechanisms..
- Screen saver passwords are implemented with a maximum of a fifteen (15) minute time-out.
- All critical data are backed up nightly onto either external media or a network drive.

6.6 Printers

The Port Authority's Standard for printers is Hewlett Packard, and the following models are currently available. Contact the Procurement Department for acquisition.

7.0 Distributed Systems Environment

7.1 Overview

A number of department and enterprise servers provide critical application and system services. This section provides information on the standards and guidelines for supported systems within the Port Authority. Solutions requiring different operating system environments must have approval from the Chief Technology Officer.

7.2 Microsoft Windows Servers

The standard for general purpose application servers and File and Print Computing is IBM servers. Microsoft Windows 2003 & 2008 Server (Standard and Enterprise) are supported Operating Systems for application servers.

7.2.1 Virtual Environment

The standard for Virtualization Computing is both IBM and NEC FT host servers. The Port Authority will provide a VMware ESX-based Guest Virtual Machine (VM) to operate all Contractor-provided applications software on one of the above host computing platforms depending on the critical nature of the application.

All applications software shall be capable of operating in a virtual environment under VMware ESX server and shall operate in a VMware ESX-based Guest Virtual Machine (VM) on a 'shared' host computing platform for Contractor application, unless performance requirements mandate a dedicated server as described in Section 7.2 above.

7.2.2 Windows Data Encryption

For those applications that require additional data security measures, TSD offers additional tools that provide encryption services to protect "data at rest" (e.g. file

system storage and database). Prior to implementation, the Business System Manager should consult with the Technology Services Department to implement the Encrypting File System feature on Windows XP, 2003 and 2008 Servers (See http://technet.microsoft.com/en-us/library/cc700811.aspx).

7.3 Unix

Sun's Solaris is a supported UNIX operating system for infrastructure (e.g., SMTP services) and corporate servers (e.g., SAP, Peoplesoft).

7.3.1 Unix Security

Unix servers must be physically and logically secured from unauthorized access. Operating system logical security is defined by the Technology Services Department (TSD.

7.3.2 Backup

Critical system backup must be performed regularly (daily and/or weekly) utilizing our centralized backup strategy and associated tools as defined by the Technology Services Department. (see prior section on backup software standards)

7.4 Databases

Oracle 10.2.0.4 or higher and MS/SQL 2005 Server or higher are the supported database platforms for Port Authority systems. Auditing trail shall be enabled for all database accounts with administrator privileges.

7.5 Application Security

Depending on the application, security may be administered at the application, database, module, screen, data field, and/or transaction level in addition to network authentication. Prior to implementation, the Business System Manager should review the capabilities of the application and consult with Technology Services Department (TSD) staff to ensure implementation of the appropriate security levels. When in production, the administrator responsible for day-to-day administration of the application (Application Administrator) is responsible for maintaining the selected security profiles. At a minimum, all applications must require authentication to Microsoft Active Directory by way of a network login.

7.6 Server Physical Security

All servers and communication equipment must be located in the Port Authority's centralized data centers. On occasion, and with Chief Technology Officer approval, local (e.g., in facility) computing resources may be required. For those occasions, servers must be located in an environmentally controlled and locked rooms or secured with a cable and lock with the keyboard secured to prevent tampering and unauthorized usage. Technology Services Department (TSD) staff must be consulted during the implementation phase of a project.

7.7 Load Balancing - Failover Architecture

Depending on the requirements of the application, load balancing and failover architectures are supported. Appendix 13 contains a typical diagram of the load balancing/failover architecture.

8.0 Vendor Provided Dedicated Systems

Overview

Vendor provided dedicated systems refers to the Information Technology software, hardware and infrastructure furnished and installed through a contract with an external provider. Generally, this refers to systems that are designed to support a large Capital Project, multi-year engagements, requiring specialized technical and management staff, as well as, Systems Integration support. These projects normally have significant construction components and require the coordination, design and support from many diverse Engineering and Technology disciplines

A representative from the Technology Services Department (TSD) provides a single point of contact for technology oversight, accountability, adhering to Standards and systems integration, which is required under the Roles and Responsibilities of the Chief Technology Officer (CTO) and is expected by our client departments.

To ensure a successful project, and honor our responsibility to our customers and the Port Authority, one of the steps undertaken by TSD, is to provide guidance with, and focus attention on, adherence to and compliance with our Technology Standards and Guidelines (as described in this document). Deployment, integration and testing will be monitored by TSD to ensure that equipment or infrastructure is not duplicated, that the integration and migration plan will not adversely impact existing systems, and to integrate new systems under existing maintenance contracts where applicable.

In cases where a specific vendor or system is so specialized that it normally does not adhere to the hardware, software, infrastructure and operations guidelines of this document, the vendor will be directed to work with TSD in exploring all options, and if an exception is deemed required, the vendor will work with TSD to prepare the necessary Business Case to receive written concurrence from the Chief Technology Officer for this deviation from the Port Authority Technology standards.

Appendices

Appendix 1 -- Business Resumption Plan Document Format

I. PURPOSE

Goals and objectives of plan

Benefits obtained if plan properly implemented

II. SCOPE OF PLAN

Planning assumptions

Facilities and resources included in plan

III. NOMENCLATURE

Recovery terms

Definitions and acronyms

IV. DISASTER SEVERITY DEFINITION

Define level of potential disaster based on impact to critical functions. Explain what degree of operational disruption would constitute each level of disaster:

catastrophic

serious

major

limited

V. OPERATIONS RECOVERY PROCEDURES

(Procedures for recovering services)

1. Indicate time frames in which essential operational/business functions must be resumed.
2. Specify sequence of operations recovery events and individuals responsible for activity. Note any specific activities required for particular levels of disaster severity. For example:

Notifications

Preliminary evaluation

Activate operations recovery personnel

Coordinate with emergency personnel

Evaluate recovery options and issue directive which details:

Assigned tasks

Project schedule/time frame

Coordination required

Identify relocation activities, if required

External/internal status updates

3. Identify items required for backup of critical functions. For example:

alternate work site

hardware/software

Personal computers

Necessary software packages

Documentation

Peripherals (printers, modems, etc.)

Databases

Emergency equipment

Communications

Transportation

Supplies

Security

Operations and procedures manuals

VI. OFFICE/FACILITY BUSINESS SITE RESTORATION PROCEDURES
(Procedures for restoring physical facilities)

identify restoration responsibilities

assess damage

develop restoration plan/time frames

VII. BRP UPDATE PROCEDURES

responsibility for updating and communicating BRP changes

frequency of review/update

Appendix 2 -- Communication Rooms/Closets Standards

SPACE

All data communication rooms must be designed with required and estimated space to meet immediate requirements, as well as, future growth..

ENVIRONMENTAL

The following conditions must be met:

a) Doorways/Entrances must be designed to support at least the minimum space requirements of 90"Hx72" Wx60" D.
b) The room's cooling capabilities must be sufficient to support the heat dissipation requirements for the equipment. This requirement will be measured in minimum and maximum BTUs powered by AC-powered systems. Equipment specs will be supplied by TSD upon request.
c) Backup UPS systems are necessary to avoid equipment damage in case of site power failure. Vendors must consult with the Technology Services Department (TSD) for the approved UPS systems.
d) Telco demarcs must be located in a central location with sufficient space to house Telco termination equipment.
e) The room should be designed with the appropriate fire safety regulations such as a FM200.
f) Cables trays must also be installed in the communications room ceiling where appropriate, to support the routing of data communications and Telco cables.
g) Basic 19" W/72" H cabinets or racks must be installed to house communications equipment such as: routers, switches, hubs, DSUs/CSUs and monitors.
h) To create more wall space the use of wall mount racks can be installed. Appropriate sized plywood must be installed prior to mounting racks.
i) Category 5e cable must be terminated in wall/rack mounted patch panel.
j) Fiber patch panel must be installed in fiber IDF panel with SC female interface.
k) The fiber must be neatly tie wrapped and enclosed in flexible inner-duct.
l) Telephone access must be installed in the appropriate location to provide for basic trouble-shooting and vendor support.
m) All communications equipment and cabinets must have ample room for easy access and proper ventilation.

Appendix 3 -- Cabling

a) Teflon-coated cables will be installed per fire code regulations.
b) Overhead cable trays and drop post must be installed for cable routing.
c) Cabling scheme must be used to label and identify all cables. All cables must be neatly tie-wrapped.

Appendix 4 -- Port Authority Unified Wiring Plan

Original: 01/90
8th Revision: 03/02

To satisfy existing and future voice and data communications requirements, while minimizing the need for wiring changes and additions, the Port Authority has adopted the following lateral wiring specifications for all workstations being constructed. This plan is applicable to all PA locations, except when specifically noted.

LATERAL CABLE:

Voice and data telecommunications requirements for each workstation will be provided by a combination of three individual cables, installed between the workstation and the serving telephone closet / intermediate distribution frame (IDF), in a "home run" configuration. All cabling installed will be of plenum type, fire retardant (FEP) rated.
Cable specifications:

(3) Cables capable of supporting Category 5e capabilities as outlined in the TIA/EIA-568-B.2 standard. Specifically:

Gauge: 24 AWG

Pair Size: 4

Insulation: Plenum, fire code rating (FEP)

Cable allocations will be as following:

Cable #1: Voice**

Cable #2: Data

Cable #3: Data

- *100.0MHz is the speed the PA wants to deliver to the desktop.
- **Cable #1 is to be split in the workstation to support 2 telephones.

Technical specs for the Cat 5e cable is as follows.

TECHNICAL DATA--ELECTRICAL				
	Horizontal		Patch	
Frequency MHz	Attenuation dB/100 m max.	Next dB min.	Attenuation dB/100 m max.	Next dB min.

1	2	62.3	2.4	62.3
4	4.1	53.2	4.9	53.2
10	6.5	47.3	7.8	47.3
16	8.2	44.2	9.8	44.2
20	9.3	42.7	11.1	42.7
31.25	11.7	39.8	14.1	39.8
62.5	17	34.3	20.4	34.3
100	22	32.3	26.4	32.3

TECHNICAL DATA--PHYSICAL			
	CMR	CMP	CM (Patch)*
Conductor diameter-in. (mm)	.020 (0.52)	020 (0.52)	024 (0.61)
Cable diameter-in. (mm)	.195 (5.0)	165 (4.2)	215 (5.5)
Nominal cable weight-lb./kft. (kg/km)	21 (31)	21 (31)	23 (34.2)
Max. installation tension-lb. (N)	25 (110)	25 (110)	25 (110)
Min. bend radius-in. (mm)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)
* Patch cables utilize stranded tinned copper conductors			

PARAMETRIC MEASUREMENTS		
	Horizontal	Patch
Mutual Capacitance	4.6 nF/100 m nom.	5.6 nF/100 m nom.
DC resistance	9.38 Ohms/100 m Max.	9.09 Ohms/100 m max.
Skew	45 ns/100 m max.	45 ns/100 m max.
Velocity of	72% nom. Non Plenum	72% nom.
Propagation	72% nom. Plenum	
Input Impedance	100 + 15% 0.7772-100 MHz	100 + 15% 0.772-100MHz
	ISO/IEC 11801	

COLOR CODE			**TEMPERATURE RATING**	
Pair 1	White/Blue	Blue	Installation	0 degrees C to +50 degrees C
Pair 2	White/Orange	Orange	Operation	-10 degrees C to +60 degrees C
Pair 3	White/Green	Green		
Pair 4	White/Brown	Brown		

Appendix 5 -- Telephone Closet / IDF Termination Blocks

Lateral Data cabling serving each workstation will be terminated on a CAT5e patch panel (RJ45 face, 110 punch rear) in the telephone closet. For phone service, termination is to be on 110 blocks in telephone closet, allowing access to the telephone riser. For data, a patch cord is installed between patch panel and IT device. The patch panel can be mounted on the wall with a wall mount kit or in a rack if one is needed and should be appropriately numbered with the workstation number. The patch panel must be capable of supporting Category 5e the TIA/EIA-568-B.2 standard. The patch panel shall have a swing away faceplate or rack mountable.

NOTE: The Category 5e patch panel should be equivalent to the AMP SL series 110Connect Category 5e patch panel. The number of ports may vary.

Each workstation will be assigned a unique station identification number.

Appendix 6 -- Workstation Jacks

Workstations will be equipped with various components of the AMP Communications Outlet system (AMP equivalent can be used with TSD approval). Each workstation will be installed with (1) double-gang jack housing box and matching face plate, capable of securely mounting three Category 5e cables and four modular data connectors, maintaining the integrity of category 5e capabilities as outlined in the the TIA/EIA-568-B.2 standard. All workstation jacks will be wired in accordance with the the TIA/EIA-568-B.2 standard. All modular jacks are to be appropriately labeled.

Appendix 7 -- Standard Switches Inside the Department

Any switches in the following Cisco series are acceptable (Vendors will consult with the Technology Services Department (TSD) to determine the appropriate switch configuration at the time of proposal submission):

Cisco 5500

Cisco 3500 series – low capacity

Cisco 4000 series – medium capacity

Cisco 6000 series – high capacity

Cisco 4507 series – high capacity – New

Appendix 8 -- Desktop and Lateral Cable Identification Management

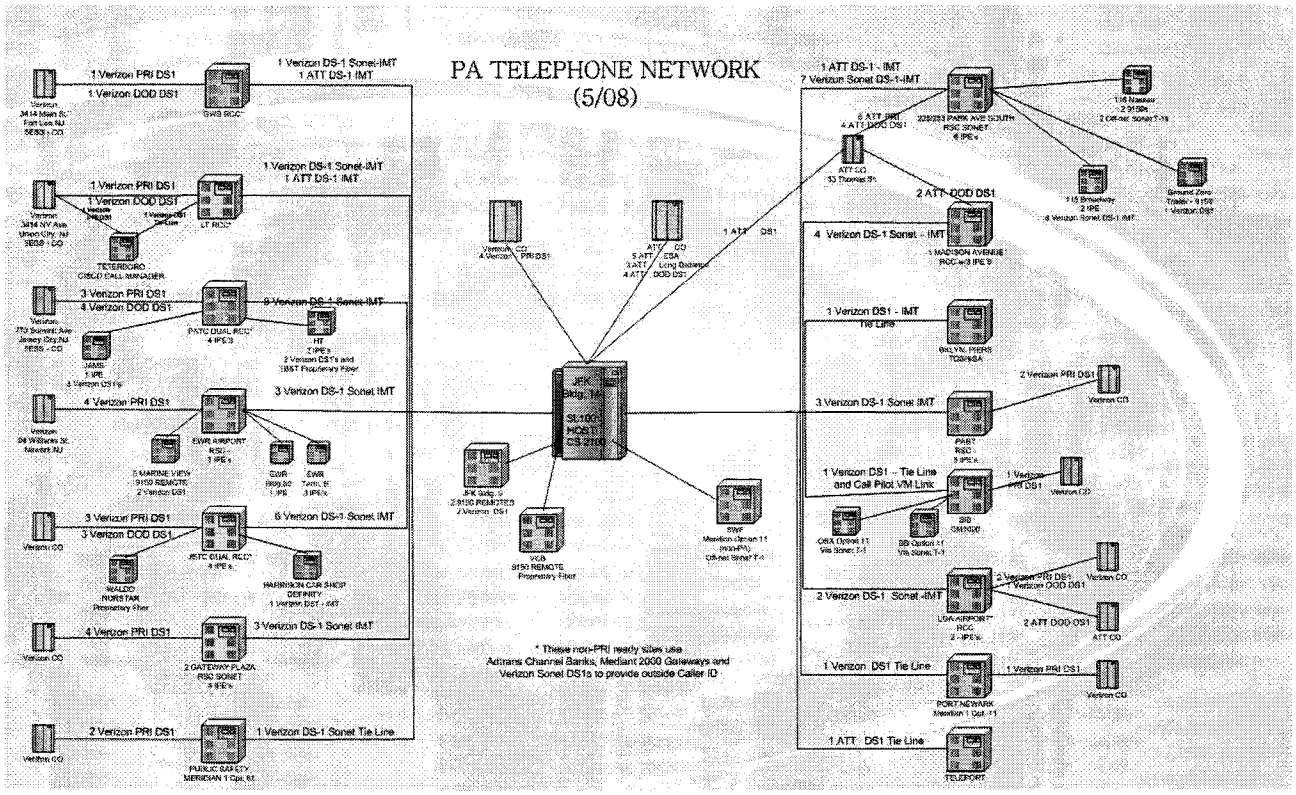
WORKSTATION AND LATERAL CABLE IDENTIFICATION/MANAGEMENT (Facility)

All lateral cabling installed to workstations at the Port Authority Facilities must be designated in accordance with the Port Authority's workstation and lateral cable identification code: This code consists of two elements, as follows:

1 - Room number or department name (acronyms are acceptable).

2 - Workstations (3 numeric digits)
The cable identification code for Workstation 10 in room 3801 at LGA CTB is 3801-010.
The cable identification code for Workstation 15 in PA Automotive shop is Auto-015

Appendix 9 – PA Telephone Network 5/08



Appendix 10 – Fiber Optic Specification for Network Services - PAWANET

General Scope of Work

1. Conduct a walk thru based on the specific Scope of Work for the job in question.
2. Note that all diagrams and or sketches that may be provided are approximates and not to scale.
3. All fiber optic cable is to be installed in rigid conduit or, where applicable, in plenum rated flexible inner duct.
4. Contractor shall furnish and install fiber optic cable as designated in the specific Scope of Work.
5. Fiber optic cable type will be loose tube, gel filled, with aramid yarn water block:
   a. Multimode Fiber – **50/125*** micron diameter. Manufacturer of cable TBD
6. Fiber optic cable attenuation from the factory, before installation, shall not exceed:
   a. For multimode – 3.5 db per km @ 850nm / 1.0 db per km @ 1300nm
7. All fiber optic cable is to be labeled on each end and at any junction or patch panel with, 28 gauge, 2" wide embossed with ¼" high letters. The labels are to be fastened to the fiber optic cable using sealed wrap around labels or pliable Velcro ties.
8. Fiber optic cable shall be installed in accordance with the manufacturer's specifications. Any portion of the cable damaged during installation will be repaired or replace by the contractor without any additional cost to the Port Authority of New York New Jersey.

Fiber Optic Terminations

1. Fiber optic terminations will use **SC**** connectors unless otherwise specified in the Scope of Work.
2. Fiber optic terminations shall not yield more than 1db per mated (at the bulkhead) connector.

Fiber Optic Testing

1. Fiber optic testing shall be performed by the contractor and certified fiber optic technicians.

Fiber optic technicians will be prepared to complete test procedures with the following equipment:

- Source and power meter testing to provide optical loss measurements.

- Reference test cables and mating adapters that match the cables to be tested.
- Cleaning materials – lint free cleaning wipes and pure alcohol.
- OTDR test set with the proper launch cables and adapter types.

2. Fiber optic technicians will perform OTDR test on all terminated fibers unless otherwise noted in the Scope of Work.
3. Fiber optic test results shall be recorded, and reports provided to the PA in hardcopy and via a readable txt file (PDF or RTF is acceptable).

*50/125 micron fiber has been chosen over 62.5/125 micron fiber by Network Services:

1. Greater speeds achieved. 62.5/125 fiber will deliver 1 gigabit per second (Gbps). 50/125 fiber will deliver up 10 Gbps. This allows for equipment upgradeability.
2. Greater distances. 62.5/125 fiber will go up to 275 meters from source. 50/125 will achieve up to 550 meters from source. We can cover greater distances in an installation without having to go to the more expensive single mode fiber installation.

****SC** connectors have been chosen over **ST** connectors by Network Services due to the fact that we utilize Cisco equipment, which come furnished with **SC** connectors on their fiber interface blades. It is more cost effective to use the standard **SC-SC** patch cable with Cisco equipment than to add the additional cost of having hybrid **SC-ST** cables made. **SC** connectors are also easier to work with and use less space in an installation.

Appendix 11 -- Public Telephone Ordering Guidelines

Technology Services (TSD) staff is responsible for the management of the permit for public telephone service are available to answer any questions and provide direction for any matter relating to public telephones. The names and contact numbers are listed below

General Guidelines

All public telephone requests – that is both coin and non coin in any Port Authority space or any area of the tenant space – both "public" and "club" locations will be coordinated by the Port Authority to cover both New York and New Jersey.

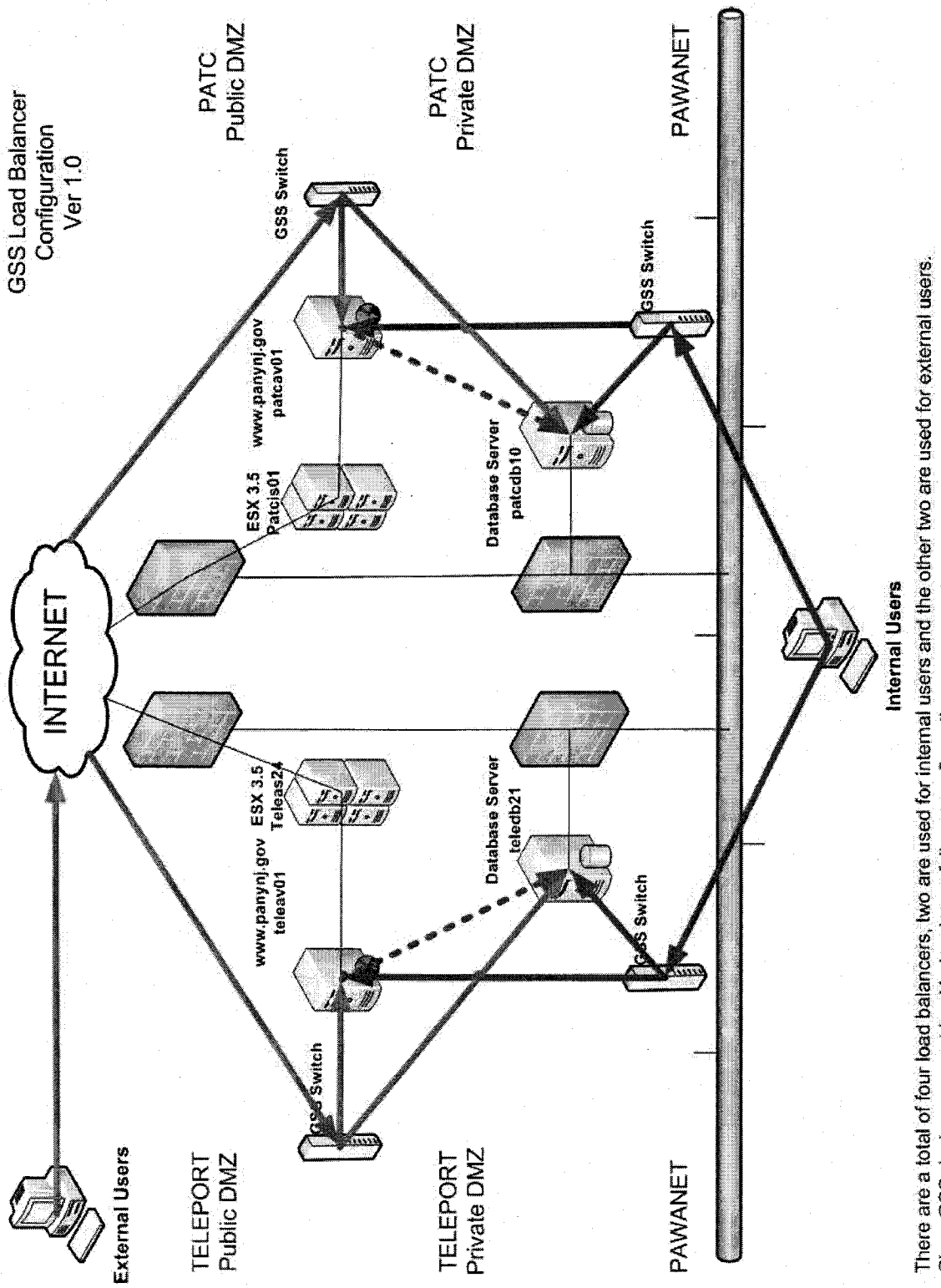
Process

When the Facility, Property Manager, tenant or their representative (e.g. designer, architect, general contractor) has a public telephone requirement, they will contact the Technology Services Department (TSD) whom will review the request and provide coordination with the appropriate service provider.

Appendix 12 – Standard Printers

HP LaserJet P1006 Stand Alone Laser Printer	17 ppm Black resolution 1200 dpi/Memory 8Mb	CB411A#ABA
HP LaserJet 5200dtn - Network Printer	35 ppm Black resolution - 1200 x 1200 dpi Memory - 128Mb Duplex	Q7546A
HP Color LaserJet 4700dn Network Printer	31ppm black, 31ppm color Black/Color Resolution 600X600 dpi Memory 288 Mb Auto Duplex	Q7493A
HP LaserJet P4014n - Org Unit Network Printer	45 ppm Black resolution - 1200 x 1200 dpi/Memory - 128 Mb	CB507A#ABA
HP Automatic two-sided printing module	Optional for LaserJet 4014n printer	CB519A
HP LaserJet 5550dtn Color Printer	27 ppm black/color Processor speed 533 Mhz Media 11x17	Q3716A
HP OfficeJet Pro K5400 Stand Alone Color Printer	36 ppm black, 35 ppm color Color resolution 4800 x 1200 dpi Memory 32 Mb	C8184A
HP Automatic two-sided printing accessory	Optional for HP OfficeJet Pro K5400	C9278A

Appendix 13 – Load Balancing/Failover Diagram



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