

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 5e
Date of Meeting March 26, 2013

DATE: March 18, 2013
TO: Tay Yoshitani, Chief Executive Officer
FROM: John Christianson, General Manager Aviation Maintenance
SUBJECT: Access Control Network Refresh (CIP #C800558)

Amount of This Request: \$1,500,000 **Source of Funds:** Airport Development Fund
Est. State and Local Taxes: \$97,500 **Est. Jobs Created:** 0
Est. Total Project Cost: \$1,500,000

ACTION REQUESTED:

Request Commission authorization for the Chief Executive Officer to (1) proceed with the Access Control Network Refresh project at the Seattle-Tacoma International Airport; (2) authorize the procurement of required hardware, software, and vendor services through state contracts; and (3) authorize the use of Port staff for implementation, for a total project cost not to exceed \$1,500,000.

SYNOPSIS:

The Aviation Maintenance Organization (AVM) Access Control Network consists of over 50 network switches in data centers and communication rooms throughout the Airport as well as the supporting infrastructure that includes servers, racks, and an uninterruptable power supply (UPS). Ninety percent (90%) of the switches on this network are currently past the vendor's published end of life and the UPS system in the central equipment room is over 20 years old.

The Access Control network supports several critical security systems such as the Access Control System, the Closed Circuit Television (CCTV) system that provides live and recorded video of locations throughout the terminal and airfield, the security door alarm system, and the Checkpoint Duress Breach system.

The purpose of this project is to replace aging network components to ensure availability of critical security systems. AVM and Information and Communication Technology (ICT) resources will collaborate to complete the project. Total project costs are estimated to be \$1,500,000. Funding for this project was included in the 2013 – 2017 capital budget and plan of finance. Recurring hardware license and maintenance costs will be budgeted within the AVM department budget.

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BACKGROUND:

A network switch is a connection point allowing networked devices such as computers, servers, and printers or network segments to communicate efficiently. Port switches can be managed and monitored remotely to ensure the best configuration to meet security and performance requirements. Most of the switches and equipment in the Access Control Network were installed in 2004 as part of the Access Control System Upgrade Project in CIP #100713 and are long past their published end-of-life. The systems that rely on this aging network are critical to meet security, safety, and Federal Aviation Administration regulatory requirements.

PROJECT JUSTIFICATION:

With no support on 90% of the network switches, replacement of this equipment is the only recovery for a catastrophic device failure. Access layer switches in the communications rooms can be replaced as they fail with a serious but limited impact to the access control, alarm, breach, and CCTV systems. However, failures at the core level switches would likely result in a total failure of all communications for these systems.

The impact of a failure in the systems that rely on the Access Control Network range from lack of visibility for monitoring door alarms or in the ramp tower, increasing security and safety concerns, to delay of flights in the case of an extended breach event. Additional Port staff would be required to manage critical security areas in the event of a failure and secure doors would not get current access control information.

Project Objectives:

- Ensure Access Control Network Switch system will support critical security and operational systems by replacing end of life equipment with devices and firmware that meet Port Technology Standards.
- Replace physical server environment with a virtualized environment that will allow for server hardware redundancy, reduction of physical footprint, reduction of energy consumption, and providing the ability to add additional capacity on demand.
- Provide data center infrastructure to maintain an environment required for high availability by replacing the primary Central Equipment Room (CER) UPS.
- Deploy new components with no unplanned outages to critical security and operational systems.

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

- Replacement of approximately 58 Cisco access network switches in communication rooms and in the data center with devices that meet Port Technology Standards
- Replacement of two Cisco primary core switches

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- Replacement of the data center UPS system
- Upgrade of hardware racking to support the new devices
- Cabling upgrade to support new infrastructure
- Implementation of the a Network Management System
- Build out of a virtualized server environment

Schedule:

Commission Approval	March 2013
System Design Complete	June 2013
Procurement Complete	August 2013
Installation Complete	April 2014

FINANCIAL IMPLICATIONS:

<i>Budget/Authorization Summary:</i>	Capital	Expense	Total Project
Original Budget	\$1,500,000	\$0	\$1,500,000
Previous Authorizations	\$0	\$0	\$0
Current request for authorization	\$1,500,000	\$0	\$1,500,000
Total Authorizations, including this request	\$1,500,000	\$0	\$1,500,000
Remaining budget to be authorized	\$0	\$0	\$0
Total Estimated Project Cost	\$1,500,000	\$0	\$1,500,000

<i>Project Cost Breakdown:</i>	This Request	Total Project
Hardware/Software	\$1,027,000	\$1,027,000
Software Licenses	\$7,500	\$7,500
Vendor Services	\$70,000	\$70,000
Port of Seattle Labor or Contractors	\$109,000	\$109,000
State & Local Taxes (estimated)	\$97,500	\$97,500
Contingency ~ 15%	\$189,000	\$189,000
Total	\$1,500,000	\$1,500,000

Budget Status and Source of Funds:

This project was included in the 2013-2017 capital budget and plan of finance as a \$1,500,000 business plan prospective project within CIP #C800558, Access Control System Refresh. The source of funds is 100% Airport Development Fund. Estimated training costs of \$10,000 will be funded from the Aviation Maintenance Operating Budget.

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Financial Analysis and Summary:

CIP Category	Renewal/Enhancement
Project Type	Technology
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$1,500,000
Business Unit (BU)	Aviation Maintenance
Effect on business performance	N/A
IRR/NPV	N/A
CPE Impact	\$.01in 2014; no change from business plan forecast as this project was included in the plan

Lifecycle Cost and Savings:

Due to the complexity of the environment and the criticality of the systems that rely on this network, an additional \$45,000 in annual recurring cost is estimated to cover a maintenance agreement for the new switches. This will be budgeted within the Aviation Maintenance Operating Budget. Port recurring labor costs to maintain the system are not expected to change.

STRATEGIC OBJECTIVES:

This project supports the following Port strategies:

- *Meet the region's air transportation needs at Sea-Tac Airport for the next 25 years:* Door alarms, breach systems, cameras, and access control are critical components of Airport security. This project ensures the availability of the infrastructure required to run these systems.

ENVIRONMENTAL SUSTAINABILITY:

A virtualized server environment significantly reduces the number of devices required to support the network, which decreases energy consumption and thermal output.

BUSINESS PLAN OBJECTIVES:

This proposed solution will support Aviation's strategic goal of operating a world-class international airport by ensuring safe and secure operations. Replacement of end-of-life equipment with devices and firmware that meet Port Technology Standards will eliminate the risk of critical security and operational system failure.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

1. *Replace Equipment As It Fails:* There are significant security and operational impacts for any outage of this equipment. This is not the recommended solution.

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2. *Replace 2 Cisco Core Components Only*: While this alternative will prevent an Airport-wide outage, access level failures in computer rooms throughout the Airport would still result in local outages to these same critical applications. This is not the recommended solution.
3. *Replace Core and Access level components*: Replacement of all network switches and data center infrastructure will eliminate risk of critical system outages as a result of an equipment failure. **This is the recommended solution.**

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

None.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

None.