



ADOA - ASET

Arizona Strategic Enterprise Technology

Project Investment Justification

Version 01.01

A Statewide Standard Document for Information Technology Projects

Project Title:

Replacement UPS

Agency Name:	Arizona Attorney General's Office
Date:	September 8, 2014
Agency Contact Name:	John Abretske
Agency Contact Phone:	
Agency Contact Email:	

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I. Management Summary*

The Attorney General's Office (AGO) intends to replace an older uninterruptable power supply (UPS) in the main AGO data center.

II. Project Investment Justification (PIJ) Type*

☐ Yes ☒ No Is this document being provided for a Pre-PIJ / Assessment phase?

If Yes,

Identify any cost to be incurred during the Assessment phase.	\$
Based on research done to date, provide a high-level estimate or range of development costs anticipated for the full PIJ.	\$

Explain:

6T

☐ Yes ☒ No Will a Request for Proposal (RFP) be issued as part of the Pre-PIJ or PIJ?

III. Business Case

A. Business Problem*

A primary UPS in the main AGO data center has failed twice within the last 12 months during a monsoon caused building power outage out. This UPS is currently over 10 years old and has been regularly maintained with battery replacements. During the most recent of the outage, several AGO servers that were in the process of shutting down when power was lost and several of the AGO production servers went down hard. The UPS indicated that there was 45 minutes of up-time when it dropped power. Because the servers were not shutdown gracefully, a number of data files and some server hardware was damaged. Luckily, the data loss and hardware failures were minimal. The AGO is looking to prevent a more catastrophic failure from occurring in the future.

B. Proposed Business Solution*

Replace the existing UPS with a comparable model that is capable of supporting half of the Capital Center Building data center server array and networking equipment for at least 2 hours of sustained run-time. In addition, the UPS system should have the ability to: 1) monitor room environment for temperature and humidity and 2) communicate with the server infrastructure to coordinate an automated and prioritized server shutdown sequence.

C. Quantified Benefits*

- ☐ Service enhancement
- ☐ Increased revenue
- ☐ Cost reduction
- ☒ Problem avoidance
- ☒ Risk avoidance

Explain:

Problem Avoidance

A new UPS will protect from short-term power failures which can cause data corruption and damage computer equipment hardware

Risk Avoidance

Most modern mid-scale UPS equipment has the ability to monitor and log temperature and power. These systems are network connected and notify network management systems when predefined thresholds have been breached.

IV. Technology Approach

A. *Proposed Technology Solution**

The AGO is purposing to use an APC brand 16 KVA UPS with three extended runs distributed within two new full height NetShelter enclosures. Based upon the current power draw, the AGO expects to get at least two hours of run-time for the supported server cabinets and data racks. Separate power distribution circuits will be run for each supported server cabinet and data rack. The system will include the APC Powerchute software and a network management card which will have the ability to the monitor data center temperature, humidity, power, and battery health. The system will report to an existing AGO network management system and alarm when key predetermined thresholds have been breached. The Powerchute software and network management card will also communicate with the AGO server infrastructure and coordinate an un-manned and prioritized server shutdown sequence in the event of an extended power outage (e.g. longer than an hour.)

B. *Technology Environment*

The AGO data center located in the basement of the Capital Center Building was inherited from the Department of Water Resources (DoW). When DoW occupied Capital Center Building the facility housed a mainframe system. The facility is approximately 2250 square feet, and it is currently being used to host the majority of AGO server and networking assets.

The Capital Center data center currently hosts five cabinets of server, storage, and power equipment, and three data racks of networking and power equipment. The AGO operates several Dell 410 single EIU and Dell 710 dual EIU servers. There are also several dual and triple EIU XioTech and NexSAN storage appliances, as well as a variety of Cisco networking gear.

A little over half of the server and storage infrastructure is powered by a newer 16 KVA UPS. The latest storage equipment purchase under the SMS project (AG1400#) has a brand new and dedicated 6 KVA UPS. The remaining server and networking gear is powered by a 12 year old 16 KVA UPS. All of the UPS's are fed from a 3-phase dedicated power distribution unit (PDU). The PDU is dedicated to supporting computer, storage, and networking gear.

All of the computer room air conditioners (CRACs) are fed by separate power feeds. The primary CRAC unit is a 20-ton Liebert that has a humidifier pan. The backup AC unit is a 10-ton Trane that provides cooling only. Cool air is delivered to the front of the server cabinets and data racks via a raised floor and vented tile system.

The Capital Center data center has a halon system with 24 smoke sensors of which approximately half are mounted to the ceiling and with the remaining below the raised flooring. The halon system has an emergency power off (EPO) feature that will shut down all computing and CRAC systems. The halon system also triggers an alarm on the main building fire system that will notify Capital Police.

C. Selection Process

APC is the only manufacturer of UPS's that can provide more than 6 KVA of power and is available for purchase on a State contract. The AGO is not aware of any competing product available on existing State contracts.

V. Project Approach

A. Project Schedule*

Project Start Date: 9/29/2014 **Project End Date:** 2/27/2015

B. Project Milestones

Major Milestones	Start Date	Finish Date
Order and receive UPS equipment and software	9/29/14	10/31/14
Order and install electrical drops	10/31/14	1/16/15
Install and configure UPS equipment	1/19/15	2/6/15
Install and configure UPS notification software	1/26/15	2/27/15

VI. Roles and Responsibilities

A. Project Roles and Responsibilities

Project Manager – Project lead that will conduct monthly status meetings and report to ASET. Authorize orders and approve payments.

Administrative Assistant – Order and receive product. Collect invoices.

System Engineer – Technical lead that will install and configure UPS equipment and software.

Facilities Manager – Coordinate electrical work with DOA facilities.

Electrician – Installation of electrical circuits.

B. Project Manager Certification

- ☒ Project Management Professional (PMP) Certified
☐ State of Arizona Certified
☐ Project Management Certification not required

C. Full-Time Employee (FTE) Project Hours

Total Full-Time Employee Hours	80
Total Full-Time Employee Cost	\$3,900.00

VII. Risk Matrix, Areas of Impact, Itemized List, PIJ Financials

VIII. Project Approvals

A. Agency CIO Review*

Key Management Information	Yes	No
1. Is this project for a mission-critical application system?	X	
2. Is this project referenced in your agency's Strategic IT Plan?		X
3. Is this project in compliance with all agency and State standards and policies for network, security, platform, software/application, and/or data/information as defined in http://aset.azdoa.gov/security/policies-standards-and-procedures , and applicable to this project? If NO , explain in detail in the "XI. Additional Information" section below.	X	
4. Will this project transmit, store, or process sensitive, confidential or Personally Identifiable Information (PII) data? If YES , in the "XI. Additional Information" section below, describe what security controls are being put in place to protect the data.		X
5. Is this project in compliance with the Arizona Revised Statutes (A.R.S.) and GRRC rules?	X	
6. Is this project in compliance with the statewide policy regarding the accessibility to equipment and information technology for citizens with disabilities?		X

B. Project Values*

The following table should be populated with summary information from other sections of the PIJ.

Description	Section	Number or Cost
Assessment Cost (if applicable for Pre-PIJ)	II. PIJ Type - Pre-PIJ Assessment Cost	\$0
Total Development Cost	VII. PIJ Financials tab	\$46,933.17
Total Project Cost	VII. PIJ Financials tab	\$53,054.12
FTE Hours	VI. Roles and Responsibilities	80

C. Agency Approvals*

Contact	Printed Name	Signature	Email and Phone
Project Manager:	John Abretske		
Agency Information Security Officer:	John Abretske		
Agency CIO:	John Abretske		
Project Sponsor:	Margaret Dugan		
Agency Director:		Not Required	

IX. Optional Attachments

A. Vendor Quotes

See attached APC quote.

B. Funding Sources

Federal Funds	Employment Discrimination, Fair Housing Assistance Program, State Medicaid Fraud Control Units
Other Appropriated Funds	Legal Services Cost Allocation, Collection Enforcement Revolving, Anti Trust Revolving, Consumer Protection Revolving, Interagency Services Agreements, Risk Management Revolving, Victim Rights, State Aid to Indigent Defense
Other Non-Appropriated Funds	AntiRacketeering Revolving, Intergovernmental Grants, Indirect Costs Recovery

X. Glossary

XI. Additional Information

Links:

[ADOA-ASET Website](#)

[ADOA-ASET Project Investment Justification Information Templates and Contacts](#)

Email Addresses:

[Strategic Oversight](#)

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