



ADOA - ASET

Arizona Strategic Enterprise Technology

Project Investment Justification

Version 01.01

A Statewide Standard Document for Information Technology Projects

Project Title: IBM Z Series Hardware Refresh

Agency Name:	Department of Public Safety
Date:	10/8/14
Agency Contact Name:	Gregg Hayes
Agency Contact Phone:	
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I. Management Summary*

The Arizona Department of Public Safety (AZDPS) will refresh its 20 year old mainframe, which IBM will no longer support in 2015, with a new model.

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:

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

III. Business Case

A. Business Problem*

AZDPS's currently runs a 12 year old IBM z800-0X2 mainframe. In March of 2014 IBM announced they will no longer support this system in 2015. DPS has investigated 3rd party vendor support, but no vendor will give adequate Service Level Agreement (SLA) terms for this model; service terms are given with phrases such as "if parts are available" and "in a reasonable amount of time" rather than spelling out the number of hours to respond or obtain parts as is customary and required for systems such as this. Since IBM no longer supports the product, 3rd party vendors will not guarantee response times or availability. AZDPS runs 178 applications on this system; many of which are key to DPS operations and operations of the 500+ law enforcement agencies (LEAs) in Arizona. The most critical of these applications include a suite that makes up the Arizona Criminal Justice Information Systems (ACJIS). The risk of this system failing due to hardware failure of this unsupported system is too high to consider running without the manufacturer's support.

Failure of the ACJIS system would endanger the lives of all law enforcement officers in the State of Arizona as well as its citizens. For example; when an officer stops a motorist on a rural highway for a traffic violation, he/she will first run the vehicle's license plates to see if the vehicle is stolen or wanted in connection with a dangerous crime. Advanced knowledge of potential criminal activity allows the officer to call for back up rather than approach the vehicle alone. If an officer is going to contact a suspect in his home or workplace, the officer may run the person's information through ACJIS prior to the contact to find out if the suspect has a history of violence or has any warrants. It is not just law enforcement who would be put at risk; citizens would be at risk too. Orders of Protection are also entered into the ACJIS system. This allows officers to quickly identify the suspect and protected party, and is especially useful in domestic

violence situations where the protected party may be afraid to speak up in front of their abuser.

Knowing the criminal history of a person and preparing before contacting the subject has saved countless officer's lives. Failure of the ACJIS system could have catastrophic consequences. These examples and many more show why having the ACJIS system highly available can save lives. DPS cannot allow the hardware that ACJIS runs on to be without support or without guarantees of support.

In addition, the cost to maintain a system as old as this is far higher than the cost to maintain a new system. The total cost of ownership of a new Z series system is less in three years than keeping the existing system and paying for reduced service. DPS' objective is to mitigate risk and reduce cost. A hardware refresh meets both of these needs and must be executed immediately before IBM's support has expired.

B. Proposed Business Solution*

AZDPS will purchase or lease an IBM zBc12 mainframe to replace the z800.

Quantified Benefits*

<input type="checkbox"/>	Service enhancement
<input type="checkbox"/>	Increased revenue
<input checked="" type="checkbox"/>	Cost reduction
<input checked="" type="checkbox"/>	Problem avoidance
<input checked="" type="checkbox"/>	Risk avoidance

Explain:

A Total cost of ownership analysis shows that AZDPS will save approximately \$87,000 over a 3 year period and \$465,000 over a five year period compared to keeping the z800 and paying a third party vendor maintenance. This assumes that a third party vendor can guarantee replacement parts. This is a guarantee that we have not been able to secure for the upcoming 5 years. The risk of failure is too high for this critical hardware.

IV. Technology Approach

A. Proposed Technology Solution*

Update the operating system to ZOS 1.13 to prepare for the new hardware. Then replace the z800 rated at 109 MIPS and 20 MSUs with a z8C12 rated at 120 MIPS and 16 MSUs. DPS will also replace the storage system which is nearing end of life.

B. Technology Environment

AZDPS currently runs an IBM z800 Mainframe with external storage. Both the mainframe and storage will be replaced with new models.

C. **Selection Process**

AZDPS has compared lease vs. purchase vs. keeping the existing system. From an economic and risk standpoint, keeping the existing system would be a poor decision as explained in the Business Case section.

AZDPS has also contemplated the idea of “renting space” on the DOA mainframe, but dismissed the idea for three reasons: risk, cost and security. DOA’s datacenter and mainframe, while very secure and meeting other security standards, is not built to the specifications required by the FBI’s CJIS (Criminal Justice Information System) standards. We would need to encrypt the data storage and the communications lines using FIPS 197 and 140-2 encryption respectively if we move the CJIS system off law enforcement premises. This would require expensive application changes and take far more time than is available. As our plan is to move applications off of the mainframe onto open systems at AZDPS, the logistics of change would increase the risk for these projects. Also, because mainframe applications and their yearly maintenance services are sold based on the size (in Millions of Instructions per Second or “MIPS”) these costs would grow exponentially if they were moved onto the DOA mainframe. DPS’ refreshed mainframe will have 120 MIPS – DOA’s has 4000. Our lead applications packages called “Natural” and “Adabas” are produce by SoftwareAG. DPS’ yearly maintenance for these products is approximately \$52,000. DOA does not use these applications. At 4000 MIPS, the yearly maintenance alone would far exceed the cost of this replacement. Also, we would need to do a onetime purchase to upgrade from 120 MIPS to 4000 MIPS. Again, this cost alone is more than the cost of replacement.

It should also be noted that most of our current connections and circuits are out of scope for AZNET, the current IP addressing scheme used for DPS connections are incompatible with the rest of the state of Arizona IP addressing. Many of the Arizona Automated Fingerprint Identification Systems (AZAFIS) connections are shared with ACJIS connections and are out of scope for AZNET as well. DOA’s mainframe is located on an AZNET managed subnet. Isolating DPS and the law enforcement subnets would prove impractical.

The costs and risks to move the DPS mainframe to DOA far exceed the cost of the simple hardware refresh that this PIJ is proposing. Therefore, this option has been rejected.

V. **Project Approach**

A. **Project Schedule***

Project Start Date: 11/1/14. **Project End Date:** 1/30/15

B. **Project Milestones**

Major Milestones	Start Date	Finish Date
Update z800 to ZOS 1.13	11/1/14	12/15/14
Install zBC12 and storage	12/1/14	12/31/14
Switch over from z800 to zBC12	1/1/15	1/30/15

VI. Roles and Responsibilities

A. *Project Roles and Responsibilities*

Roger Baune – Technical Services Manager – Project Manager.

John Anderson – Lead Engineer

Sirius – Will provide engineers and PM for refresh project

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	120
Total Full-Time Employee Cost	\$

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	\$
Total Development Cost	VII. PIJ Financials tab	\$519,164
Total Project Cost	VII. PIJ Financials tab	\$519,164
FTE Hours	VI. Roles and Responsibilities	120

C. Agency Approvals*

Contact	Printed Name	Signature	Email and Phone
Project Manager:	Roger Baune		
Agency Information Security Officer:	Roger Baune		
Agency CIO:	Gregg Hayes		
Project Sponsor:	Gregg Hayes		

IX. Optional Attachments

A. *Vendor Quotes*

X. Glossary

XI. Additional Information

The DPS Mainframe stores Criminal Justice Information (CJI) and PII information. As the core of the ACJIS system, the mainframe is secure in accordance with the FBI CJIS

Links:

[ADOA-ASET Website](#)

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Email Addresses:

[Strategic Oversight](#)

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