



ADOA - ASET

Arizona Strategic Enterprise Technology

**Project Investment Justification
(PIJ)**

“LITE”

*A Statewide Standard Document
for Information Technology Projects*

For Low Risk Projects Only

Project Title: Equipment Services Shop Diagnostic Laptops

Agency Name: Arizona Department of Transportation

Date: September 25, 2013

Prepared By: Ian Kaufman, Equipment Services MIS Manager

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I. GENERAL INFORMATION

I.A General Information

Agency CIO:	Joe Throckmorton	Contact Phone:	
Agency Contact Name:	Jesse MacDonough	Contact Phone:	
Agency Contact Email:		Prepared Date:	9/25/2013

II. PROJECT OVERVIEW

II.A Management Summary

I. Problem Description

Equipment Services utilizes Panasonic Toughbook laptop computers in its twenty-two equipment repair shops throughout the State. These laptops run thirteen distinct diagnostic software programs provided by equipment vendors such as Ford, General Motors, Chrysler and Mack Trucks. The laptops have increased in importance to Equipment Services' operations as the software allows ADOT equipment repair technicians to diagnose problems on equipment without having to send the equipment to commercial service vendors. This saves ADOT money, and allows the shops to return equipment to its customers in less time.

When Equipment Services purchased the shop laptops in 2006, there was only one diagnostic application installed, Mack Trucks' Premium Tech Tool. All of the other diagnostic work completed in the shops utilized proprietary hardware provided by the equipment manufacturers.

In the years since that time, all of the diagnostic software has been ported to the Windows platform and has been installed, incrementally, on each shop's laptop. Where one laptop seemed sufficient years ago, shops are now experiencing delays in diagnosing equipment issues because the laptop is in use when another technician needs it. The effect of this is felt especially during the winter months, when snow clearing operations are underway. ADOT management considers plowing of the roads to be mission-critical to the safety of the traveling public, as well as to the trucking industry using the I-40 corridor in the northern part of the state. In the latest fiscal year completed, ADOT incurred almost \$250,000 in costs for repairs completed on the Department's plow trucks by commercial service vendors. A substantial portion of those repairs could have been completed by ADOT technicians if sufficient diagnostic resources were available.

Additionally, it should be noted that the current laptops do not meet the minimum CPU and RAM requirements published by the manufacturers of many of the software packages. This results in slow execution of the software, further delaying turnover of the laptop to another technician and extending customer service turnaround times.

II. Solution

The solution proposed is to purchase new HP Hybrid Laptop/Tablets to supplement the laptops already in place. Introduction of a second laptop per site (except Flagstaff, which has the largest snow plowing operation) will eliminate much of the wait time being incurred at the shops. Also, these newer laptops will utilize the latest processor technology, improving performance considerably.

III. Quantified Justification

Equipment Services spent almost \$250,000 in the last full fiscal year for repairs completed at commercial vendors on ADOT's fleet of Mack plow trucks. Using a conservative estimate that 30% of these expenses could have been avoided if the diagnostic resources were in place in Equipment Services' shops, ADOT would have realized savings equal to twice the purchase amount of the new laptops.

II.B Existing Situation and Problem, "As Is"

Presently, all diagnostic software packages are installed on a single laptop in each of Equipment Services' shops. This causes contention, as more than one technician often needs to utilize the laptop at the same time. This means that work has to be sent to commercial vendors at times to keep equipment downtime at a minimum, particularly during winter months. Also, as mentioned earlier, performance of the diagnostic software is often poor due to the age of the current laptops.

II.c Proposed Changes and Objectives, "To Be"

A second laptop utilizing the latest processor technology will be added at each shop except Flagstaff, which is the busiest service hub for Mack plow trucks in the Northern region. In this location, three new laptops will be added to meet the increased, seasonal demand of snow events and public safety. The diagnostic software packages will be split among the laptops in such a manner as to reduce wait times to the minimum possible.

III. PROJECT APPROACH

III.A Proposed Technology

A review of pricing for new Toughbooks to augment the current ones proved cost prohibitive. ADOT's Equipment Services Management Information Systems (MIS) unit worked with representatives from Hewlett-Packard on pricing for a mobile PC that could be used both as a standard laptop and as a tablet when the display is reversed and folded down. The HP EliteBook Revolve 810 laptops utilize Intel's current Core™ i5 processors and come equipped with 4 GB of RAM. The units also comply with Military Standard 810, revision G for durability. A three-year accidental damage, full replacement warranty will be purchased for the laptops, as insurance against damage in the shop environment.

III.B Other Alternatives Considered

Other alternatives that we have researched:

Use virtualization technology.

The Equipment Services team worked with ADOT's Information Technology Group to see if the diagnostic applications could be virtualized on a single laptop. This approach would add an unnecessary layer of complexity between the laptop and the operating system and not negate the need to purchase new, more robust laptops to support the diagnostic software's minimum system requirements.

Do nothing.

This alternative would not address the current wait time and performance issues, resulting in a continuation of the problems discussed above.

III.c Major Deliverables and Outcomes

Deliverables:

- 20 HP EliteBook Revolve 810 laptops
- 20 Ultralim Docking Stations.

Expected outcomes:

- Reduced technician/diagnostic equipment contention and associated technician wait time in the shops.
- Increased technician productivity.
- Reduced equipment downtime.
- Reduced customer wait time.
- Improved diagnostic software performance.

IV. POLICIES, STANDARDS, & PROCEDURES

IV.A Enterprise Architecture

Yes No - Does this project meet all 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> as applicable for this project?

If NO please describe **NEW** or **EXCEPTIONS** to Standards (Network, Security, Platform, Software/Application, and/or Data/Information):

V. ROLES AND RESPONSIBILITIES

V.A Project Roles & Responsibilities

Please Identify Project Roles & Responsibilities:

The following roles and responsibilities have been identified:

- Project Manager – Ian Kaufman, Equipment Services MIS Manager
- Project Sponsor – Devin Darlek, Equipment Services Administrator

Please indicate Project Manager Certification:

The project manager assigned to the project is:

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

VII. PROJECT TIMELINE

VII.A Project Schedule

Provide estimated schedule for the development of this project. These dates are estimates only; more detailed dates will be required at project start up once the project schedule is established.

Project Start Date: **11/1/2013** Project End Date: **12/31/2013**

VIII. PROJECT FINANCIALS

Project Funding Details

Select One

- Pre PIJ Assessment Funding Details Only
- Full PIJ Project Funding Details

VIII.B Detailed Project Financials

VIII.c Funding Source

(Double click on table below – add funding in whole dollars and then click outside the table to return to Word doc)

Funding Source Category	Name of Funding Source	Currently Available (\$)		New Request (\$)		Total (\$)
		Development Budget	Operational Budget	Development Budget	Operational Budget	
General Fund						\$ -
Federal ARRA Fund						\$ -
Federal Fund						\$ -
Other Appropriated Funds						\$ -
Other Non Appropriated Funds	Equipment Services Fund (EQR)	\$ 37,541				\$ 37,541
TOTAL PROJECT COSTS Should = development and operational totals above		\$ 37,541	\$ -	\$ -	\$ -	\$ 37,541

VIII.D Special Terms and Conditions (if required)

Special Terms and Conditions (if required)

VIII.E Full Time Employee Project (FTE) Hours

Provide estimated FTE Development hours that will be utilized for the duration of the project. Include IT as well as Business Unit FTE hours, if available. Enter into Project Values table on Approvals page.

Total Full Time Employee Hours: 52

IX. PROJECT CLASSIFICATION AND RISK ASSESSMENT

IX.A Rate each question to determine risk level at Low (0), Medium (1), High (2), Very High (3).

Enter Risk Score into Project Values table on Approvals page.

RISK EVALUATION RANGES

LOW RISK PROJECT	0 - 8
MEDIUM RISK PROJECT	9 - 25
HIGH RISK PROJECT	26 - 42
VERY HIGH RISK PROJECT	43 +

Add Project Risk Details (if required)

PIJ Project Classification & Risk Evaluation					
Risk Factor	Low (0)	Medium (1)	High (2)	Very High (3)	Score
Project Management Complexity					
Project Team Size (# of people)	1-5	6-10	11-15	> 15	0
Project Manager (PM) Experience	Deep experience in this type of project	Some experience in this type of project and able to leverage subject matter experts	Some experience in this type of project and has limited support from subject matter experts	New to this type of project	0
Team Member Availability	Dedicated staff for project activities only as assigned	Staff is in place, few interrupts for non project tasks are expected and have been accounted for	Available, some turnover expected, some interrupts for non project issues likely	Dedicated team not available; staff will be assigned based on capacity	1
# of Agencies involved in Development activity	1	2	3	> 3	0
Vendor (if used)	No Vendor required	Vendor has been used previously with success	Vendor has been used previously with some management support required	New Vendor and/or multiple vendors	1
Project Schedule	Schedule is flexible	Schedule can handle minor variations, but deadlines are somewhat firm	Scope or budget can handle minor variations, but deadlines are firm	Scope, Budget and Deadlines are fixed and cannot be changed	0
Project Scope	Scope is defined and approved	Scope is defined and pending approval	Scope being defined	High level definition only at this point	0
Budget Constraints	Funds allocated	Funds pending approval	Allocation of funds in doubt or subject to change without notice	No funding allocated	0
Project Methodology	Defined methodology	Defined methodology, no templates	High level methodology framework only	No formal methodology	0
IT Solution Complexity					
Product Maturity (if purchased)	Product implemented & working in > 1 state agency or business of similar size	Product implemented & working in 1 agency or business of similar size	Product implemented & working only in an agency or business of smaller size	Product not implemented in any agency or business	1
Solution Dependencies	No dependencies or interrelated projects	Some minor dependencies or interrelated projects but considered low risk	Some major dependencies or interrelated projects but considered medium risk	Major high-risk dependencies or interrelated projects	1
System Interface Profile	No other system interfaces	1-2 required interfaces	3-4 required interfaces	> 4 required interfaces	0
IT Architectural Impact	Follows State IT approved design; principles, practice & standards	New to the State but follows established industry standards	Evolving "industry standard"	No standards, leading edge technology	0
Deployment Impact					
Process Impact	No business process changes	Agency wide process changes	Multi-State Agency process changes	State-wide process changes	0
Scope of End User Impact	Department or Division level only	Multiple Division or Agency wide impacts	Multi-Agency impacts	State-wide impacts	0
Training Impact	No training is required	Minimal training is required	Considerable training is required	Extensive training is required	0
Total Risk Score					4

X. PROJECT APPROVALS

X.A CIO Review

Key Management Information	Yes	No
1. Is this project for a mission critical application system?		✓
2. Is this project referenced in your agency's Strategic IT plan?		✓
3. Is this project consistent with agency and State policies, standards and procedures?	✓	
4. Is this project in compliance with the Arizona Revised Statutes and GRRC rules?	✓	
5. Is this project in compliance with the statewide policy regarding the Accessibility to Equipment and Information Technology for Citizens with Disabilities?	✓	
6. Is this project mandated by law, court case or rule? If yes, cite the federal requirement, ARS Reference or Court Case.		✓

Details: Provide details related to technology as part of the requirement.

X.B Project Values

The following table contains summary information taken from the other sections of the PIJ document.

Description	Section	Significance
Economic Benefits	VI. Benefits to the State	N/A
Value Rating	VI. Value to the Public	N/A
Total Development Cost	VIII. Project Financials	\$37,541
Total Project Cost	VIII. Project Financials	\$37,541
FTE Hours	VIII. Project Financials	52
Project Risk Factors	IX. Risk Summary	4

X.c Project Approvals

Project Title: Equipment Services Shop Diagnostic Laptops

Responsibility	Printed Name	Approval Signature	Date
Project Manager:	<i>Ian Kaufman</i>		
Agency CIO:	<i>Joe Throckmorton</i>		
Project Sponsor:	<i>Devin Darlek</i>		
Agency Director:	<i>John Halikowski</i>		

APPENDICES

D. NOI (Web Projects Only)

GLOSSARY

Document Information

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Download: <http://aset.azdoa.gov/>
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<http://aset.azdoa.gov/content/project-investment-justification>
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