



# ADOA - ASET

Arizona Strategic Enterprise Technology

## Project Investment Justification

Version 1.01

A Statewide Standard Document for Information Technology Projects

### Project Title:

**1510 W. Adams Fiber Splicing**

Agency Name:	Arizona Department of Administration
Date:	02/28/2014
Agency Contact Name:	Gary Hensley
Agency Contact Phone:	
Agency Contact Email:	

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## I. Management Summary\*

In Fiscal Year 2013, the Arizona Department of Administration's Strategic Enterprise Technology Office (ADOA-ASET) Enterprise Infrastructure and Communications group (EIC), also known as AZNET II, completed a number of initiatives designated to enhance the supporting infrastructure of the State Data Center (SDC) environment. A detailed space utilization assessment within the SDC was conducted in order to identify additional floor space to be utilized for SDC equipment. The assessment identified equipment racks that, if removed, would free up approximately 18 square feet of valuable floor space.

ADOA-ASET proposes to remove three equipment racks currently located within the SDC Wide Area Network (WAN) room at 1510 W. Adams. The fiber terminating at these racks will be relocated to an AZNet II equipment rack called a "Meet Me" location. As a result of this rack removal, 240 fiber connections/strands will be spliced and re-routed to the "Meet Me" location.

## 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\*

Available floor space in the SDC WAN room is extremely scarce. The Arizona Department of Administration (ADOA) is in need of space to house new infrastructure equipment. ADOA needs to remove AZNet II equipment racks identified on the attached diagram as the "Old Rack." As a result, fiber optic cabling will need to be spliced and subsequently connected to State core networking equipment at the AZNET II "Meet Me" location.

### B. Proposed Business Solution\*

Three equipment racks will be removed and several fiber connections relocated to the "Meet Me" location within the second floor SDC WAN room. Approximately 18 square feet of floor space will be freed up as a result of this rack removal and fiber re-route. The removed racks will be utilized for future projects.

Fiber will be spliced and re-routed as follows:

- 168 strands inside the splice case under the floor of the SDC WAN room
- 72 strands located in fiber vault #41, located south of the SDC (see attached diagram)

Splicing of 240 fiber strands will connect three separate cables to the “Meet Me” rack location which houses the State’s core networking equipment. Upon completion and testing of the spliced and re-routed fiber, three equipment racks in the second floor SDC WAN room will be removed (see attached diagram).

**C. Quantified Benefits\***

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

Explain:

This project will remove obstacles identified during the space utilization assessment project and free-up approximately 18 square feet of valuable floor space required to support future growth at the SDC. It will also centralize an SDC WAN room fiber splice location and connections to the AZNet II “Meet Me” location.

**IV. Technology Approach**

**A. Proposed Technology Solution\***

Fiber will be spliced on four fiber cables located in and around the SDC. This work will be conducted in four maintenance windows during scheduled maintenance hours, as follows:

- **The 432 strand fiber** – This fiber travels from fiber vault Man Hole (MH) #1 into the SDC WAN room splice case on the second floor (see diagram). This fiber runs from the splice case under the floor, to three rack locations within the SDC WAN room. The 432 strand fiber will be spliced into the 288 strand fiber inside the splice case. This will connect it to the AZNet II “Meet Me” rack location. This will eliminate multiple fiber terminations at the equipment rack which ADOA needs to free up SDC floor space.

The existing splice case will be relocated to a new central location within the WAN room to allow for connection of the Direct Fiber cables to the AZNet II “Meet Me” location (see diagram). A total of 108 strands of single-mode fiber will be spliced within this WAN room splice case.

- **The 144 strand fiber** – This fiber travels from subterranean fiber vault MH #41, located at the northwest corner of W. Adams Street and 15<sup>th</sup> Avenue, to the “Old Rack” location in the WAN room on the second floor of the SDC. A total of 72 strands of the 144 strand fiber that run to the WAN room will be disconnected and spliced into the 288 strand fiber that runs

directly to the AZNet II “Meet Me” location in the SDC WAN room. The splicing will occur inside MH #41.

- **Direct Cable** – This fiber travels from subterranean fiber vault MH #1/splice case S-1, located approximately 25 feet south of the south door of the SDC, to the “Old Rack” location. Two Direct Fiber cables run from MH #1 to the “Old Rack” location (see diagram). These cables will be rerouted to the SDC WAN room splice case under the raised floor. A total of 48 strands of single mode fiber will be spliced in this splice case.
- **AGL Fiber** – This fiber travels from subterranean fiber vault MH #1 to the “Old Rack” location (see diagram). The AGL fiber will be re-routed from the “Old Rack” location to the SDC WAN room splice case under the raised floor. A total of 12 strands of single mode fiber will be spliced in this splice case.
- **“Meet Me” location** – This is the AZNet II equipment rack location for the State core networking equipment to which all connections from State agencies and carrier services meet in a centralized connection location. Upon completion of the fiber splicing, new patch cables will be installed from the “Meet Me” location to the ADOA switches on the 3<sup>rd</sup> floor of the SDC.

Additional patch cables will be required to support legacy equipment, which will reside in one rack at the “Old Rack” location, until all the AZNet II refreshes are completed. New patch cables will be installed at the “Meet Me” location to provide connections between “Meet Me” switches and routers. Small Form-Factor Pluggable (SFP) transceivers/receivers and gigabit interface converter (GBIC) modules will be installed to support single-mode to multi-mode fiber transitions on AZNet II core switches and routers at the “Meet Me” location.

All fiber splices will be tested using Optical Time-Domain Reflectometer (OTDR) measurements one-way test to verify connectivity and performance. Once the fiber is spliced to the AZNet II “Meet Me” location, networking equipment in the old racks will be relocated to the AZNET II “Meet Me” racks. Legacy or end-of-life equipment such as switches, routers, or Lightguide Interface Units (LIUs) will be sent to surplus.

## ***B. Technology Environment***

AZNet II has been asked to vacate floor space in the SDC WAN room identified in previous ADOA-ASET initiatives designated to enhance the support infrastructure of the SDC environment. The fiber associated with this project terminates within the SDC WAN room, or travels through MHs #41 and #1.

Fiber from MH #41 supplies fiber connectivity to State agencies on the Capitol Mall located south and east of the SDC. This project will allow these agencies to connect directly to the 288 strand fiber by means of splicing within fiber vault MH #41 to the new AZNet II “Meet Me” rack location.

**C. Selection Process**

ADOA-ASET proposes to utilize state approved contractor, CenturyLink, to manage the fiber splicing. CenturyLink will sub-contract Team Fishel to conduct the work. Team Fishel is familiar with the existing fiber plant and has a history of providing fiber services to the SDC and Capital Mall with favorable results. Patch cabling and related hardware required for the completion of this project will be purchased from other vendors on state contract. Budgetary cost estimates included in this PIJ are firm, fixed bids.

**V. Project Approach**

**A. Project Schedule\***

**Project Start Date:** 3/31/2014      **Project End Date:** 5/16/2014

**B. Project Milestones**

Major Milestones	Start Date	Finish Date
Order Materials	3/31/2014	4/11/2014
Fiber Splicing	4/12/2014	5/3/2014
Fiber Testing	4/12/2014	5/3/2014
As-Built Diagrams / Warranty Documents	4/12/2014	5/3/2014
Walk through with EIC Program Manager/Technical Engineer	4/12/2014	5/3/2014
ASET Rack Removal	5/9/2014	5/16/2014

**VI. Roles and Responsibilities**

**A. Project Roles and Responsibilities**

**Agency Director:** Brian C. McNeil, ADOA Director  
**Agency CIO:** Aaron V. Sandeen, ADOA Deputy Director, State CIO  
**Project Sponsor:** Gary Hensley, Assistant Director, Chief Networking Officer, ADOA-ASET  
**Project Manager (PM):** Allan Gazza, ADOA-ASET  
**Technical Engineer:** Aaron Freyermuth, AZNet II

**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**

<b>Total Full-Time Employee Hours</b>	40
<b>Total Full-Time Employee Cost</b>	\$0

**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 <a href="http://aset.azdoa.gov/security/policies-standards-and-procedures">http://aset.azdoa.gov/security/policies-standards-and-procedures</a> , and applicable to this project? If <b>NO</b> , 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 <b>YES</b> , 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	\$46,051.43
Total Project Cost	VII. PIJ Financials tab	\$46,051.43
FTE Hours	VI. Roles and Responsibilities	8

### C. Agency Approvals\*

Contact	Printed Name	Signature	Email and Phone
Project Manager:	Allan Gazza		
Agency CIO:	Aaron V. Sandeen		
Agency Information Security Officer:	Mike Lettman		
Project Sponsor:	Gary Hensley		
Agency Director:	Brian C. McNeil		

## IX. Optional Attachments

### A. *Vendor Quotes*

## X. Glossary

## XI. Additional Information

Links:

[ADOA-ASET Website](#)

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

Email Addresses:

[Strategic Oversight](#)

[ADOA-ASET\\_Webmaster@azdoa.gov](mailto:ADOA-ASET_Webmaster@azdoa.gov)