

Aerial Imagery Management (AIM)

May 24, 2012



Project Summary

As part of the project management course, our team is required to manage a project, which is identified as the Aerial Imagery Management (AIM) project for OAE. Project documentation must be created and presented in a formal manner to class members and other guests. The AIM analysis is being developed to provide information for OAE to determine the best course of action to preserve the vast collection of aerial images. Since all images are public record, by federal law images must be made available to the public. Currently images are stored on film and must be scanned into a digital format in order to create the products available to customers.

Project Goal

The Office of Aerial Engineering would like to have all images scanned at a high resolution. Testing performed by Subject Matter Experts revealed that the optimal resolution would be 21 microns. This micron size would allow for close to 90% preservation of the original image. Because images will be strictly used to fill customer orders and not mapped from, this resolution is acceptable. Storage space was also a factor used to determine micron size. It is estimated that a 21 micron images would be 30mb. These high resolution images will be stored in a Tiff format. Once all film is scanned and saved in digital format, film rolls will no longer be needed.

Project Outcome

Our team will create a Needs Analysis that will present cost and time comparison between scanning images in house versus out sourcing work. Project documentation and presentation will be completed May 24, 2012.

Project Benefits

The ODOT Office of Aerial Engineering has an extensive collection of historical aerial images currently stored on film that they would like to have digitized. Digitizing film would enable them to dispose of old brittle film and preserve aerial images in electronic format. OAE is currently performing all aerial imagery and storing images digitally and would like for all images to be in the same format. The Office of Aerial Engineering’s eventual goal is to have these digital images available online for customers to view and order electronically. Once all images are scanned, this second phase can begin.



Project Team

For more information about this project, contact team members

- Jana Edmunds — Jana.Edmunds@dot.state.oh.us
- Eddy Dupree - eddy.dupree@jfs.ohio.gov
- David O'Reilly - DTOReilly@dps.state.oh.us
- Mark Gall - Mark.Gall@dot.state.oh.us
- Thomas Waller – Thomas.waller@epa.state.oh.us
- Mentor – Coach: Nelson Gonzalez



2012

Aerial Imagery Management (AIM)



Jana Edmunds, Mark Gall, Eddy Dupree,
David O'Reilly and Thomas Waller
AIM TEAM

5/24/2012

BUSINESS CASE

The Ohio Department of Transportation (ODOT), Office of Aerial Engineering (OAE), currently houses an aerial imagery film archive of approximately 575,000, one of a kind, historical aerial images. These images are stored on approximately 2300 rolls of film, and contain images dated from 1946 to 2009.

In 2009 the Office of Aerial Engineering (OAE) purchased a new digital camera to replace the out dated film camera. This new digital technology allows for instant access to digital aerial images hours after being captured. This digital camera eliminated the old process of having to scan film images into a digital format before images could be used for production purposes. The digital camera has proven to be more cost effective, provide better quality images and eliminate the need for environmentally controlled, clean spaces that are required for film storage and scanning operations.

With the purchase of the new digital camera, OAE has begun phasing out the film operation. The first phase of this project is to digitize their complete film archive at a high resolution of approximately 21 microns. This will allow OAE to dispose of the film yet still retain a high quality digital image which they can use to fill customer orders. Eliminating the scanning portion of the procedure, currently used to fill customer orders, will potentially cut delivery time of requested images in half. OAE has voiced a desire to have the entire collection scanned in a two year time frame.

The Office of Aerial Engineering also saw the need to digitize the film in an effort to preserve the images stored on them. The 1940's film is beginning to show the most noticeable deterioration. When rolls of film are removed from their protective containers and placed on the scanning machines for order fulfillment, technicians are experiencing breakage of the film. Currently, film can be repaired, but over time repairs will not be possible. Occasionally pieces of film have broken off into the machine stopping production and could potentially cause damage to the scanner.

The historic images stored on the OAE film archive are unique, irreplaceable and are a valuable resource for ODOT and the citizens of Ohio. These images have been used to identify old dump locations that can be harmful to water sources and the public. Images have identified environmentally sensitive areas that when avoided allow highway construction projects to proceed in a timely manner. This saves time and money by identifying potential hazardous areas based on past use, and eliminates the need to perform subsurface investigations. Imagery has also proven useful in defending the State of Ohio against lawsuits. The digitizing and preservation of this valuable resource not only helps to protect the environment and the citizens of Ohio, but also saves taxpayers millions in potential construction and environmental mishaps.

DESIRED RESULTS

The Office of Aerial Engineering would like to have all aerial images scanned, digitized, and electronically stored at a high resolution, eliminating the need to keep the 2300 rolls of film that the images are currently located on. Testing performed by Subject Matter Experts revealed that the optimal resolution would be 21 microns. This micron size would allow for close to 90 percent preservation of the original film image. Since images will be strictly used to fill customer orders and not for original mapping purposes, 21 microns has been deemed acceptable by OAE.

Furthermore, at this micron size, the image will use approximately 30mb of storage space which will not exceed the server space available to OAE for this project. The Office of Aerial Engineering has requested that images be in an easily accessible Tiff format. Once all film is scanned, inspected, approved by OAE and saved in digital format, film rolls will no longer be needed and can be disposed of as ODOT sees fit.

ANALYSIS

The ODOT Office of Aerial Engineering has an extensive collection of historical aerial images currently stored on film that they would like to have digitized. Digitizing film would enable them to dispose of old brittle film and preserve aerial images in electronic format. OAE is currently performing all aerial imagery and storing images digitally and would like for all images to be in the same format. The Office of Aerial Engineering's eventual goal is to have these digital images available online for customers to view and order electronically. Once all images are scanned, this second phase can begin.

The Aerial Imagery Management (AIM) team gathered data for three different scenarios. The AIM team goal was to provide adequate information that can be used by OAE to determine the best course of action. The AIM team gathered time and cost for the following;

- 1) ODOT to use current available resources, one Z/I imaging scanner and 1 full time employee, to scan entire collection in house.
- 2) Contract with outside vendor/vendors for completion of entire collection.
- 3) Scan half of the collection in house using ODOT resources and contract the remaining half out to vendor/vendors.

ODOT Scanning

The below estimate is based on ODOT's current operation and resource level; 5 days a week, 8 hours a day, one employee, and one machine. Time estimated to scan one image at 21 micron is approximately 6 minutes.

$575,000 \text{ images} \times 6 \text{ min} = 3,450,000 / 60 \text{ min} = 57,500 / 8 \text{ hrs} = 7,187.5 / 5 \text{ days} = 1,437.5 / 52 \text{ wks} = 27.6 \text{ yrs.}$

Cost for OAE to complete scanning process with current operation at a cost of approximately \$25.00/hr plus annual scanner maintenance cost of \$50,000 would be **\$3,080,000** (57,000 x \$30/hr = 1,710,000) (50,000 x 27.4yrs = 1,370,000).

Outsource Scanning

Familyography

Familyography, located on the Northside of Columbus, has been in business for over three years. Because of the close proximity, Familyography has stated no shipping costs for delivery or return of film will be charged, and communication will always be person to person. They have never performed this kind of work before, however they claim to have the experience and technical knowledge to handle and convert these images.

In order to perform the work, Familyography would have to procure equipment, hire more staff and secure a clean dust-free space for production. Because of the uniqueness of this project, Familyography has proposed a test project in which they will scan a batch of 10,000 images in four weeks. Using a 10,000 image per month scenario it is estimated that it would take Familyography **4.8 years** to complete project.

The preliminary proposed cost presented was \$3.85 per scan based on a 21 micron resolution. Cost to purchase new equipment, staff and other overhead costs are included in the price. Price could increase or decrease once all factors are added in. If entire collection were outsourced to this company it could cost ODOT **\$2,213,750** (575,000 x \$3.85). Final cost and pricing is subject to change once vendor is provided more detailed information from OAE.

Midwest Aerial Photography

Midwest currently owns and operates two Zeiss/Intergraph PhotoScan photogrammetric scanners that are identical to the ones currently owned and operated by OAE. Midwest's scanning facilities is located in Hilliard Ohio which is approximately 10 minutes from the Office of Aerial Engineering. This close proximity will eliminate or significantly lower the cost to ship film to and from facility.

Midwest presented a conservative estimate of approximately 250 rolls per year per scanner for a total of 500 rolls a year. Using this 500 roll per year figure, it is estimated that it will take Midwest **4 years** to complete scanning project. This 4 year completion time frame could increase or decrease depending on the final scan resolution and if flight instruments are included in the scan. Current quote is based on a 21 micron resolution.

The preliminary price to perform the scanning service is \$5.00 per frame for black and white images and \$7.00 per frame for color negatives. For an estimated total cost of **\$3,025,000** (500,000

x \$5.00 = \$2,500,00 / 75,000 x \$7.00 = \$525,000). Final cost and pricing is subject to change after vendor is presented with more details from OAE.

Henderson Aerial

Henderson Aerial located in Ohio, would perform the film digitizing using their two Zeiss PhotoScan photogrammetric scanners, identical to the ones currently owned and operated by OAE. The scanning would be performed using an automated roll feed, with scanners operating continuously. Henderson Aerial estimates scanning 400 rolls per year utilizing both scanners. Based on a 400 roll per year estimate it would take Henderson Aerial **5.75 years** to complete this project.

Preliminary prices listed below include all shipping and media cost and storage of the film while housed at their facility.

Film rolls having a single project \$1.15/per exposure

Film rolls having multiple projects \$1.65/per exposure

The majority of OAEs film consists of multi project film rolls so the preliminary pricing amount used in this projection will be \$1.65 per exposure. Estimated cost to perform the scanning by Henderson would be **\$948,750**. Final cost and prices are subject to change once vendor is provided more detailed information from OAE. Henderson presented the following options as possible ways to save time and money.

1) Stores film at Henderson facility until scanned imagery is delivered and approved, then transports for silver recovery. Proceeds from silver recovery can go to Henderson and result in reduction of the scanning cost.

2) Stores all film at Henderson and scans over the next several years using same pricing.

3) Henderson can lease scanners from ODOT and move to their facility in Columbus to increase scanning capacity and reduce time frame.

Combination ODOT/Outsource Scanning

The below table represents what the estimated time and cost would be if half of the OAE aerial imagery archive collection was scanned at ODOT and half of the OAE collection was contracted to an outside vendor. Prices and time frames used in the table were provided by the vendors listed above.

Vendor	Estimated Time	Estimated Price	Vendor	Estimated Time	Estimated Price	Combined Time	Combined Total
ODOT	13.7 yrs	\$1,540,000	Familyography	2.4yrs	\$1,106,875	16.1yrs	\$2,646,875
ODOT	13.7 yrs	\$1,540,000	Midwest	2yrs	\$1,437,500	15.7yrs	\$2,977,500
ODOT	13.7 yrs	\$1,540,000	Henderson	2.8yrs	\$474,375	16.5yrs	\$2,014,375

Recommendations

The below table summarizes the cost and time of all the options listed above, the AIM teams recommendations were determined based on these figures.

Vendor	Time	Cost
ODOT	27.4 years	\$3,080,000
Familyography	4.8 years	\$2,213,7500
Midwest	4 years	\$3,025,000
Henderson	5.75 years	\$948,750
ODOT/Familyography	16.1 years	\$2,646,875
ODOT/Midwest	15.7 years	\$2,977,500
ODOT/Henderson	16.5 years	\$2,014,375

Factors used to base the recommendations were cost and time. ODOT expressed a desire to have the images scanned in two years. As shown above, one vendor alone could not meet the two year time frame. It was our impression from meeting with sponsors that time not money was the biggest driving factor of this project. With this in mind, our recommendations would be to outsource to Midwest & Henderson because they could potentially get the job done in less than two years and they would be using the same equipment OAE uses.

However, we do not recommend OAE outsource the old, brittle film or the rolls of film that contain frequently requested images. This would protect film from damage or destruction during transportation or mishandling by inexperienced technicians.

Digitizing the entire collection of aerial images would eliminate the need for a scanning technician, yearly maintenance on scanners and the need for an environmentally controlled clean room. This could potentially result in a savings to ODOT of approximately \$112,400 annually.



Project Charter

TEAM PROJECT - AERIAL IMAGERY MANAGEMENT (AIM)

Project Team Imagery is undertaking a project to provide a needs assessment to The Ohio Department of Transportations (ODOT), Office of Aerial Engineering (OAE). OAE has a vast collection of aerial images, currently stored on film, dated back to the 1940's. With age and constant handling, much of the film is beginning to deteriorate and break down. The OAE, in an effort to preserve this historical public information, would like to transfer the aerial film images into a high resolution digital format which will enable them to dispose of film. This project is to investigate and propose a solution. Our team will create a needs analysis for OAE, all project management documentation and a presentation for the stakeholders, course manager and class participants.

PROJECT MANAGER ASSIGNED AND LEVEL OF AUTHORITY:

Jana Edmunds is the project manager and has authority to assign tasks to team members. Thomas Waller, David O'Reilly, Mark Gall, and Eddy Dupree are dedicated to the project.

ACCEPTANCE CRITERIA:

Our team will create a Needs Analysis that will present cost and time comparison between scanning images in house versus out sourcing work. Project documentation and presentation will be completed May 24, 2012.

BUSINESS CASE:

As part of the project management course, our team is required to manage a project, which is identified as the Aerial Imagery Management (AIM) project for OAE. Project documentation must be created and presented in a formal manner to class members and other guests. The AIM analysis is being developed to provide information for OAE to determine the best course of action to preserve the vast collection of aerial images. Since all images are public record, by federal law images must be made available to the public. Currently images are stored on film and must be scanned into a digital format in order to create the products available to customers.

PROJECT COST ANALYSIS:

5 team members, 6.5 hours per week, 7 weeks, \$40

Estimated cost = \$9100

PRODUCT DESCRIPTION / DELIVERABLES:

1. Presentation on the Aerial Imagery Management project work.
2. Documentation of the Aerial Imagery Management project work.
3. A Needs Analysis that will compare the time and costs associated with scanning images internally versus out sourcing work to DAS or other vendor.

RISKS AND/OR ASSUMPTIONS:

Time constraints and insufficient resources are potential risks.

SIGNED AND APPROVED BY:

(Title) _____

Use of this tool

A Preliminary Scope Statement should be developed during the Initiation phase of a project and then finalized during the planning phase. The purpose is to document key objectives of the project or product, the project boundaries in terms of what will be done and not done in the project, high level deliverables and milestones. In addition, assumptions and constraints, alternate options and the acceptance criteria for verifying the project objectives have been met, should all be identified. The project manager and the project team will use this document as a point of reference for potential changes, added work, and any project decisions.

PROJECT IDENTIFICATION		
Project Name	Project Sponsor	Agency Name
Aerial Imagery Management (AIM)	Mike Bline	Ohio Dept. of Transportation
Project Number (Finance Code – Optional)	Project Manager	Date Created
	Jana Edmunds	4/10/12

PROJECT / PRODUCT OBJECTIVES
<p>The project and product objectives are statements describing the tangible deliverables of the project and what they are expected to achieve. The objectives should be concisely written so they can be evaluated after the completion of the project to see whether they were achieved and to the extent they were achieved. The objectives should be SMART: Specific, Measurable, Attainable, Realistic and Time specific.</p> <p>Our team will create a Needs Analysis that will present cost and time comparison between scanning images in house versus out sourcing work. Project documentation and presentation will be completed May 24, 2012.</p>

PROJECT DESCRIPTION / DELIVERABLES – IN SCOPE
<p>What work needs to be completed during the project. What will be delivered at the end of the project? List the specific outputs that will be delivered by the project team at the end of the project. A deliverable is any outcome that must be produced to complete the project or part of a project. List as many as needed with the most important starting first on the top left. The deliverables listed are the top level of the work breakdown structure and may be expanded and further refined during the Planning Process and documented in the Project Plan.</p>

- Needs Analysis for Office of Aerial Engineering (OAE)
- Project documentation (Charter, Scope, Work Breakdown Structure, Communication Plan, Risk Plan, Human Resource Plan, Quality Plan, Procurement Plan and Cost Analysis).
- PowerPoint Presentation

PROJECT FEATURES AND FUNCTIONS

Describe the parameters of the product or service. Describe how the product or service is to be delivered, once the project has completed. This section permits you to be more specific with the expectations of the product or service.

Upon completion of the project we will:

- Present our analysis in a PowerPoint presentation to stakeholders.
- Present OAE a copy of the Needs Analysis.
- Make available all project documentation via the team SharePoint site.

OUT OF SCOPE - OBJECTIVES

Excluded objectives (the benefits which someone might expect, but will not be realized as a result of the project). Be sure to only list excluded objectives that one can reasonably expect to be included by project sponsors or other interested parties. Since the Scope Statement focuses on what efforts are within the boundaries of the project, clearly identify work that may be necessary but not within the bounds of the effort by this project team.

We will not be providing a project plan for OAE to accomplish the completion of this scanning project.

INITIAL PROJECT ORGANIZATION

List the resources that will initially work to define the project.

Sponsor: Mike Bline

Project Manager: Jana Edmunds

Project Team: Mark Gall, Eddy Dupree, David O'Reilly, Thomas Waller

WORK BREAKDOWN STRUCTURE

At a minimum, provide the initial, high-level project milestones, deliverables and work packages. Insert initial schedule or link to the WBS if one has been created.

<https://dasportal.sp.ohio.gov/sites/OLPD/projectmanagementclass/Site%209/Shared%20Documents/Final%20Documents/AIM%20-WBS.docx>

INITIAL DEFINED RISKS

In bullet form, list the initial defined risks.

- Time constraints
- Insufficient resources

BUDGET

Provide an estimate of the project cost, including the estimate range (e.g., +/- 50%).

Total cost of project \$9100

6.5 hours x 7 weeks = 45.5 hours

45.5 hours x 5 people = 227.5 total hours

227.5 total hours x \$40 = \$9100

ASSUMPTIONS / CONSTRAINTS

List in bullet format the known assumptions and constraints that have the potential to impact the project. List any assumptions/constraints that have been made in recommendations for the purpose of project planning. Assumptions are items the project team believes to be true as a basis for their project execution. Assumptions may have to do with resource availability, consistency of support from another area and other factors.

Constraints are typically given to a team. The team has limited ability to change the constraint.

- Team size will be 5 people working 6.5 a week for 7 weeks.
- Loss of a team member

ACCEPTANCE CRITERIA

Describe how the project/product will be reviewed to verify the project objectives have been achieved. Include interim reviews, quality assurance activities, and which organization(s) have final approval authority.

- Needs Analysis for Office of Aerial Engineering (OAE)
- Project documentation (Charter, Scope, Work Breakdown Structure, Communication Plan, Risk Plan, Human Resource Plan, Quality Plan, Procurement Plan and Cost Analysis).
- PowerPoint Presentation

All documents and presentation will be reviewed for grammar, spelling, formatting and consistency. These will then be approved by each team member prior to posting to SharePoint. Project documentation and presentation will be completed May 24, 2012.

APPROVAL

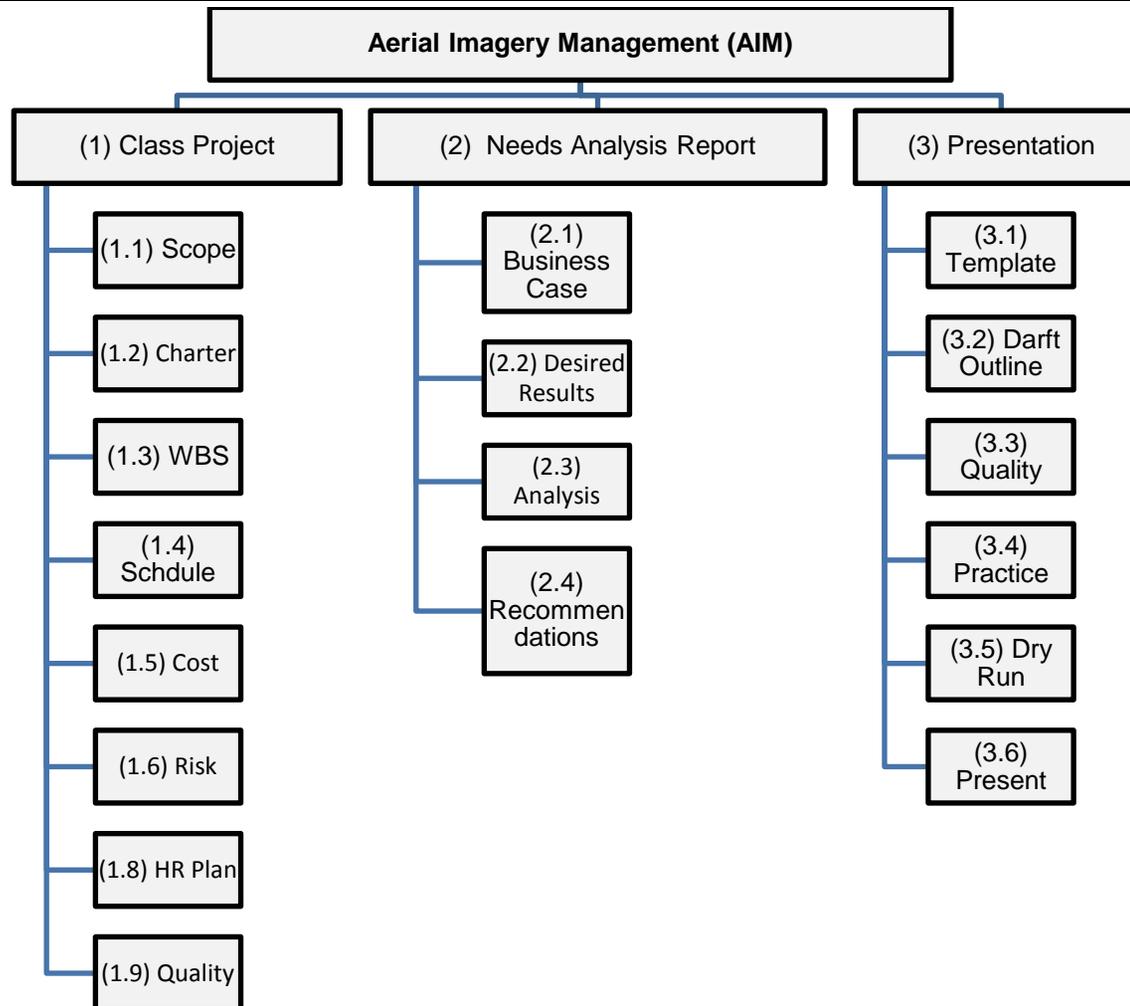
Name	Title	Approved Y/N	Date Approved
Nelson Gonzales	Project Management Course Manager		05/24/2012

Signature

(If Using Hard Copy)

Deliverable Details for Work Breakdown Structure (WBS)

Project Name:	Aerial Imagery Management (AIM)	Version #	1.4
Project Manager:	Jana Edmunds	Created by	Team
		Created Date	4/19/2012



ID	Active	Task Mode	Name	Duration	Start	Finish	Predecessors
1	Yes	Auto Scheduled	Aerial Archival - PMP	39 days	4/2/12 8:00 AM	5/24/12 5:00 PM	
2	Yes	Manually Scheduled	Class Plan	21 days	4/2/12 8:00 AM	4/28/12 5:00 PM	
3	Yes	Auto Scheduled	Charter	2.5 days	4/2/12 8:00 AM	4/4/12 12:00 PM	
4	Yes	Auto Scheduled	Initial Project Charter	0.5 days	4/2/12 8:00 AM	4/2/12 12:00 PM	
5	Yes	Auto Scheduled	Initial Project Charter Signoff	0.5 days	4/4/12 8:00 AM	4/4/12 12:00 PM	4
6	Yes	Auto Scheduled	Scope	0.5 days	4/5/12 8:00 AM	4/5/12 12:00 PM	5
7	Yes	Auto Scheduled	WBS	0.5 days	4/19/12 8:00 AM	4/19/12 12:00 PM	6
8	Yes	Auto Scheduled	Schedule	1.13 days	4/26/12 8:00 AM	5/2/12 5:00 PM	7
9	Yes	Auto Scheduled	Cost	0.5 days	4/5/12 8:00 AM	4/5/12 12:00 PM	
10	Yes	Auto Scheduled	Risk	0.5 days	4/30/12 8:00 AM	4/30/12 12:00 PM	
11	Yes	Auto Scheduled	Communication Plan	0.5 days	5/1/12 8:00 AM	5/1/12 12:00 PM	
12	Yes	Auto Scheduled	HR Plan	0.5 days	5/3/12 8:00 AM	5/3/12 12:00 PM	8SS
13	Yes	Auto Scheduled	Quality	0.5 days	4/5/12 8:00 AM	4/5/12 12:00 PM	
14	Yes	Auto Scheduled	Needs Analysis	18 days	4/25/12 8:00 AM	5/18/12 5:00 PM	
15	Yes	Auto Scheduled	Business Case	0.5 days	4/26/12 8:00 AM	4/26/12 12:00 PM	
16	Yes	Auto Scheduled	Desired Results	0.5 days	4/25/12 8:00 AM	4/25/12 12:00 PM	15
17	Yes	Auto Scheduled	Analysis	1 day	4/30/12 4:00 PM	5/4/12 5:00 PM	16
18	Yes	Auto Scheduled	Recommendations	3.25 days	5/4/12 8:00 AM	5/18/12 5:00 PM	15,16,17
19	Yes	Manually Scheduled	Presentation Plan	13 days	5/1/12 8:00 AM	5/17/12 5:00 PM	
20	Yes	Auto Scheduled	Draft Outline	3 days	5/1/12 8:00 AM	5/3/12 5:00 PM	

21	Yes	Auto Scheduled	Quality	2 days	5/15/12 8:00 AM	5/16/12 5:00 PM	
22	Yes	Auto Scheduled	Practice	1 day	5/17/12 8:00 AM	5/17/12 5:00 PM	21
23	Yes	Auto Scheduled	Presentation	1 day	5/24/12 8:00 AM	5/24/12 5:00 PM	22

ID	Name	Initials	Type	Material Label	Material Group	Email Address	Windows User Account	Max Units	Standard Rate
1	Jana Edmunds	J	Work					100%	\$40.00/h
2	Eddy Dupree	E	Work					100%	\$40.00/h
3	Mark Gall	M	Work					100%	\$40.00/h
4	David O'Reilly	D	Work					100%	\$40.00/h
5	Thomas Waller	T	Work					100%	\$40.00/h
6	<New Resource>	<	Work					100%	\$0.00/h

Task Name	Resource Name	% Work Complete	Work	Units
Initial Project Charter	David O'Reilly	1	4h	100%
Initial Project Charter Signoff	David O'Reilly	1	4h	100%
Initial Project Charter Signoff	Eddy Dupree	1	4h	100%
Initial Project Charter Signoff	Jana Edmunds	Auto Scheduled	4h	100%
Initial Project Charter Signoff	Mark Gall	1	4h	100%
Initial Project Charter Signoff	Thomas Waller	1	4h	100%
Scope	David O'Reilly	1	4h	100%
WBS	David O'Reilly	1	4h	100%
WBS	Eddy Dupree	1	4h	100%
WBS	Jana Edmunds	1	4h	100%
WBS	Mark Gall	1	4h	100%
WBS	Thomas Waller	1	4h	100%
Schedule	Thomas Waller	1	9h	100%
Cost	Eddy Dupree	1	4h	100%
Risk	Eddy Dupree	1	4h	100%
Communication Plan	Jana Edmunds	1	4h	100%
HR Plan	Thomas Waller	1	4h	100%
Quality	Jana Edmunds	1	4h	100%
Quality	David O'Reilly	1	4h	100%
Business Case	Jana Edmunds	1	4h	100%
Desired Results	Jana Edmunds	1	4h	100%
Analysis	Eddy Dupree	0	4h	100%
Analysis	Jana Edmunds	0	8h	100%
Analysis	Mark Gall	0	4h	100%
Recommendations	Mark Gall	0.13	15h	100%
Recommendations	Eddy Dupree	0	11h	100%
Draft Outline	David O'Reilly	0	24h	100%
Quality	David O'Reilly	0	16h	100%
Quality	Eddy Dupree	0	8h	100%
Quality	Jana Edmunds	0	16h	100%
Quality	Mark Gall	0	8h	100%
Quality	Thomas Waller	0	16h	100%
Practice	David O'Reilly	0	8h	100%
Practice	Eddy Dupree	0	4h	100%
Practice	Jana Edmunds	0	8h	100%
Practice	Mark Gall	0	8h	100%
Practice	Thomas Waller	0	8h	100%
Presentation	David O'Reilly	0	8h	100%
Presentation	Eddy Dupree	0	8h	100%
Presentation	Jana Edmunds	0	8h	100%
Presentation	Mark Gall	0	8h	100%
Presentation	Thomas Waller	0	8h	100%

AIM Communication Plan

2012

Event	Target Audience	Message Objective	Timing	Vehicle	Sender	Feedback mechanism
Team meeting Communications	Team	Discuss future action plans, ensure project is on schedule, discuss issues, complications, etc. with project. Review work completed	As needed	Face-to-Face Electronic	Team	Face-to-Face Electronic
Weekly Project Status Update	Team	Report on statuses of project and action items.	Weekly	Face-to-Face	Team	Face-to-Face Electronic
Meeting Agenda & Minutes	Team	Detailed record of meeting events, discussions and decisions.	Weekly	SharePoint	Eddy Dupree	Electronic Face-to-Face
Project team site	Team	Access to project documentation for review and use by team and project management instructor.	Weekly	SharePoint	Thomas Waller	Electronic Face-to-Face
Presentation	ODOT / DAS Sponsors & PM class	Present project suggestions to sponsors and communicate knowledge learned in Project Management training.	May 24, 2012	Face-to-Face	AIM Team	Face-to-Face

Team Roster

Name	Department	Role	E-mail	Contact
Jana Edmunds	ODOT	Project Manager	Jana.edmunds@dot.state.oh.us	614-275-1365
Thomas Waller	EPA	Technical Support	Thomas.Waller@epa.state.oh.us	614-644-2981
David O'Reilly	Public Safety	PowerPoint	David.t.oreilly@gmail.com	614-799-3604
Eddy Dupree	ODJFS	Communications	Eddy.dupree@ifs.ohio.gov	614-314-0078
Mark Gall	ODOT	Cost Analysis	Mark.gall@dot.state.oh.us	614-351-5510

Aerial Imagery Management (AIM)



Overview

- Team Project
 - Costs, Risk, Quality
- Needs Analysis
- Recommendation

Office of Aerial Engineering(OAE) - Home Page

Mission Statement

To provide high quality geospatial products, services, and support using traditional and innovative technologies in the Remote Sensing, Mapping and Surveying fields.

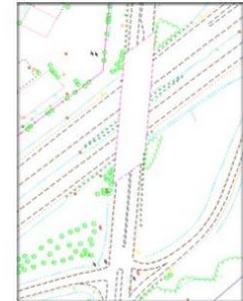
Surveying



Remote Sensing



Digital Mapping



OHIO DEPARTMENT OF
TRANSPORTATION

MOVING OHIO INTO A PROSPEROUS NEW WORLD



AIM Team Members

- Jana Edmunds (ODOT) - Project Manager
- Eddy Dupree (ODJFS)
- Mark Gall (ODOT)
- David O'Reilly (ODPS/OEMA)
- Thom Waller (OEPA)



Thom

Terri

Eddy

David

Nelson

Jana

Mark

Aerial
THE AVENGERS

 **MARVEL**
TM & © 2012 Marvel & Subs. www.marvel.com

A decorative border consisting of a horizontal film strip with eight sprocket holes visible at the top and bottom edges of the slide.

Project Description

- Over 575,000 Film Images
 - On 2300 Rolls
 - Dating Back to 1940s
- Scan to High Resolution Digital Format
- Server Storage

Charter

- Needs Assessment
- Project Documentation / Presentation
- Project Team
- Acceptance Criteria: May 24, 2012
- Costs
- Risks

Scope

- Needs Analysis: In House vs Outsource
 - Time & Cost Comparison
- Deliverables
- Sponsor

Work Breakdown Structure

- Tasks Needed to Complete Project
- Assigned Resources
- Scheduling

Schedule

- Timeframe - 7 Weeks
- Weekly Meetings
- Tasks Assignments

Communication Plan

- Weekly Meetings
- Minutes
- SharePoint
- Status Updates

Communication Plan



Team Meetings

Communication Plan

Event	Target Audience	Message Objective	Timing	Vehicle	Sender	Feedback mechanism
Team meeting Communications	Team	Discuss future action plans, ensure project is on schedule, discuss issues, complications, etc. with project. Review work completed	As needed	Face-to-Face Electronic	Team	Face-to-Face Electronic
Weekly Project Status Update	Team	Report on statuses of project and action items.	Weekly	Face-to-Face	Team	Face-to-Face Electronic
Meeting Agenda & Minutes	Team	Detailed record of meeting events, discussions and decisions.	Weekly	SharePoint	Eddy Dupree	Electronic Face-to-Face
Project team site	Team	Access to project documentation for review and use by team and project management instructor.	Weekly	SharePoint	Thomas Waller	Electronic Face-to-Face
Presentation	ODOT / DAS Sponsors & PM class	Present project suggestions to sponsors and communicate knowledge learned in Project Management training.	May 24, 2012	Face-to-Face	AIM Team	Face-to-Face

Cost Analysis

- Projected Cost = \$9,100
 - (45.5 hrs * 5 persons)* \$40
- Additional Cost = \$2,720
 - 68 hrs * \$40
- Actual Cost = \$11,820

Risk Plan

Risk Characteristics:

- Related to Uncertain Event
- May Have Positive/Negative Affect on Project
- Historical Data Provides Most Accurate Information That Can Reduce Risk

Risk Plan



Risk is everywhere!!

Risk Plan

AIM - Risk Registry

Risk Title	Risk Description	Severity	Mitigation
Lack of Resources	Team members may be removed from project	Low Impact	Reassign tasks
Time Constraints	7 week schedule too short to complete	High Impact	Work additional hours outside scheduled Thursday
Vendors	Lack of response	High Impact	Contact vendors or new vendors

Quality Plan

- Quality Assurance
 - Spell Check, Templates, Presentation Documents
- Quality Control
 - Thoroughly Review Products
 - Cost, Estimated Time

Human Resource Plan

- Project Team Assigned To Task
- Documentation
- Presentation
- Needs Analysis
- Vendor Research

Lessons Learned

- What Worked Well
 - Good Response from Sponsor, SMEs
 - Facility Availability (DAS, ODOT)
 - Teamwork

Lessons Learned

- What Did Not Work Well
 - SharePoint
 - Communication with Sponsor, SMEs
 - Vendor Response

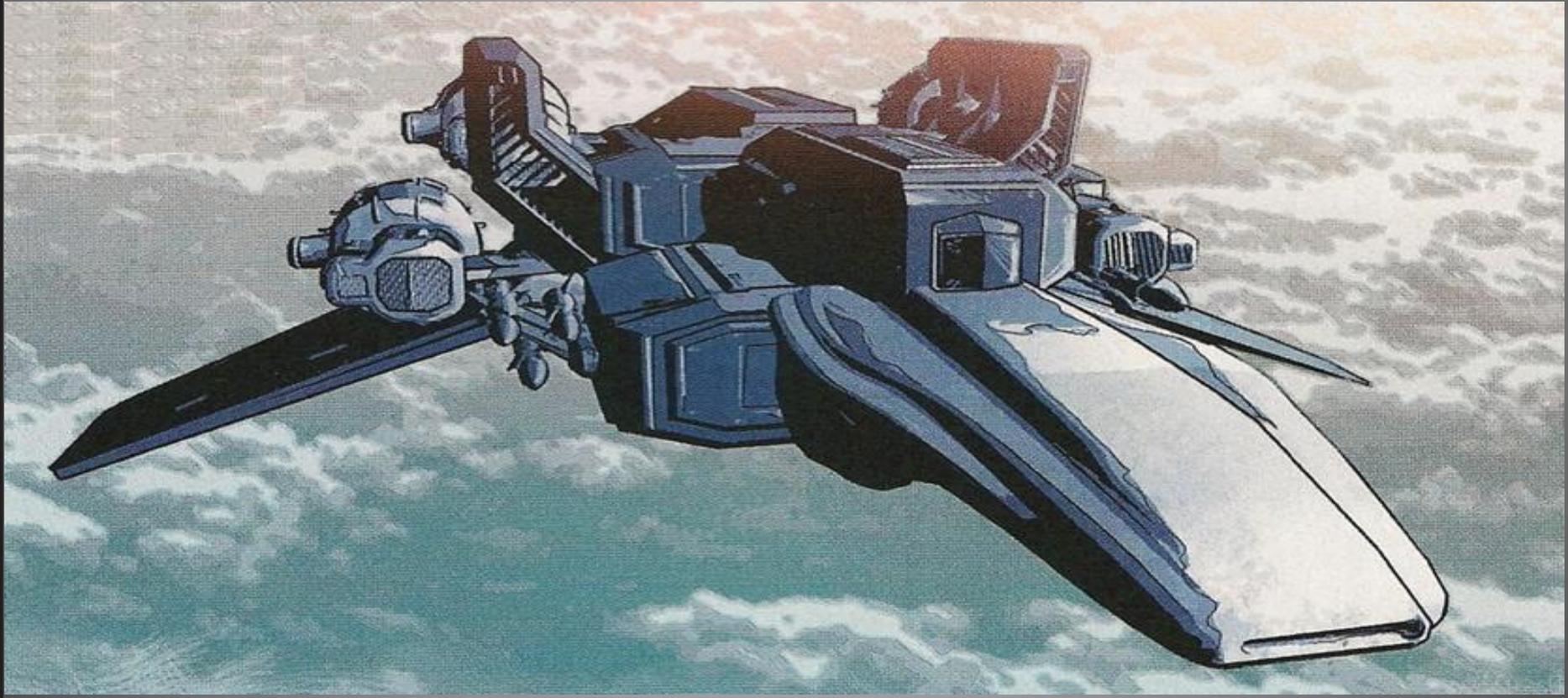
Lessons Learned

- What Would We Do Different
 - Proactive with Vendors / Deadlines
 - Good Requirements
 - Solid Scope Statement
 - Fine Tune Communication (Sponsor/SMEs)

Needs Analysis

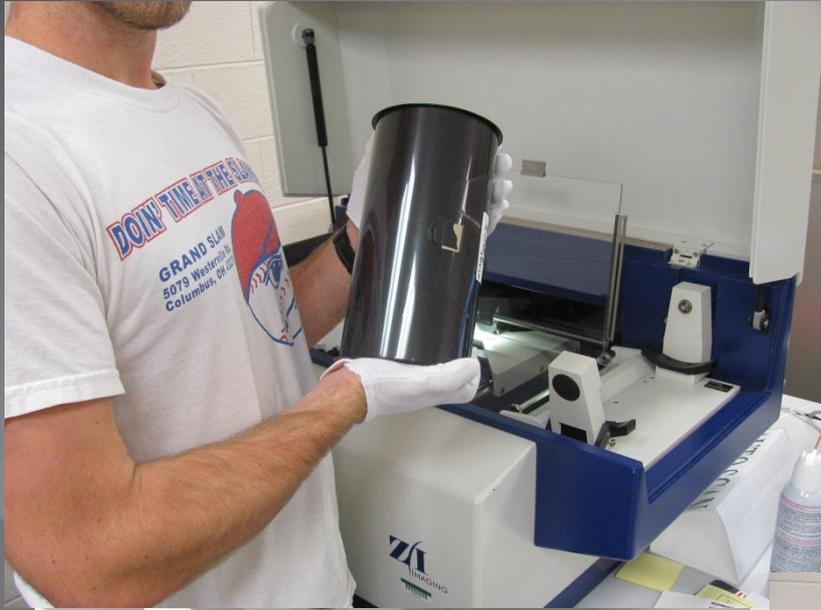
- Aerial Imagery Management (AIM)
- Business Case
- Desired Results
- Analysis
 - Time & Cost Comparisons
- Recommendation

Aerial Imagery



Business Case

- ODOT Has:
 - 575,000 Images on 2300 Rolls of Film
 - Dated from 1946 to 2009
 - Historical
 - Irreplaceable



Business Case

- Digitizing
 - Technology Changes
 - Film Preservation
 - Maintenance and Supply Cost Increases

Business Case

- Importance of Images
 - Identifies Old Dump Locations
 - Environmentally Sensitive Areas
 - Potential Hazardous Areas
- Saving Taxpayers \$M in Potential Construction and Environmental Issues

Business Case

Agencies	General Public / Private Business
ODNR	Lawyers
EPA	Surveyors
Attorney General	Developers
Inspector General	Land Owners
PUCO	Utility Companies
Universities	Hunters

Communication Plan



Team Meetings

Desired Results

- All Images Scanned, Digital Format
- High Resolution (21 microns)
- Tiff Format (Retains 90% Quality)
- Accessible
- 2 Years Timeframe



Analysis (All Images)

In House / Vendor	Estimated Cost	Time (Years)
ODOT (In House)	\$1,725,000	27.4
Midwest Aerial (Local)	\$2,875,000	4
Familyography (Local)	\$2,213,750	5
Henderson Aerial (Local)	\$948,750	6.3
Denevi Digital (California)	\$442,750	1

Analysis (~ 250,000 Images)

In House / Vendor	Estimated Cost	Time (Years)
ODOT (In House)	\$431,250	13.7
Midwest Aerial (Local)	\$625,000	2
Familyography (Local)	\$965,000	2.5
Henderson Aerial (Local)	\$327,000	3.15
Denevi Digital (California)	\$192,500	6 Months

Recommendation

- ODOT Scan Oldest, Most Popular
 - 50 Rolls (12,500 Images)
- Outsource to 2 or 3 Vendors
 - Estimated 2250 Rolls (562,000 Images)
- Allow Completion within 2 Year Goal

Take AIM

- Project
- Needs Analysis
- Recommendation



No More Questions!!!

