

Environmental Intelligence Network Systems Remote Monitoring System - Detailed Design -

Welcome

Mr. Ken Swarner

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Systems Administrator

Professor

Detailed Design Presentation

Roger Bacon 328

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Anthony Ruotolo:	Introduction & Overview
Michael Devanandan:	Review of Prototypes
Joseph Halvey:	Database Design
Vernell Mitchell:	Testing
Anthony Ruotolo:	Conclusion
Ybelka Brito:	PowerPoint Conductor

Detailed Design Presentation

Anthony Ruotolo
Project Overview

Detailed Design Presentation

Michael Devanandan

Review of Prototypes

Sensored User-Login EIN Home

bar.gif - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address <http://ares.cs.siena.edu/~smj2080/wbd/login.htm> Go Links

E.I.N. SYSTEMS

Environmental Intelligence Network

Home Login/Logout Device Management User Settings Faq/Help Logs

Login

Returning Users Login Here:

User Name

Password [Forgotten Password?](#)

Login Logout

Registration

Welcome to E.I.N. Systems environmental monitoring network. Our site allows a user to access the information from an environmental sensor attached to their computer, from any internet access point. The system features adjustable alert features which will ensure that your sensed location is safe or inform you of the details if something is amiss. Multiple locations can be added under a single account, allowing our users quick reference to all of their properties, so they can be sure that everything is safe and secure from anywhere at any time. To learn more about environmental monitoring network please see our [FAQ](#) for a full set of instructions.

New Users must have a compatible device to register an account. See [FAQ](#) for a list of tested devices. If you have a device and are at the location you wish to register please [proceed here](#).

Internet

Sensored User-Home

Ein Systems Home Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://ares.cs.siena.edu/~smj2080/wbd/home.htm> Go Links

Home Page

Welcome Back, Mr.Swarner

Your are located at your office location.
IP: 192.168.0.101
You have recieved 0 alert(s) since you last logged in on 11/15/05 at 13:35:04
The EMS is currently monitoring two locations: 1.Office 2.Home

Location 1 Office:

Device	Status	Reading
Temperature Sensor	ACTIVE	70 F at 11:30:00 on 11/16/05

Quick Bar
DEVICE ALERTS Logout

Location 2 Home:

Device	Status	Reading
Temperature Sensor	ACTIVE	72 F at 11:30:00 on 11/16/05
Motion Sensor	ACTIVE	No movement at 11:30:00 on 11/16/05

Quick Bar
DEVICE ALERTS Logout

Done Internet

Sensored User-Device MGMT

Device Management

You have registered 3 devices at 2 locations.

You can add a new device to a location [here](#).

You can remove a current device from a location [here](#).

Devices:

Device	Brand	Status	Location	Alerts Set
Thermometer #1	Sorny #24601	ACTIVE	OFFICE	65 F < OK <= 85 F Enabled: Yes Change Settings
Thermometer #2	Panaphonic #69	ACTIVE	HOME	65 F < OK <= 85 F Enabled: Yes Change Settings
Camera	Magnetbox #8675309	ACTIVE	HOME	Last Saved Image  Change Settings

Quick Bar

[DEVICE](#) [ALERTS](#) [Logout](#)

Sensored User-User Settings

User Settings - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail Stop

Address <http://ares.cs.siena.edu/~smj2080/wbd/user.htm> Go Links >>

User Account Management

Here you can edit your personal information and add a read only user.

User Info	Register A Read Only Guest User
First <input type="text"/>	First <input type="text"/>
Last <input type="text"/>	Last <input type="text"/>
Address <input type="text"/>	Address <input type="text"/>
Phone <input type="text"/>	Phone <input type="text"/>
Email <input type="text"/>	Email <input type="text"/>
Password <input type="text"/>	Password <input type="text"/>
Security Question <input type="text"/>	Security Question <input type="text"/>
Security Answer <input type="text"/>	Security Answer <input type="text"/>
<input type="button" value="Submit Changes"/>	<input type="button" value="Submit Guest User"/>

[Click here to remove an account.](#)

Internet

Sensored User-Logs

bar.gif - Microsoft Internet Explorer

Address: <http://ares.cs.siena.edu/~smj2080/wbd/logs.htm>

Logs

Devices: Messages Recieved Since Last Alert
Thermometer #1 Location: Office

Message	Status	Date and Time	Reading
Reading	ACTIVE	11/14/05 12:00:00	70F
Reading	ACTIVE	11/13/05 12:00:00	71F
Alert (Below Range)	ACTIVE	11/12/05 15:16:08	62F

Quick Bar
DEVICE ALERTS Logout

Thermometer #2 Location: Home

Message	Status	Date and Time	Reading
Reading	ACTIVE	11/14/05 16:00:00	73F
Reading	ACTIVE	11/13/05 16:00:00	72F
Alert (No Signal)	INACTIVE	11/13/05 01:23:09	None

Quick Bar
DEVICE ALERTS Logout

Camera Location: Home

Message	Status	Date and Time	Reading
Reading	ACTIVE	11/15/05 12:00:00	Snapshot

Detailed Design Presentation

Joseph Halvey

Database Design

Relationship Report

Relationships for EINDesign

Sunday, February 19, 2006

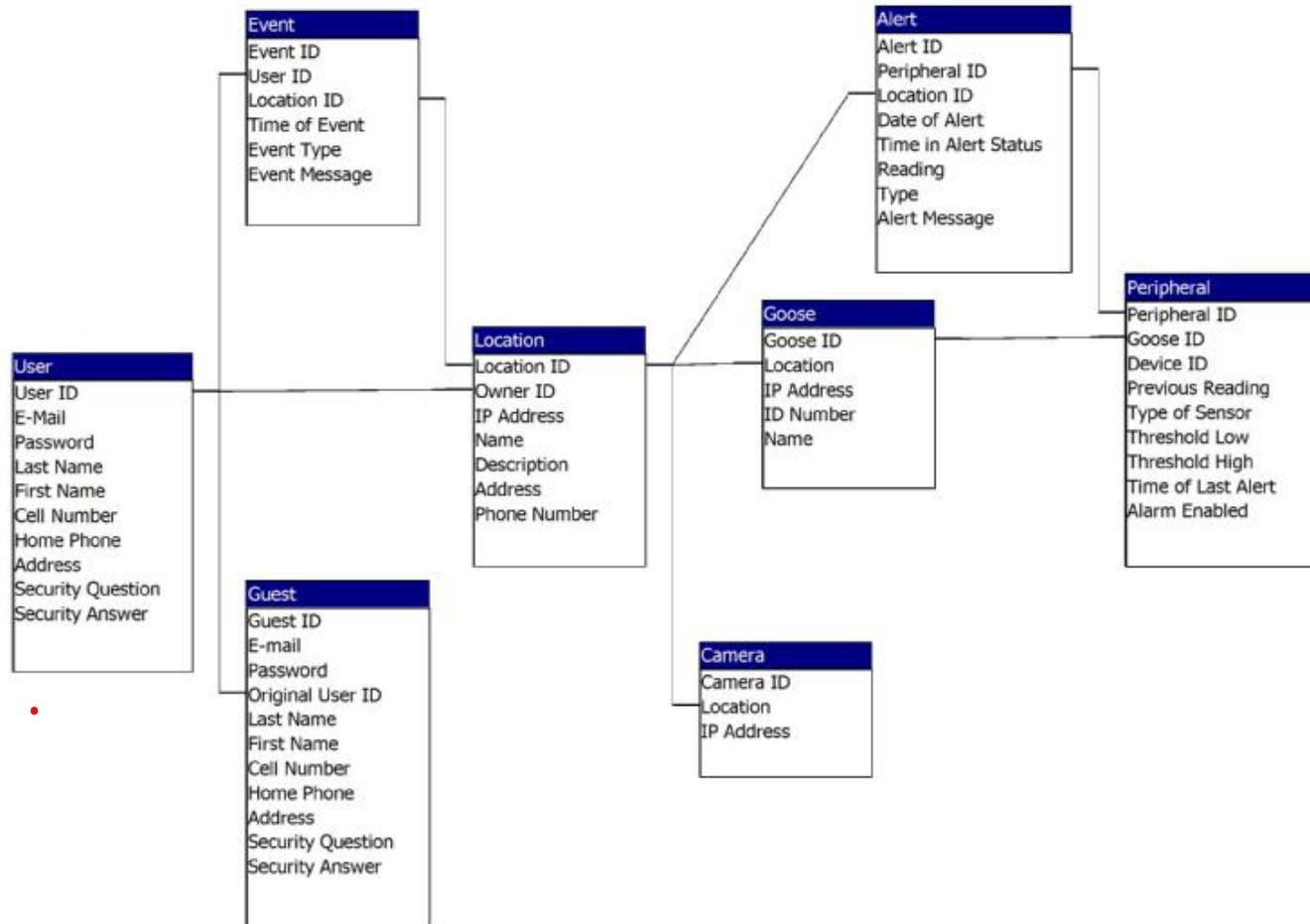


Table Descriptions

- **User-** This table stores information about a user in the database.

User : Table			
	Field Name	Data Type	Description
	User ID	AutoNumber	This field stores the unique account number for the user
	E-Mail	Text	This field stores the e-mail address of the user which is used for a login username.
	Password	Text	This field stores the login password for the user.
	Last Name	Text	This field stores the last name of the user.
	First Name	Text	This field stores the first name of the user.
	Cell Number	Text	This field stores the cell phone number of the user.
	Home Phone	Text	This field stores the home phone number of the user.
	Address	Text	This field stores the address of the user.
	Security Question	Text	This field stores a security question provided by the user.
	Security Answer	Text	This field stores the answer to the security question provided by the user.
			

Table Descriptions (continued)

- **Event** - This table stores information about a event of a device in the database.

Event : Table			
	Field Name	Data Type	Description
	Event ID	AutoNumber	This field stores the unique event number for the event.
	User ID	Number	This field stores the User ID number of the user the event was triggered for.
	Location ID	Number	This field stores the Location ID of the location where the event was triggered.
	Time of Event	Date/Time	This field stores the time the event occurred.
	Event Type	Text	This field stores the type of event that occurred.
	Event Message	Text	This field stores the message generated by the event.
			

Table Descriptions (continued)

- **Location** - This table stores information about a registered location in the database.

Location : Table			
	Field Name	Data Type	Description
🔑	Location ID	AutoNumber	This field stores the unique location number for the location.
	Owner ID	Text	This field stores the account number for the user that registered this location.
	IP Address	Text	This field stores the IP Address of this location.
	Name	Text	This field stores the name assigned to this location.
	Description	Text	This field stores the description assigned to this location.
	Address	Text	This field stores the address of this location.
	Phone Number	Text	This field stores the phone number of this location.
▶			

Table Descriptions (continued)

- **Guest** - This table stores information about a guest user in the database.

Guest : Table			
	Field Name	Data Type	Description
	Guest ID	AutoNumber	This field stores the unique account number for the guest user
	E-mail	Text	This field stores the e-mail address of the guest user which is used for a login username.
	Password	Text	This field stores the login password for the guest user.
	Original User ID	Number	This field stores the account number for the user that created this guest user.
	Last Name	Text	This field stores the last name of the guest user.
	First Name	Text	This field stores the first name of the guest user.
	Cell Number	Text	This field stores the cell phone number of the guest user.
	Home Phone	Text	This field stores the home phone number of the guest user.
	Address	Text	This field stores the address of the guest user.
	Security Question	Text	This field stores a security question provided by the user.
	Security Answer	Text	This field stores the answer to the security question provided by the user.
			

Table Descriptions (continued)

- **Goose** - This table stores information about a goos in the database.

 **Goose : Table**

	Field Name	Data Type	Description
	Goose ID	AutoNumber	This field stores the unique ID number for this Goos device.
	Location	Number	This field stores the ID number for the location the Goos is located.
	IP Address	Text	This field stores the IP Address of the Goos device.
	ID Number	Number	This field stores the ID number the Goos device assigns itself.
	Name	Text	This field stores the name of the Goos device.

Table Descriptions (continued)

- **Camera** - This table stores information about a camera in the database.

Camera : Table			
	Field Name	Data Type	Description
	Camera ID	AutoNumber	This field stores the unique ID number of the camera.
	Location	Number	This field stores the ID number of the location the camera is at.
	IP Address	Text	This field stores the IP Address of the camera.

Table Descriptions (continued)

- **Alert-** This table stores information about a Alert in the database.

Alert : Table			
	Field Name	Data Type	Description
PK	Alert ID	AutoNumber	This field stores the unique ID number of the alert.
	Peripheral ID	Number	This field stores the ID number of the Peripheral that is in alert status.
	Location ID	Number	This field stores the ID number of loaction the alert occured at.
	Date of Alert	Date/Time	This field stores the date and time of the alert.
	Time in Alert Status	Text	This field stores the total amount of minutes the peripheral was in alert status.
	Reading	Number	This field stores the reading that triggered the alert.
	Type	Text	This field stores the type of alert.
	Alert Message	Text	This field stores a message describing the alert.

Table Descriptions (continued)

- **Peripheral** - This table stores information about a peripheral in the database.

Peripheral : Table			
	Field Name	Data Type	Description
	Peripheral ID	AutoNumber	This field stores the unique ID number of a peripheral attached to a Goos device.
	Goose ID	Number	This field stores the ID number of the Goos that the peripheral is attached to.
	Device ID	Number	This field stores the ID number the peripheral assigns itself.
	Previous Reading	Text	This field stores the last reading from the peripheral.
	Type of Sensor	Text	This field stores the the type of sensor the peripheral is.
	Threshold Low	Number	This field stores the value that if the reading is lower will trigger an alert.
	Threshold High	Number	This field stores the value that if exceeded by the reading will trigger an alert.
	Time of Last Alert	Date/Time	This field stores the date and time of the last alert, if any.
	Alarm Enabled	Yes/No	This field stores if the peripheral is in alert status.

Logical Data Store

- A logical data store is a description of the fields in the tables of a database.
- It is used to help plan the schema of a database.
- This logical data store will be used in the creation of the User Database for the Environmental Monitoring System.

User Table

- User ID – A unique ID number for the user's account. NUMBER
- E-mail Address – the e-mail address of the user, used to identify the user at login. VARCHAR (50)
- Password – The user's password supplied at login to give access to the system. Must be between 6 and 12 characters long, including at least one upper case, one lower case, and at least one of the following characters: \$, *, #, &, ^, |, =, %. VARCHAR (13)
- First Name – The user's first name. VARCHAR (30)
- Last Name – The user's last name. VARCHAR (30)
- Security Question/Answer Data – The security question and answer used to recover a password if the user loses it. VARCHAR (50)

Location Table

- Location ID – A number assigned to each location to be used as the primary key in the Location table. It is used to identify specific locations. Number
- Owner ID – The User ID for the user that owns the particular location. Number
- IP Address – The IP address of the computer at the location. VARCHAR (25)
- Name – The name of the location. VARCHAR (20)
- Description – A short description of the location. VARCHAR (50)
- Address – The address of the location. VARCHAR (50)
- Phone Number – The phone number of the location. VARCHAR (15)

Detailed Design Presentation

Vernell Mitchell

Testing

Testing

What Will be Tested?

Unit Testing

Integration Testing (Regression Testing)

Acceptance Testing

What Will Be Tested?

- Website
- Database
- Devices

Unit Test

	A	B	C	D	E	F	G	H	I	J	K
1	Home Page (home.htm)										
2	Num	Name	ID	Description	State Before Test	State After Test	Input/Test Values	Steps to be Executed	Expected Results	Pass/Fail	Comments
3	1	Home Page Link Clicked	Link	Home Page Link is Clicked	home.htm	home.htm	None	Load webpage	home.htm page is loaded automatically		
4	2	Login/Logout Link Clicked	Link	Login/Logout Link is Clicked	home.htm	login.htm	None	Load webpage	login.htm page is loaded automatically		
5	3	Device Management Link Clicked	Link	Device Management Link is Clicked	home.htm	device.htm	None	Load webpage	device.htm page is loaded automatically		
6	4	User Settings Link Clicked	Link	User Settings Link is Clicked	home.htm	user.htm	None	Load webpage	user.htm page is loaded automatically		
7	5	Faq/Help Link Clicked	Link	Faq/Help Link is Clicked	home.htm	faq.htm	None	Load webpage	faq.htm page is loaded automatically		
8	6	Logs Link Clicked	Link	Logs Link is Clicked	home.htm	logs.htm	None	Load webpage	logs.htm page is loaded automatically		
9	7	Device Link Clicked	Link	Device Link is Clicked based on its location	home.htm	device.htm	None	Load webpage	device.htm webpage is loaded giving the description and information of every device		
10	8	Alerts Link Clicked	Link	Alerts Link is Clicked based on its Location	home.htm	alerts.htm	None	Load webpage	alerts.htm webpage is loaded giving the information of every user		
11	9	Logout Link Clicked	Link	Logout Link is Clicked under its location	home.htm	logout.htm	None	Load webpage	logout.htm page is loaded automatically		

Integration Testing

Integration Testing

■ Not pertinent

- ◆ Changes on pages don't affect others
- ◆ CSS
- ◆ Database changes tested outside of system

■ Regression Testing

- ◆ Selective retesting of a software system
- ◆ Ensures any bugs have been fixed
- ◆ Previously working functions not effected by modifications

Acceptance Test

Sensored User

Login page

- Can enter e-mail for username
- Can enter password, 6-12 characters long, at least one number, capital letter, lowercase letter, and one of eight recognized special characters shown here within double quotes “# \$ % ^ | & * =”
- Submit button works and submits the information within the e-mail and password fields

Acceptance Test

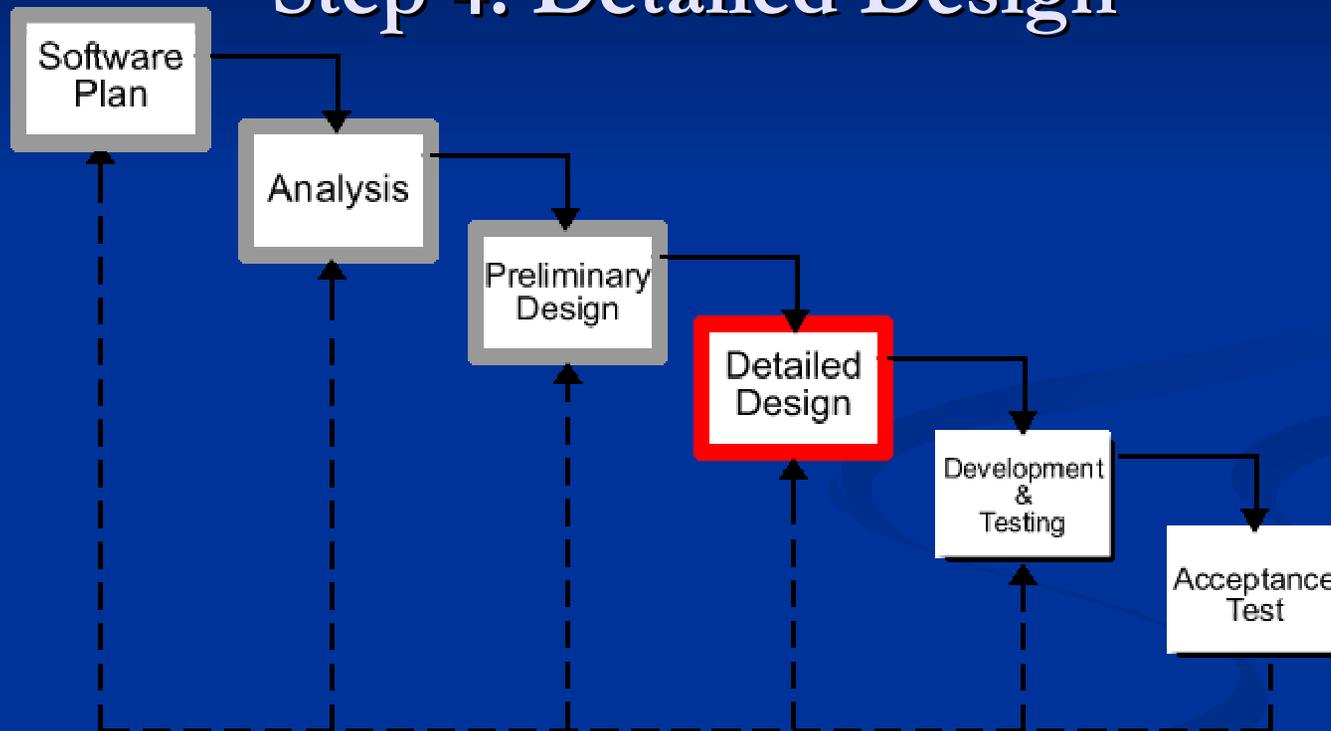
Sensored User

Login page

- Submit button sends the sensed user to the logged-in screen which is a user homepage with a welcome message, as well as a message informing the sensed user that the user is at a recognized, monitored location.
- The forgotten password link works and guides the sensed user with instruction on getting a working password
- The FAQ link works
- The new registration link works

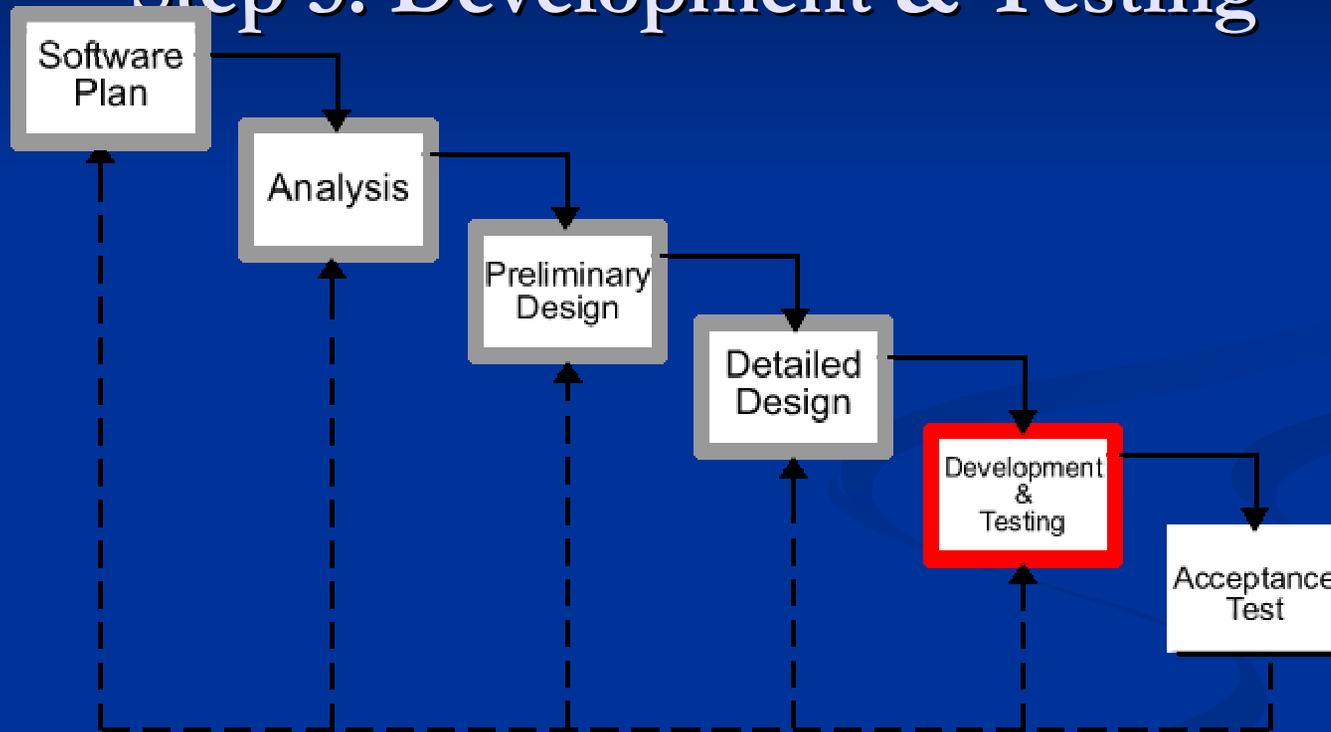
Classic Waterfall Model

Step 4: Detailed Design



Classic Waterfall Model

Step 5: Development & Testing



What's Next?

Tentative Dates

Detailed Design – February 21th, 2006

Acceptance Test – May 2nd, 2006

Academic Celebration – May 5th, 2006

Detailed Design Presentation

Anthony Ruotolo

Summary & Conclusion