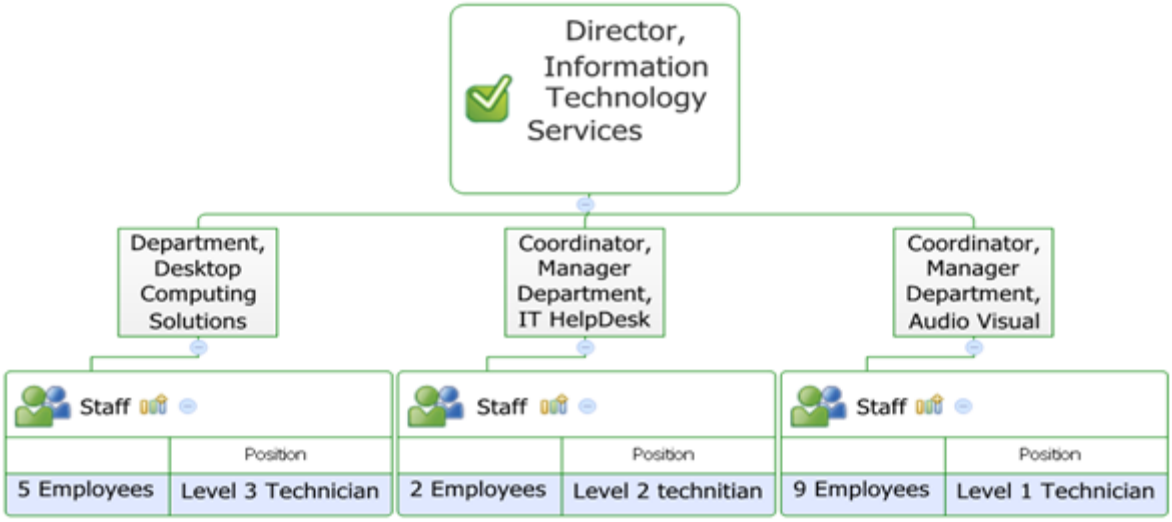
Final Report

Project Overview

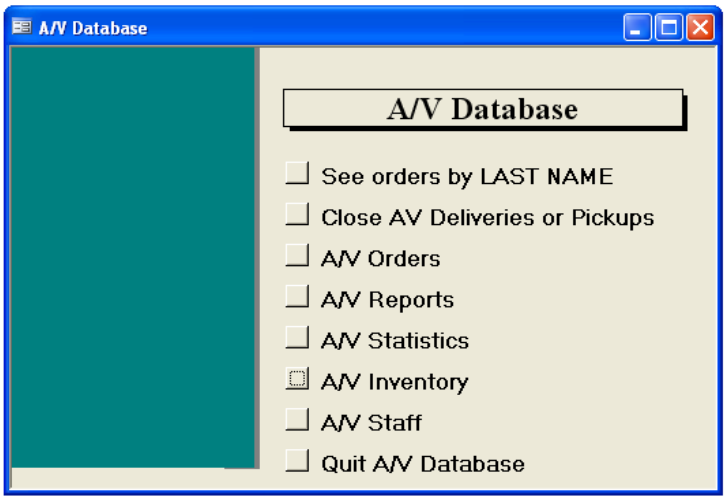
The intent for this proposal is to replace the current system that is been used by Triton College's Audio-Visual department (AV) for many years as a medium to keep track of departmental productivity for the college .The current functionality of such system has become quite antiquated and insufficient to meet the current needs of the department. This system it's been in production for over nine years and at its current stage it cannot longer handle the increasing number of demands from Triton College' staff and faculty. This trend will go on as the AV department continues to expand the offerings of services via web and mobile. As a result, the current system is too slow and too cumbersome to keep track of ticket orders and the manual process is creating an excess of equipment errors and dissatisfaction issues. This system will aid on customer satisfaction by greatly reduce complaints due to the lacking of inventory at hand, misplacing of equipment requests, and real-time reporting.

Current system synopsis - The AV ticket system is utilized to request AV equipment for classrooms, presentation facilities and theater from Faculty and Staff to the AV department. The system allows the AV department to know when a work order has been submitted with the given date/s, time/s, location and type of equipment. It is also used to keep track of assigned deliveries to AV staff throughout the day. The AV department consists of a Supervisor, two Coordinators, IT HelpDesk and 9 employees that are in charge for the delivery of equipment to two theaters, five presentation facilities, plus classrooms in a twelve building setup campus. Triton College typically hosts about fifteen thousand students per semester, about three hundred faculty and twelve hundred staff.

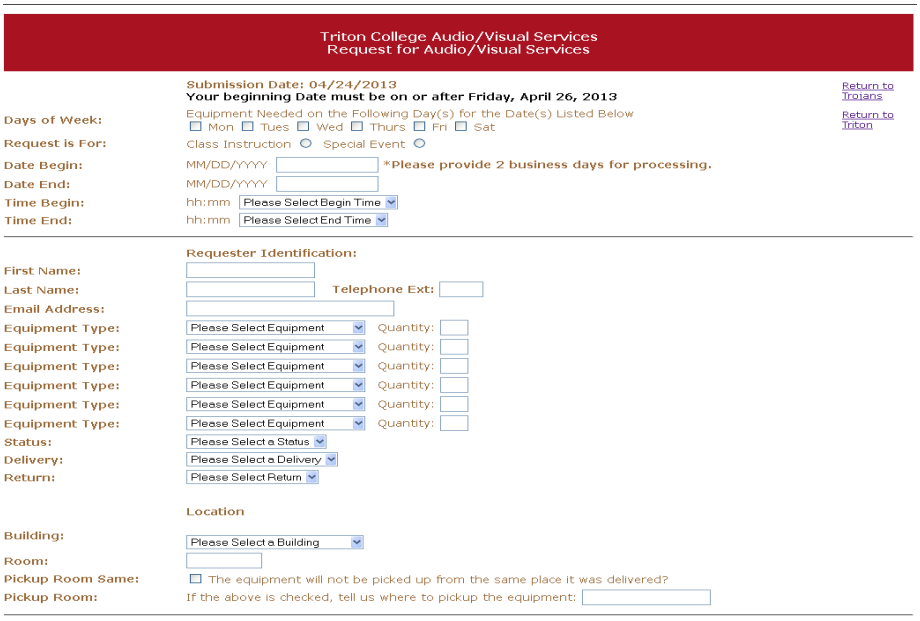


The current AV ticket system was developed 9 years ago and consists of two separate components.

Part one is an actual Microsoft Access Database which contains all the relational tables associated to delivery tickets, reporting, and equipment inventory. This database is located on a server as a shared source for the AV staff exclusively, and access is only limited on a way of user-rights to the server directory where the Access database is housed.



The second part is the web-request form. In here staff such as faculty makes a request for equipment to the AV department. This form runs as a separate component and every time someone submits a request, an email is generated to the IT Help Desk in the shape of a work order which gets printed and redirected to the AV department.



Use Case methodology

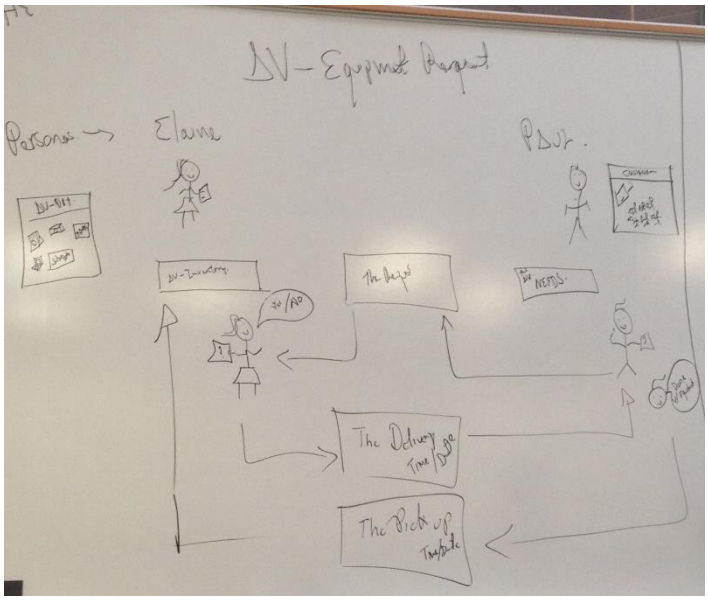
AV-Staff

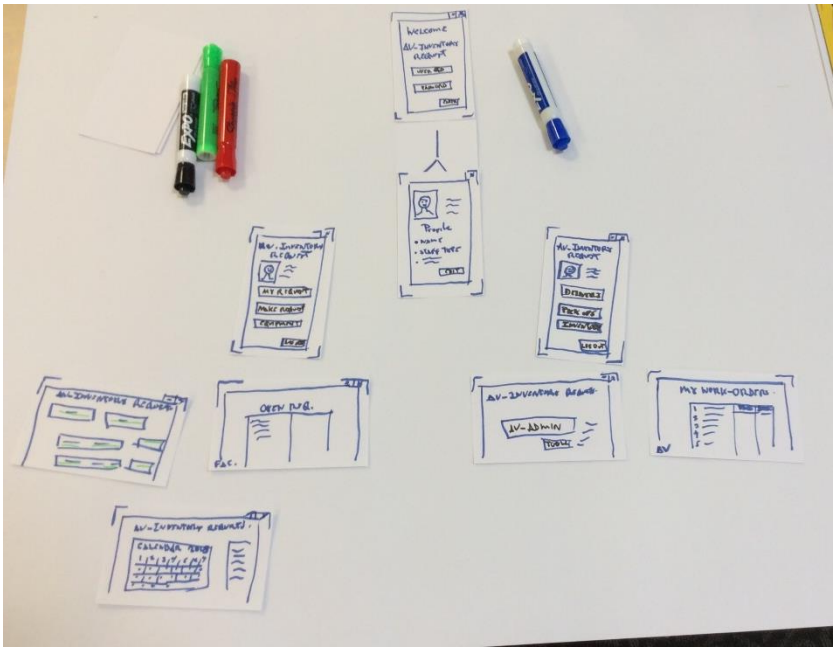
- The AV-technician who works for the Audio & Visual (AV) department handles all requests related to AV equipment for the College, such as laptops, projectors, microphone systems, video and audio recorder equipment etc.
- Every morning as part of AV-technician duties is to create individual work orders for each request made and deliver the equipment to the respective location.
- Manages inventory data, keeps track of open and close work-orders

Faculty

- Faculty members submits a number of AV equipment requests. The equipment is typically utilized for either group presentations or classroom purposes.
- Equipment ranges from laptops, projectors, microphone systems, video and audio recorder equipment etc.
- Searches inventory data, makes request based on needs

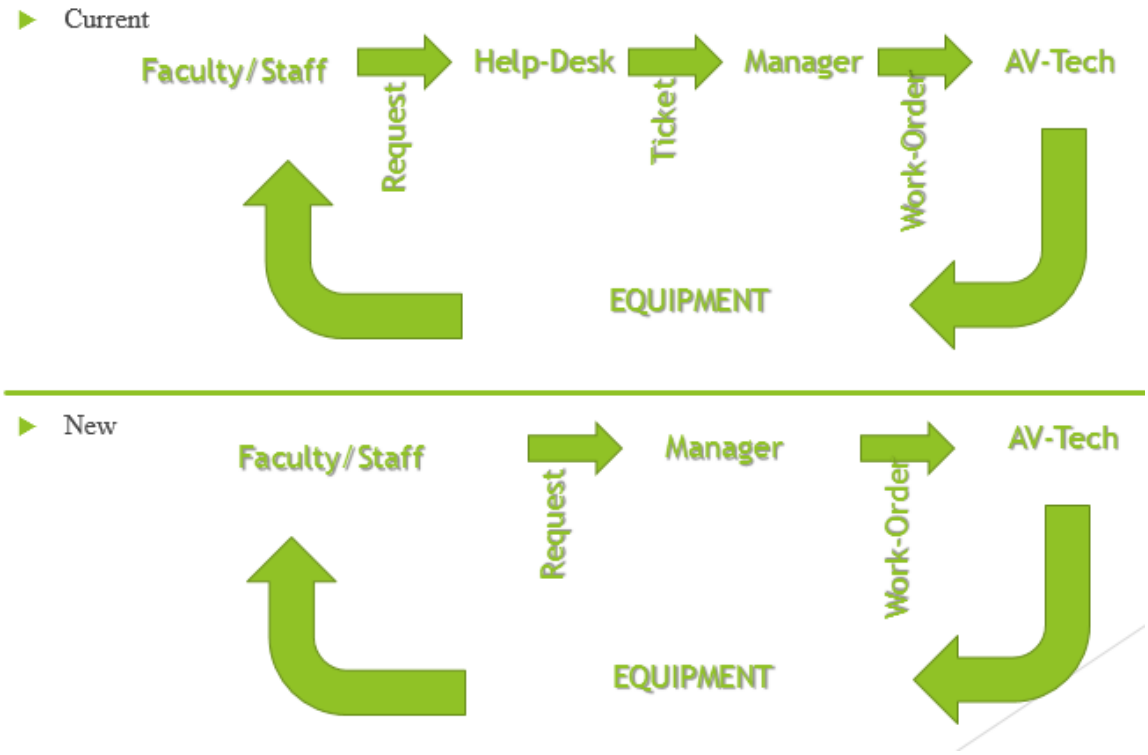
Author	Humberto Espino
Date	July 25, 2017
Version	1.0
Use-case name	Elaine, AV-Staff – Open and closing work-orders based on date and time.
Use-case number	
Priority	
Source	Inventory Data | Requests

Primary business actor	Staff
Other participating actors	Paul, Faculty member – Makes a request of specific equipment to be delivered by Elaine based on date and time
Interested stakeholders	AV-Department / Faculty
Description	The process starts from Paul browsing through the online inventory database and visually search and schedule the delivery of the equipment they have in mind by using various search criteria
Typical course of events	 1- Paul searches thru the inventory database for available equipment 2- Selects available equipment that best suits his needs 3- Makes a request for delivery which includes date and time 4- System creates a work-order as open and holds equipment

	5- Elaine, checks system for daily assigned work-orders 6- Based on time of the day, is either pick-up or delivery of equipment. 7- If delivery – Elaine scans-out equipment code and changes status of the work-order to Pick-up 8- If pick up- Once equipment is back, Elaine changes the status of the work-order to closed and scans-in equipment code. 9- As work-order status changes to closed, system makes the equipment available for the next request. 
Alternate courses	
Conclusion	This process will keep track of inventory equipment real-time as AV-department and Faculty will know what equipment is available and will reduce the number of inventory errors. The new system will simplify user operations by the integration of the equipment inventory system with staff/faculty delivery request work-order system. The proposed system should make it easier to track orders and remove the manual operations that are currently

	required to keep both inventory and delivery request systems in synch. Tracking orders -The system will be able to insert records into the database via the web form and generate work-order per request so that the av-department will not need to manually create work-orders. In addition the system will provide the ability to close orders via the online web form.
Post-condition	Equipment is scanned in and out at all times.
Business rules	-All equipment status, descriptions, locations will need to be provided in the inventory data -Faculty information needs to be validated -Work-order tracking needs to be part of the system -Administrative access for AV-Staff that allows inventory updates
Implementation constraints and specifications	This system proposes to integrate components from two distinctive systems into one, it will be written in Java along with HTML5, ColdFusion code and SQL language. It will utilize the email component of the current system, and will also introduce new technologies components for handheld devices.
Assumptions	Assumes that tracking of equipment and requests will be done thru the system.
Open issues	TBD

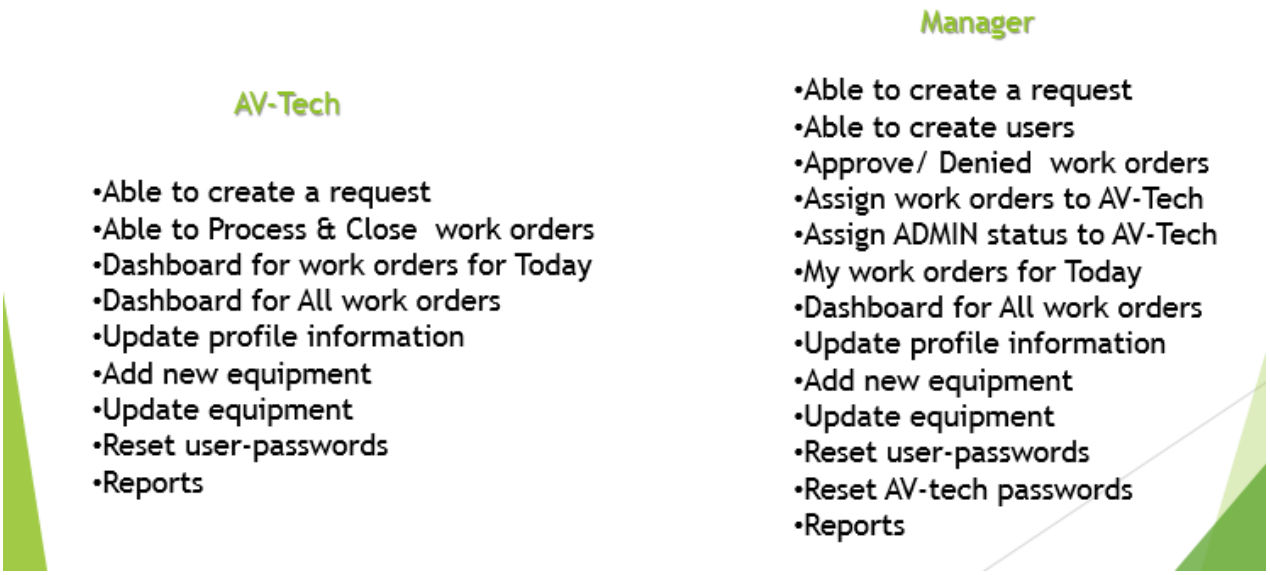
Proposal Overview – Use Case Workflow



System User Properties

Faculty/Staff

- Able to create a request
- Track the status
- Update profile information
- Communicate to the AV-Department



Proposed Solution Overview - New System Goals

- The AV Inventory Ticketing Management System will provide Triton College the benefits of a system that will allow staff and faculty make requests of instructional equipment for classrooms or events while keeping informed of the inventory at hand.
- Faculty will be able to browse through the online information database and visually search and schedule the delivery of the equipment they have in mind by using various search criteria.
- The system will provide the AV department the ability to accurately track orders and inventory real-time.

Potential Benefits

The AV Inventory Ticketing Management System will increase customer satisfaction by greatly reducing the number of complaints. The new system will give the staff the ability of tracking equipment real time, and be able to manage customer requests on a most efficient way based on reports.

New System Components

Web services will be used for the communication between the AV Inventory Ticketing Management System and users. The proposed solution is a Server-based system that will consist of a series of web interfaces and menus developed to run on desktop computers, laptops, iPads, and other mobile devices.

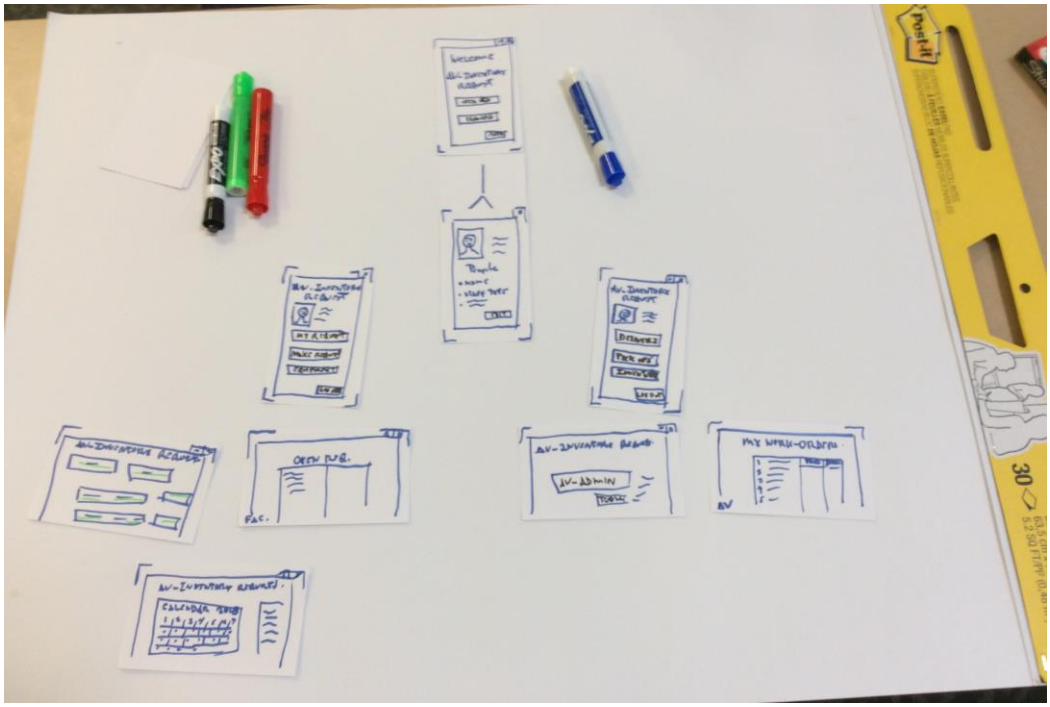
The new system will simplify user operations by the integration of the equipment inventory system with staff/faculty delivery request work-order system. The proposed system should make it easier to track orders and remove the manual operations that are currently required to keep both inventory and delivery request systems in synch.

Tracking orders -The system will be able to insert records into the database via the web form and generate order number so that the help desk would not need to check orders. In addition the system will provide the ability to close orders via the online web form.

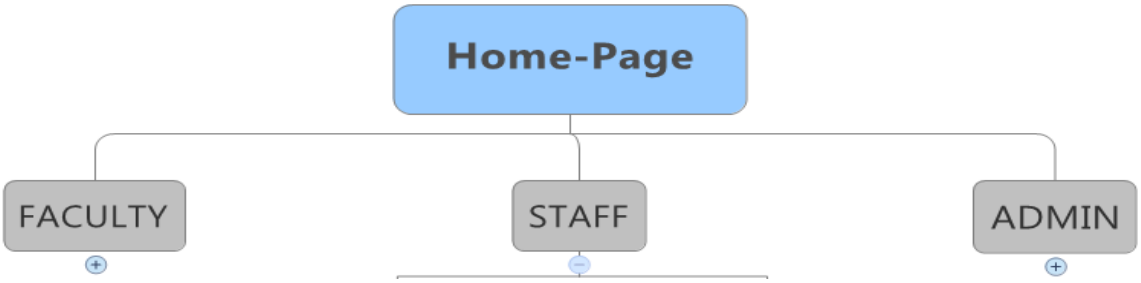
Track device code - The current system relies on honor system of whether equipment or cart was delivered or picked up, the new system will be able to track equipment by scanning to verify this and track if cart should be removed or left in room for reuse.

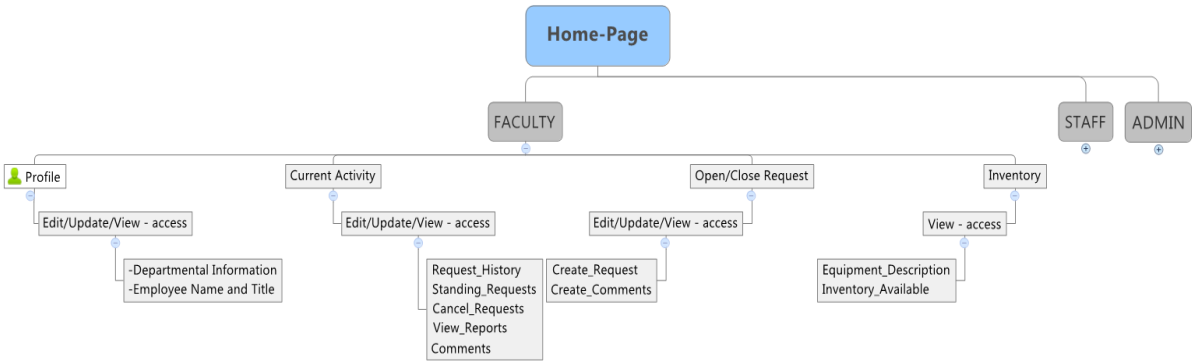
This system proposes to integrate components from two distinctive systems into one, it will be written in Java along with HTML5, ColdFusion code and SQL language. It will utilize the email component of the current system, and will also introduce new technologies components for handheld devices.

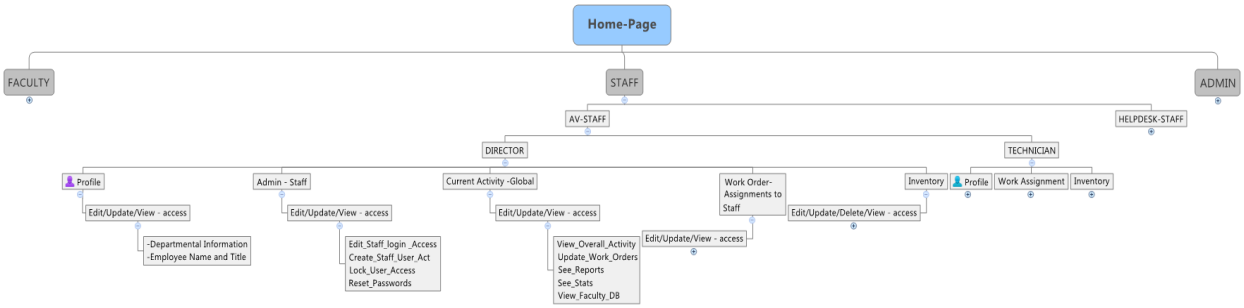
UI Design and Prototype



UI Design and Prototype - Architecture

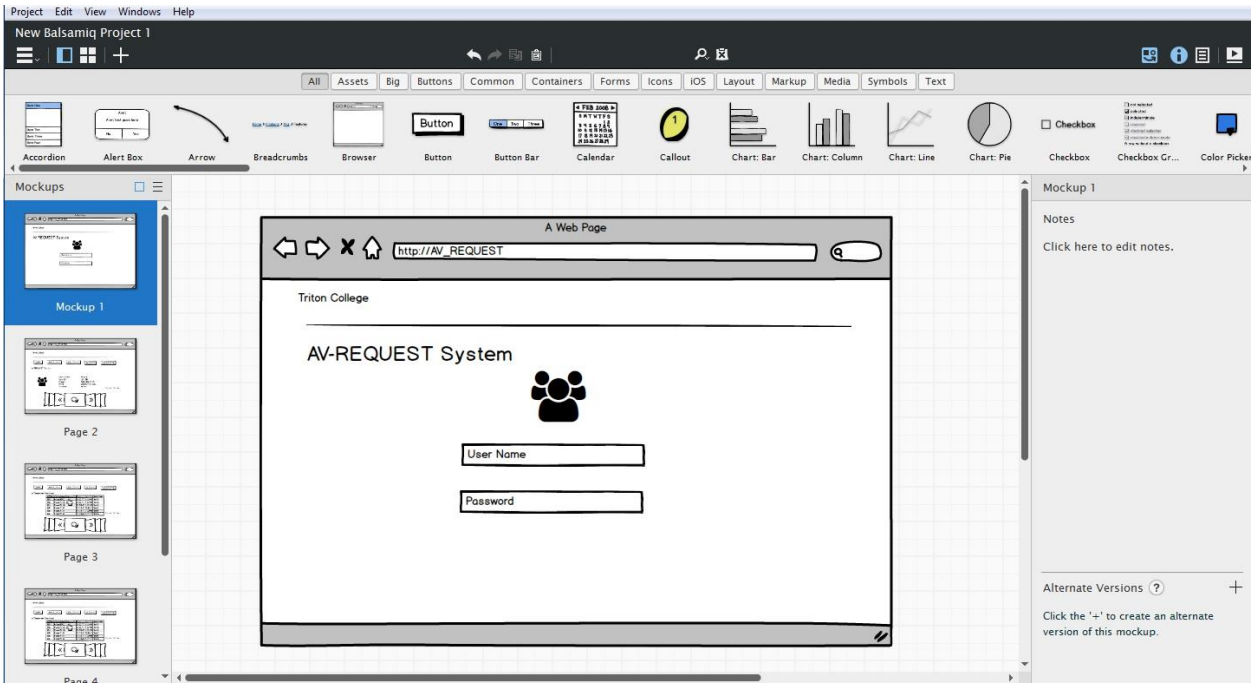




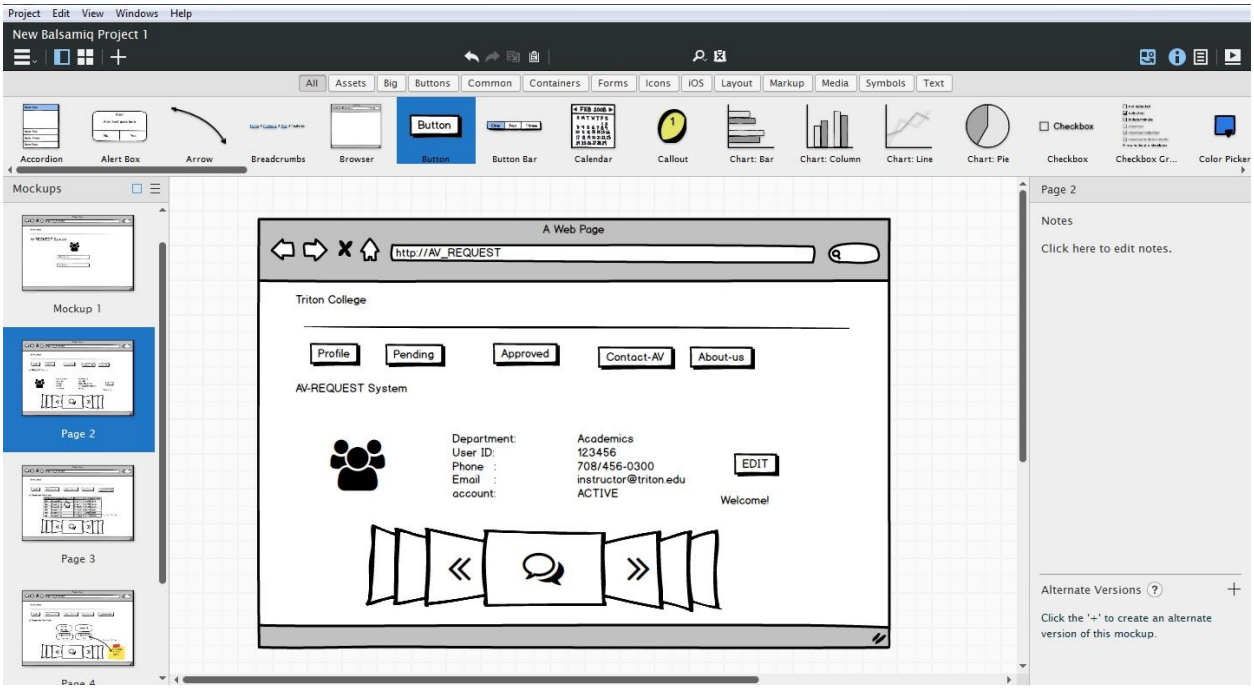


Proposal Overview – UI Design and Prototype

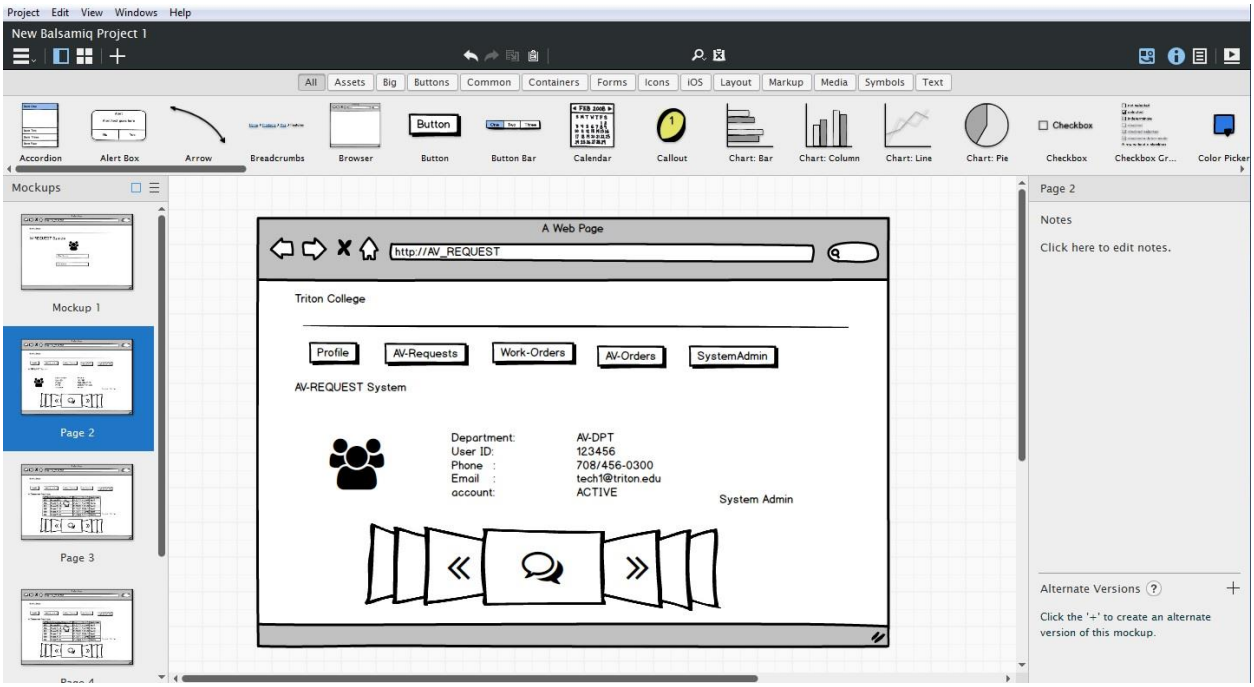
Login page, this will be the entry point by both, AV-department techs and faculty.



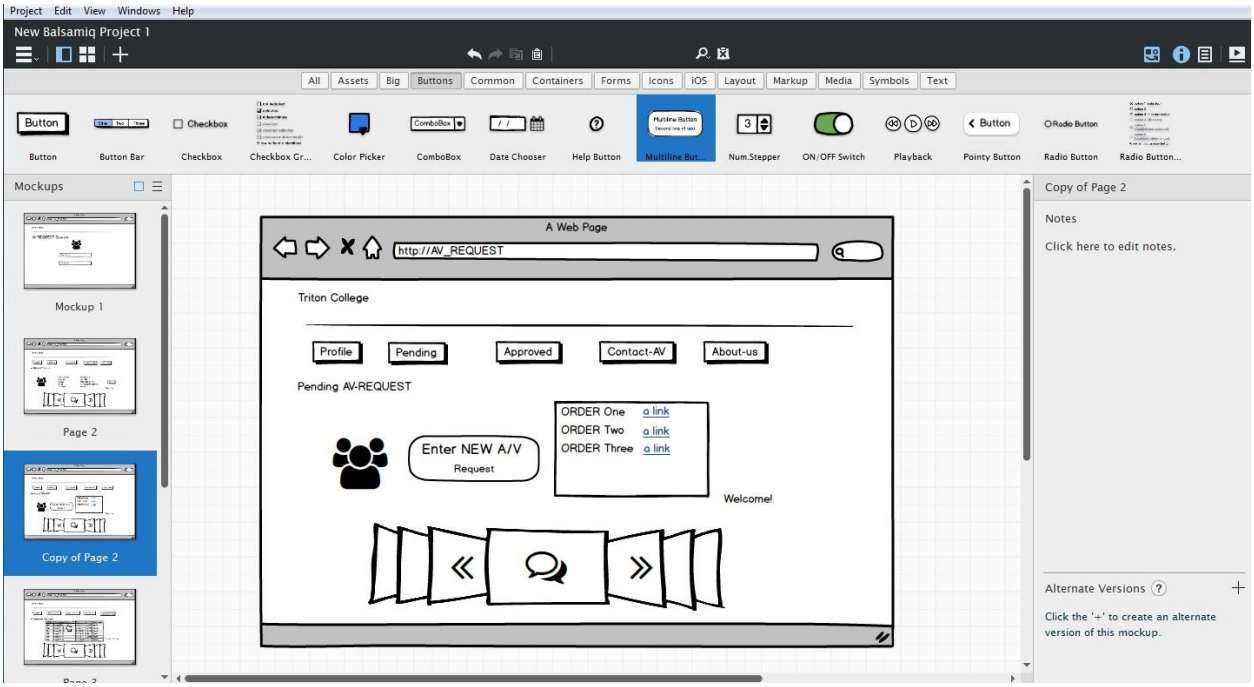
For faculty the navigation page will consist of four components, profile, pending (requests), approved (requests), contact AV, and about us.



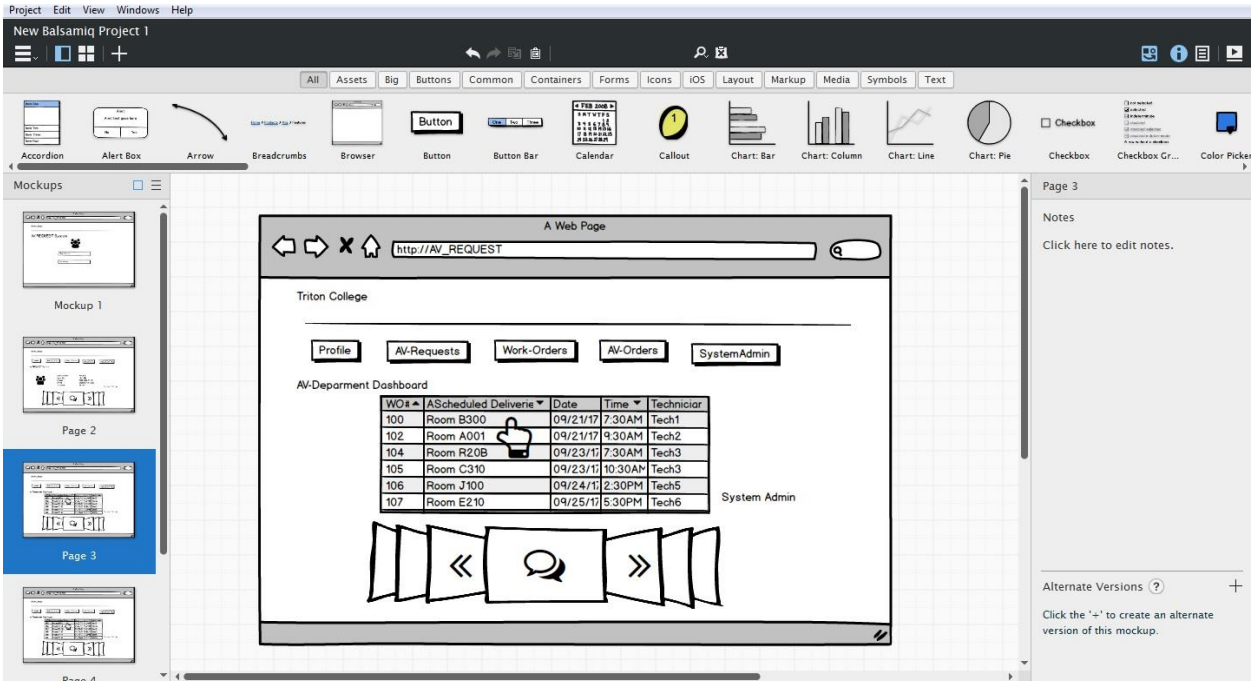
For AV-techs and Admin users the navigation page will consist of four components, profile, AV-Requests (approval), Work Orders (work for the day), AV-Orders (dashboard), and SystemAdmin.



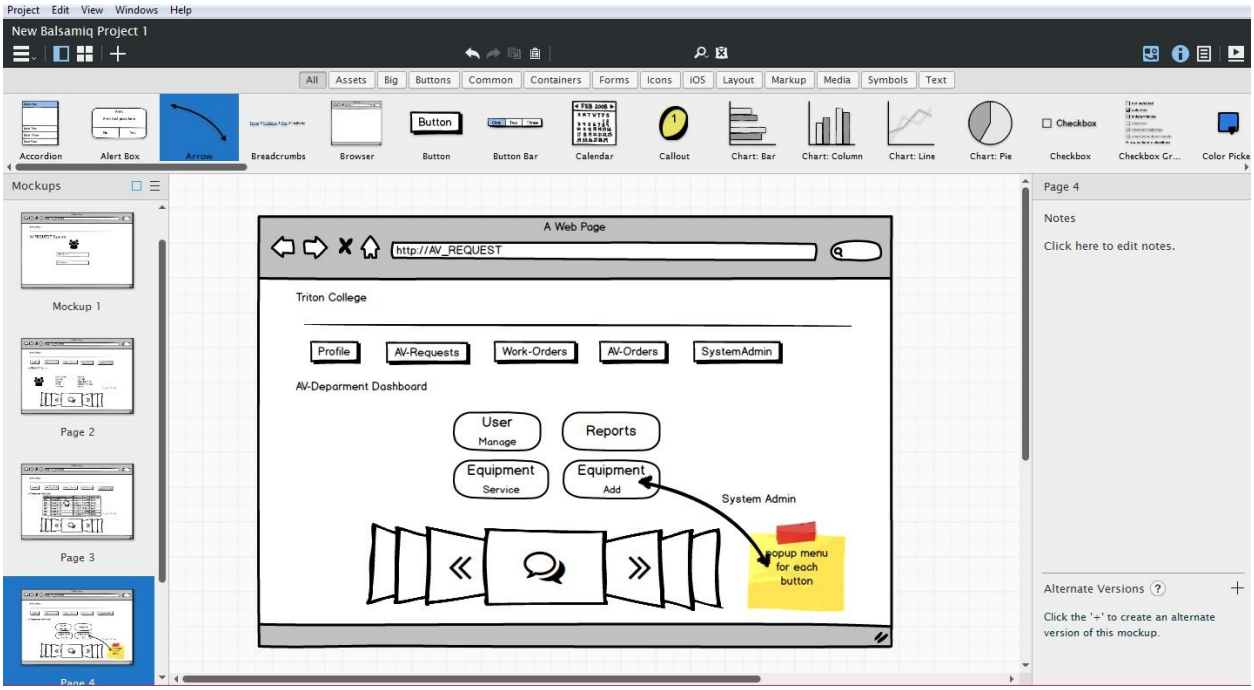
Faculty dashboard shows current orders and can enter a new A/V request.



AV-department dashboard displays all Work orders with details, as an interactive board



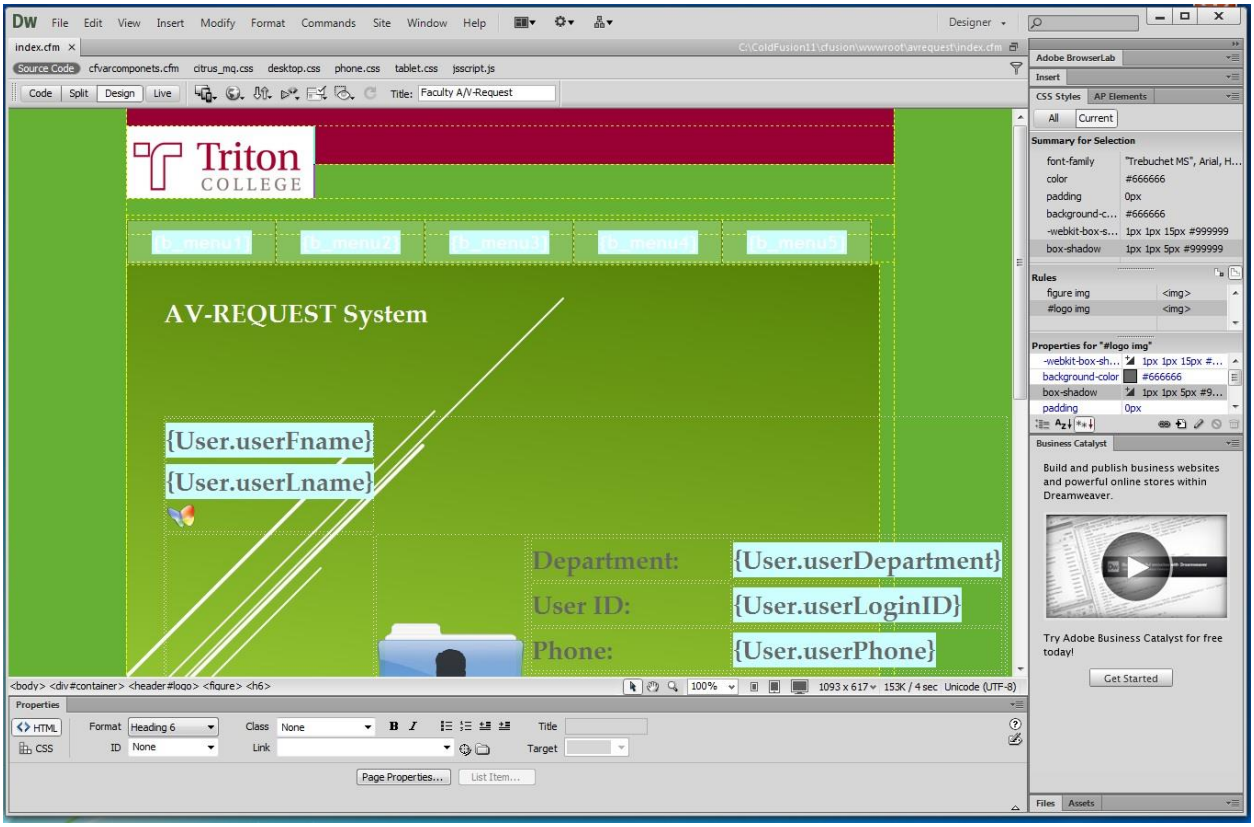
SystemAdmin board allows management of components for user, reports, equipment inventory and service.



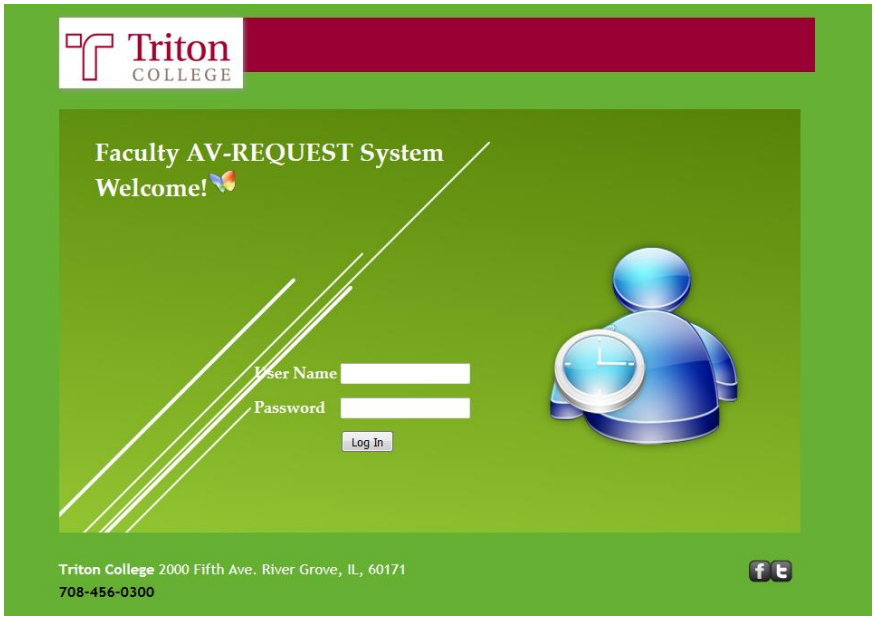
Proposal Overview – UI Design | HTML5 and CSS (Cascading Style Sheets)

The color schema and designed is based on the following palate for tablet, desktop and phone.

Login page design using Dreamweaver



Login Page



Overall structure page layout

Faculty/Staff

Manager

AV-Tech

Software Requirements

No.	Software	Description
1	SQL Server R2 Standard	As the database platform
2	Windows Server 2012 R2	Web-Server Box
3	Web-Server Enabled	As part of Web-Server Box
4	Reports Enterprise	Reporting Stat Module
5	Standard SDK Tools	To develop the System

Hardware Requirements

No.	Hardware	Description
1	Processor - Server	Intel® Xeon® series
2	RAM - Server	16GB or higher
3	Storage - Server	1TB or higher
4	Network Enabled	1Gb connection Speed

Usability Evaluation

For the usability evaluation we are choosing the Neison 10 usability heuristics because thi project involves two distinct group of users. We are expecting to see usability differences for each group and unique problems that otherwise we will not be able to evaluate. For the project there are two levels of users, faculty and AV Staff and both groups log into the system. This evaluation will be conducted by two to three people of each group.

Heuristic Evaluation

Website Name: AV Inventory (Ticket) System Website URL: Intranet

Heuristic	Yes | No | N/A	Comments
Visibility of Systems : appearance, ascetics – Users are informed though appropriate feedback		
Primary goal is clear	| |	
Appropriate color scheme	| |	
Consistent design	| |	
Is there a form of feedback for every operation	| |	
Icons and images universally understood	| |	
Match between system and real operations: familiar concepts, information appears in a logical order		
Is there a natural sequence to menu choices	| |	
Prompts correspond to expected action	| |	
Menus are clear, simple and serve a purpose	| |	
Data terminology is familiar to the users	| |	
Do GUI menus are labeled clearly	| |	
User control and freedom: System is forgiving to user errors and supports undo and redo actions with a clear choice for the user to leave unwanted actions.		
Easy for the user to switch between windows	| |	
User are prompted to confirm commands	| |	

User can cancel out operations in progress	| |	
System allows to go back to previous menus	| |	
Consistency and standards: users should not wonder whether different words, icons, images, situations, or actions mean the same thing		
All screens formatted to the same standard	| |	
Windows have titles and icons are labeled	| |	
Fields labels and fields consistent in all forms	| |	
Contains attention techniques such blinks, sounds, and colors use for an obvious meaning	| |	
Heuristic	**Yes | No | N/A**	**Comments**
Error prevention: Help users to recognize and recover from errors, error messages should be expressed in plain language (no error codes)		
Sound is used to signal an error	| |	
Prompts are stated constructively, no implied criticism	| |	
Messages place the user in control	| |	
Errors in data entry fields are highlighted	| |	
Error messages indicate what action to take	| |	
The system prevents error whenever possible	| |	
Recognition rather than recall: Objects and actions should be visible, and instructions easily retrievable whenever appropriate.		
Data and information needed is displayed at each step in the transaction	| |	
Visual distinction between choose one or many	| |	
Field labels and fields are appropriately spaced	| |	

Optional data entry fields clearly marked	| |	
Function keys arranged in logical groups	| |	
Flexibility and efficiency of use: Allows user to tailor frequent actions, accelerators		
User can select or enter multiple commands at once	| |	
System allows to click directly on data items	| |	
System offers “find next” and “find previous”	| |	
Easy to identify location within the site	| |	
Aesthetic and minimalistic design: Dialogs should not compete with other units of information and diminishing their relative visibility		
Each icon stands out from its background	| |	
Group items are properly separated	| |	
Screens have short, simple and clear titles	| |	
Field labels are brief, familiar and descriptive	| |	
Pop-up and pull-down menus are well-defined	| |	
Help and documentation: system should be easy to use without documentation, any provided help should be easy to search with concrete steps		
The instructions follow the sequence of actions	| |	
Provides memory aids such as breadcrumbs	| |	
Information is easy to find	| |	
Information is accurate, complete and understandable.	| |	

We are confident that the stakeholders of this system will be satisfied with the results the system will provide.

Sincerely,

Humberto Espino.