System / Software Requirements Specification (SRS)

Air Access SRS

Version 1.0 approved

Prepared by: Dylan Miles

Company: Aires Accessible

4/20/2021

Revision History

Name	Date	Reason For Changes	Version
Dylan	4/20/2021	Alpha	1.0

1. Introduction

1.1 Purpose

The United States Air Force is in need of a configuration management software that can store submitted files that are tracked via version control and be accessed on demand of the user. This software should arrange users into personalized teams with assigned groups of users that shall be notified by other's submissions to encourage collaboration and unified practice.

1.2 Scope

Product Name

Air Access

Overview

This software product will manage and store uploaded files from many departments in the Air Force and unify the documentation process of each submission. This program will allow for a unified practice of where to store and access necessary documents. This software will also allow for the creation of teams of users that will have the ability to be notified when another specified team has submitted to the system.

Goals

One primary goal of this product is to simplify the uploading and accessing processes currently in place when working with different types of files. Currently, the organization has many different storage locations for files with different documentation to come with them. This goal is primarily set to unify the process of file storage, access, and documentation to a unified practice across the organization to allow for a more efficient and clearly defined business process. Another goal this product has is to encourage collaboration and communication between different teams of users that require access to certain files. This program will allow for the creation of teams, comprised of unique groups of users, that will have the ability to be notified when another team has submitted or made changes to a file in the system. This will allow for up-to-date notifications to keep everyone on the team in the loop of the processes happening around them. This software product will enhance the current practices in place and expedite daily business practices to increase productivity and collaboration for all its users.

Out of Scope

To be addressed in future releases:

- The program will be able to hold only a limited number of critical files upon release
- The product will not replace every saved location of a file yet
- A documentation process would need to be implemented depending on the file type
- Will not be able to store every file the organization has on file
- The program will encapsulate every security procedure required in the military

1.3 Product overview

1.3.1 Product perspective

Context / Data Flow Level 0 Diagram
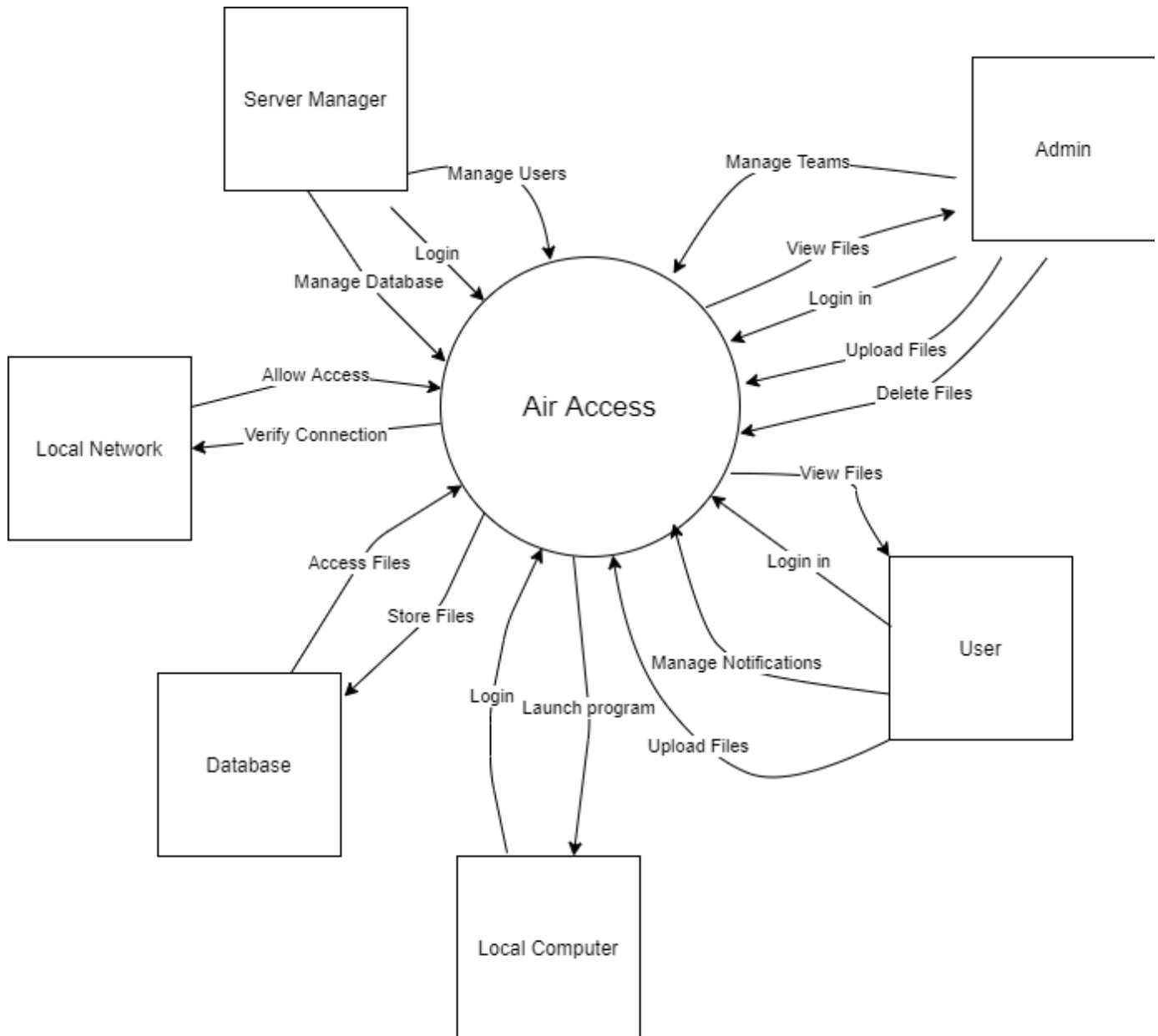
1.3.2 Product functions

Functions

- Upload a file - the user shall upload files to the software from their device
- System login - the user shall be prompted to enter their authorized credentials into the system
- Create Teams - the administrative users shall create teams from different user's identification
- Enable notifications - the user shall be given the option to turn on + off notifications upon another team's submissions
- Delete a file - the user shall delete files in the system given the proper authentication to do so
- Save a file - the user shall save files from the system to their device to allow for annotations/updates to be re-uploaded

1.3.3 User characteristics

User Characteristics

- Functional - software shall be user friendly containing clear instruction on how to access and save to the system

- Collaborative - the upgraded system will allow for the creation and use of assigned teams that will have the ability to be notified upon submission of another team.
- Simple - users will be able to access the program to view requested files after verifying through prior security checks when logging into their computer.

1.3.4 Limitations

Key	Summary	Description	Labels
SS-17	Username must match with the corresponding information of the user on file		Limitation
SS-16	The system must follow and surpass all security protocols in place when referencing this important data.		Limitation
SS-15	The system must only be accessible on the local network of the base		Limitation
SS-14	Admin users must be able to view, add, and remove user's to their corresponding team		Limitation
SS-13	Software must be accessible on both Windows + MAC systems		Limitation
SS-12	Password must contain at least 8 characters, an upper case letter, a number, and a special character.		Limitation

6 issues

1.4 Definitions

American Airmen - a member of the U.S. Air Force

2. References

Hannah Andrews - Airforce HR/Recruiting Specialist

https://www.airforce.com/

https://www.tinker.af.mil/

https://acqnotes.com/acqnote/careerfields/air-force-software-policy

ISO/IEC/IEEE 29148-2018

SWEBOK V3.0

3. Specific requirements

3.1 User Stories

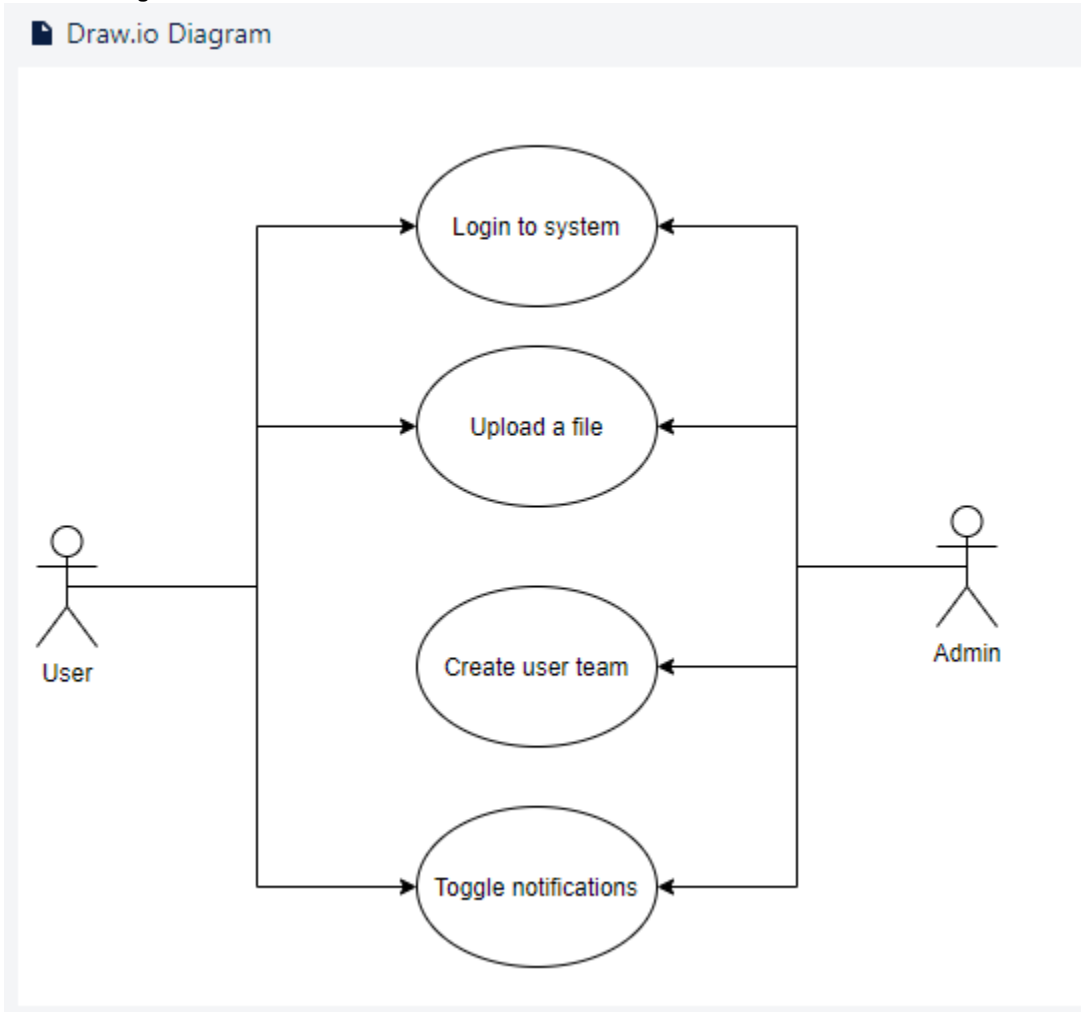| Key	Summary	Description	T	P
SS-11	4 - As a software engineer, I want to allow for the ability for users to form groups, so that they will eventually be notified upon another's submission.		🔖	⬆
SS-10	1 - As a software engineer, I want to create a universal login page for program access, so that each user is uniquely identified with corresponding permissions.		🔖	⬆
SS-9	5- As a team member, I want to be notified when another team submitted a file, so that our organization works in unison.		🔖	⬆
SS-8	2 - As a software engineer, I want to create a large database, so that I can save and manage files submitted by the end user		🔖	⬆
SS-7	3 - As a team member, I want to be able to save all my files in one location, so that I can uniformly document and access files when needed.		🔖	⬆

5 issues

Use Case List

Primary Actor	Use Cases
Team Member User	1001, 1002, 1004
Admin User	1001, 1002, 1003, 1004

Use Case Diagram

Use Cases

UC ID and Name:	1001 - File Upload
Description:	As a team member, I want to be able to save all my files in one location, so that I can uniformly document and access files when needed.
Preconditions:	1. User's login identity has been verified and authenticated prior to system access. 2. User's account has been granted the proper conditions
Postconditions:	1. The file has been successfully uploaded and stored into the system's database securely 2. The file will then be viewable and accessible to certain users upon completion
Normal Flow:	1. User will login to their device successfully with a document or file ready to be saved 2. The user will save the document with 'Save as' then select Air Access for their storage location 3. The file will then be encrypted and stored to the database of the system
Alternative Flows:	If a file is corrupt, the upload may not be successful and will not allow for the complete upload of the file.

Business Rules:				
	Key	**Summary**	**T**	**P**
	SS-6	Plan and develop life cycle software support.	⚠	↑
	SS-5	Ensure the developer team uses effective software development processes.	⚠	↑
	SS-4	Identify software-related strengths + weaknesses	⚠	↑
	SS-3	Manage computer systems and software specific risks	⚠	↑
	SS-2	Estimate software development and integration at a high level.	⚠	↑
	5 issues			

UC ID and Name:	1002 - Login to system
Description:	As a user of the system, I want to sign in securily to a universal login page for program access, so that each user is uniquely identified + granted with corresponding permissions.
Preconditions:	1. Once signed into local computer, the user will be prompted by an Air Access sign page 2. The user will then enter their assigned username and created password
Postconditions:	1. After clicking 'sign in' the system will process the given input data from the user and compare with the saved info on file 2. Access denied - incorrect information was input during the sign process 3. Access granted - the sign in page will close and the user will be able to access the program
Normal Flow:	1. User will login to their device and be prompted to sign in to Air Access 2. User will be prompted to input username + password then sign in 3. Upon successful verification, login page will close and access will be approved to the system
Alternative Flows:	User must provide the correct login information otherwise they will have to proceed through the password reset system if information is lost.

Business Rules:				
	Key	**Summary**	**T**	**P**
	SS-6	Plan and develop life cycle software support.	⚠	↑
	SS-5	Ensure the developer team uses effective software development processes.	⚠	↑
	SS-4	Identify software-related strengths + weaknesses	⚠	↑
	SS-3	Manage computer systems and software specific risks	⚠	↑
	SS-2	Estimate software development and integration at a high level.	⚠	↑
	5 issues			

UC ID and Name:	1003 - Create user team
Description:	As a team lead/user admin, I want to be able to create teams of users based on their departement and add selected users to the group.
Preconditions:	1. After filling out the sign in page with correct authorization, the admin will have the option to manage teams 2. After selecting the settings they will then be able to select their corresponding team and manage the users by adding or removing them
Postconditions:	1. After successfully adding a user they shall then have access to the corresponding documents 2. Users in the teams will also then be apart of the notifications for that team
Normal Flow:	1. Admin user logs into the system, they will then have the option to manage teams 2. When clicking manage teams, the user will be able to select their team and see the users in the team 3. They will be able to manage the team by adding or removing select users 4. The system will update as soon as possible to the corresponding users
Alternative Flows:	The user must have assigned admin permissions previously set to be able to create a team.

Business Rules:				
	Key	**Summary**	**T**	**P**
	SS-6	Plan and develop life cycle software support.	⚠	↑
	SS-5	Ensure the developer team uses effective software development processes.	⚠	↑
	SS-4	Identify software-related strengths + weaknesses	⚠	↑
	SS-3	Manage computer systems and software specific risks	⚠	↑
	SS-2	Estimate software development and integration at a high level.	⚠	↑
	5 issues			

UC ID and Name:	1004 - Toggle Notifications
Description:	As a team member, I want to be notified when another team submitted a file, so that our organization works in unison.
Preconditions:	1. After logging into the system, the user will have the option to select notifications 2. They will be able to enable for upload of listed teams that correspond to their set permissions
Postconditions:	1. After enabling notifications of another team, they will then recieve desktop notifications upon an upload of another departement 2. Users will be able to manage their team notifications by going into the settings of Air Access and selecting which teams are enabled
Normal Flow:	1. After loginning into the system, the user will be able to mange their settings and notifications 2. Inside their notifications, the user will be able to select which team's notifications will be enabled for their account 3. They will check the select teams on or off to enable or disable the notifications for the team
Alternative Flows:	The user's permissions must be set prior to logging into the system to have the assigned access to be able to enable notifications for that departement

Business Rules:				
	Key	**Summary**	**T**	**P**
	SS-5	Ensure the developer team uses effective software development processes.	⚠	↑
	SS-4	Identify software-related strengths + weaknesses	⚠	↑
	SS-3	Manage computer systems and software specific risks	⚠	↑
	SS-2	Estimate software development and integration at a high level.	⚠	↑
	4 issues			

3.2 Set of Requirements

Key	Summary	Description	T	Linked Issues	P	Labels
SS-42	The software shall exclusively be accessible within the local network of the branch's organization.		📄	SS-28 , SS-7	↑	Nonfunctional
SS-41	The software shall be fully compatible with the Windows 10 operating system.		📄	SS-29	↑	Nonfunctional
SS-40	When an admin user creates a folder for a team, the folder will then become accessible to the rest of the team within 1 minute of creation.		📄	SS-9	↑	Functional
SS-39	When an admin user adds a user to a team, the user will then have the team added to their assigned teams.		📄	SS-9	↑	Functional
SS-38	When a user enables email notifications, the software shall send the user a email to the user explaining the change that has happened.		📄	SS-9	↑	Functional
SS-37	When a user enables desktop notifications, the software shall send the user a notification to the desktop of the user upon a new submission from the team.		📄	SS-9	↑	Functional
SS-36	The software shall display the corresponding assigned teams in each user's notification center.		📄	SS-9	↑	Functional

Key	Summary		Links		T
SS-35	The software shall be updated each day with the active directory of current employees for admins to access necessary staff.	📄	SS-9	↑	Function al
SS-34	The software shall open the notification center upon the user's selection of the corresponding icon within 3 seconds.	📄	SS-9	↓	Nonfuncti onal
SS-33	The software shall backup the entire database to a secondary storage database every 24 hours to protect critical data.	📄	SS-8	↑	Function al
SS-27	The software shall track version control from each upload to track changes made to a file containing the author, the adjustments, and the date and time of when the changes were made.	📄	SS-8	↑	Function al
SS-26	The system shall enable the user to retrieve a specified file from the database within 10 seconds.	📄	SS-8	↑	Nonfuncti onal
SS-25	Upon login from a user, the software shall display a bell notification icon for the user to access a management page to manage their team notifications.	📄	SS-9	↑	Function al
SS-24	Upon login from an admin user, the system shall display all admin tools in their notification center to allow management access to their corresponding teams.	📄	SS-14 , SS-9	↑	Function al
SS-23	The system shall log the user out of the software after 15 minutes of no keyboard input from the user, returning to the login screen.	📄	SS-11 , SS-16	↓	Function al
SS-22	The software shall display a verification or failure message to the user upon the document upload, depending on if the upload was successful or not.	📄	SS-7	↓	Function al
SS-21	When the user saves a file to Air Access, the software shall store the data within the network database.	📄	SS-7 , S S-8	↑	Function al
SS-20	Upon successful login of the user, the software shall display the stored files corresponding to the user's authorized access organized alphabetically.	📄	SS-7 , S S-8	↑	Function al
SS-19	When the user enters their credentials to the software, the software shall authorize the user and allow access into the Air Access software.	📄	SS-10	↑	Nonfuncti onal
SS-18	When the user logs into their computer, the software shall launch the Air Access login page prompting for username and password within 2 seconds.	📄	SS-10	↑	Function al

20 issues

Requirements Traceability Matrix (RTM)

High-Level Requirements	Functional Requirements
• User Requirements • Business Goals • Business Rules	• User Stories • Functional Requirements

After the creation of certain documentation or other types of files, the user will save their file to the program's database which will then be recorded in the version control.			
	Key	**Summary**	**T**
	SS-40	When an admin user creates a folder for a team, the folder will then become accessible to the rest of the team within 1 minute of creation.	📄
	SS-27	The software shall track version control from each upload to track changes made to a file containing the author, the adjustments, and the date and time of when the changes were made.	📄
	SS-26	The system shall enable the user to retrieve a specified file from the database within 10 seconds.	📄
	SS-22	The software shall display a verification or failure message to the user upon the document upload, depending on if the upload was successful or not.	📄
	SS-21	When the user saves a file to Air Access, the software shall store the data within the network database.	📄
	SS-8	2 - As a software engineer, I want to create a large database, so that I can save and manage files submitted by the end user	🔖
	SS-7	3 - As a team member, I want to be able to save all my files in one location, so that I can uniformly document and access files when needed.	🔖
	7 issues		

The user will have access to review and analyze documents and files previously saved to the system based on permissions to the account.

Key	Summary	T
SS-26	The system shall enable the user to retrieve a specified file from the database within 10 seconds.	▤
SS-21	When the user saves a file to Air Access, the software shall store the data within the network database.	▤
SS-20	Upon successful login of the user, the software shall display the stored files corresponding to the user's authorized access organized alphabetically.	▤
SS-19	When the user enters their credentials to the software, the software shall authorize the user and allow access into the Air Access software.	▤

4 issues

Teams will be assigned from different groups of users based on admin input, which will then have the option to be notified upon other submissions to the program.

Key	Summary	T
SS-39	When an admin user adds a user to a team, the user will then have the team added to their assigned teams.	▤
SS-38	When a user enables email notifications, the software shall send the user a email to the user explaining the change that has happened.	▤
SS-37	When a user enables desktop notifications, the software shall send the user a notification to the desktop of the user upon a new submission from the team.	▤
SS-36	The software shall display the corresponding assigned teams in each user's notification center.	▤
SS-35	The software shall be updated each day with the active directory of current employees for admins to access necessary staff.	▤
SS-34	The software shall open the notification center upon the user's selection of the corresponding icon within 3 seconds.	▤
SS-25	Upon login from a user, the software shall display a bell notification icon for the user to access a management page to manage their team notifications.	▤
SS-24	Upon login from an admin user, the system shall display all admin tools in their notification center to allow management access to their corresponding teams.	▤
SS-11	4 - As a software engineer, I want to allow for the ability for users to form groups, so that they will eventually be notified upon another's submission.	▢
SS-9	5- As a team member, I want to be notified when another team submitted a file, so that our organization works in unison.	▢

10 issues

After reviewing changes from another user, the primary user could then update the file with additional changes and save it once again to the program.

Key	Summary	T
SS-40	When an admin user creates a folder for a team, the folder will then become accessible to the rest of the team within 1 minute of creation.	▤
SS-39	When an admin user adds a user to a team, the user will then have the team added to their assigned teams.	▤
SS-36	The software shall display the corresponding assigned teams in each user's notification center.	▤
SS-21	When the user saves a file to Air Access, the software shall store the data within the network database.	▤
SS-20	Upon successful login of the user, the software shall display the stored files corresponding to the user's authorized access organized alphabetically.	▤
SS-19	When the user enters their credentials to the software, the software shall authorize the user and allow access into the Air Access software.	▤

6 issues

Identify the software-related strengths, weaknesses, experience, process capability, development capacity, and past performance for all developer team members with significant software development responsibilities.

Key	Summary	T
SS-47	The software must abide by all of the organization's security guidelines properly and efficiently.	🔒
SS-46	The software maintenance must be completed outside of main operating hours	🔒
SS-44	The software shall be accessible 24 hours a day, 7 days a week.	🔒
SS-42	The software shall exclusively be accessible within the local network of the branch's organization.	📄
SS-41	The software shall be fully compatible with the Windows 10 operating system.	📄
SS-36	The software shall display the corresponding assigned teams in each user's notification center.	📄
SS-35	The software shall be updated each day with the active directory of current employees for admins to access necessary staff.	📄
SS-33	The software shall backup the entire database to a secondary storage database every 24 hours to protect critical data.	📄

8 issues

Plan and develop life cycle software support capabilities and support operations.

Key	Summary	T
SS-47	The software must abide by all of the organization's security guidelines properly and efficiently.	🔒
SS-46	The software maintenance must be completed outside of main operating hours	🔒
SS-45	The files of the system shall be sorted based on ascending and descending order depending on which tab was selected.	🔒
SS-44	The software shall be accessible 24 hours a day, 7 days a week.	🔒
SS-43	The software will primarily be formatted for Windows desktop computer use.	🔒
SS-32	The system shall be extremely accessible to the user so that they may access their files within 10 seconds of launch during crucial situations.	🔒
SS-31	The software's version control shall be stored and accessible to permitted users upon a possible loss of data.	🔒
SS-30	The program shall securely authorize it's users upon each use of the system with a valid username and password.	🔒
SS-29	The software must be compatible with the Windows 10 operating system.	🔒
SS-28	The software will only be accessible on the local network of the branch's organization.	🔒

10 issues

This system will allow for the creation of unique teams of users that will have the ability to be notified upon other's submissions.

Key	Summary	T
SS-40	When an admin user creates a folder for a team, the folder will then become accessible to the rest of the team within 1 minute of creation.	▤
SS-39	When an admin user adds a user to a team, the user will then have the team added to their assigned teams.	▤
SS-38	When a user enables email notifications, the software shall send the user a email to the user explaining the change that has happened.	▤
SS-37	When a user enables desktop notifications, the software shall send the user a notification to the desktop of the user upon a new submission from the team.	▤
SS-36	The software shall display the corresponding assigned teams in each user's notification center.	▤
SS-35	The software shall be updated each day with the active directory of current employees for admins to access necessary staff.	▤
SS-34	The software shall open the notification center upon the user's selection of the corresponding icon within 3 seconds.	▤
SS-25	Upon login from a user, the software shall display a bell notification icon for the user to access a management page to manage their team notifications.	▤
SS-24	Upon login from an admin user, the system shall display all admin tools in their notification center to allow management access to their corresponding teams.	▤

9 issues

4. Verification

Key	Summary	Verification Approach
SS-42	The software shall exclusively be accessible within the local network of the branch's organization.	Analysis
SS-41	The software shall be fully compatible with the Windows 10 operating system.	Analysis
SS-40	When an admin user creates a folder for a team, the folder will then become accessible to the rest of the team within 1 minute of creation.	Test
SS-39	When an admin user adds a user to a team, the user will then have the team added to their assigned teams.	Test
SS-38	When a user enables email notifications, the software shall send the user a email to the user explaining the change that has happened.	Demonstration
SS-37	When a user enables desktop notifications, the software shall send the user a notification to the desktop of the user upon a new submission from the team.	Demonstration
SS-36	The software shall display the corresponding assigned teams in each user's notification center.	Inspection
SS-35	The software shall be updated each day with the active directory of current employees for admins to access necessary staff.	Analysis
SS-34	The software shall open the notification center upon the user's selection of the corresponding icon within 3 seconds.	Demonstration
SS-33	The software shall backup the entire database to a secondary storage database every 24 hours to protect critical data.	Analysis
SS-27	The software shall track version control from each upload to track changes made to a file containing the author, the adjustments, and the date and time of when the changes were made.	Test
SS-26	The system shall enable the user to retrieve a specified file from the database within 10 seconds.	Demonstration
SS-25	Upon login from a user, the software shall display a bell notification icon for the user to access a management page to manage their team notifications.	Demonstration
SS-24	Upon login from an admin user, the system shall display all admin tools in their notification center to allow management access to their corresponding teams.	Test
SS-23	The system shall log the user out of the software after 15 minutes of no keyboard input from the user, returning to the login	Inspection

	screen.	
SS-22	The software shall display a verification or failure message to the user upon the document upload, depending on if the upload was successful or not.	Inspection
SS-21	When the user saves a file to Air Access, the software shall store the data within the network database.	Analysis
SS-20	Upon successful login of the user, the software shall display the stored files corresponding to the user's authorized access organized alphabetically.	Test
SS-19	When the user enters their credentials to the software, the software shall authorize the user and allow access into the Air Access software.	Test
SS-18	When the user logs into their computer, the software shall launch the Air Access login page prompting for username and password within 2 seconds.	Demonstration

20 issues

5. Appendices

5.1 Assumptions and dependencies

Assumptions

We may assume that…

- Users will have the required login information + security clearance
- Each file required will be able to be accessible from the program
- The software will be extremely almost completely secure
- The program will be able to store all of the data
- The version control will be managed properly
- Teams of users are pre-determined by management

5.2 Acronyms and abbreviations

CAC - Common access card

U.S. - United States

AA - Air Access

AFB - Air Force Base