Team 17 – NATS Interactive Video Walls

Amanda Goodridge, Brandon Baugh, Will Schottler

September 20, 2019

Software Requirements Specification

# Introduction

The introduction of the Software Requirements Specification (SRS) provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations, references and an overview of the SRS. The aim of this document is to gather and analyze while giving an in-depth insight of the complete **interactive video walls in NATS** by defining the problem statement in detail. Nevertheless, it also concentrates on the capabilities required by stakeholders and their needs while defining high-level product features. The detailed requirements of the **interactive video walls** are provided in this document.

## Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come to define the system and its requirements with respect to the IU Southeast faculty and student’s needs. Also, we shall predict and sort out how we hope this product will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered, but may be discarded as the product develops.

## Scope

Primarily, the scope pertains to the interactive video walls that will go into making the two NATS buildings more modern. It focuses on IU Southeast, the students and the administration who will help us reach our product goals.

This SRS is also aimed at specifying requirements of software to be developed but can also be applied to assist in the selection of in-house and commercial software products. The standards can be used to create software requirements specifications directly or can be used as a model for defining an organization or project specific standards.

## Overview

The remaining sections of this document provide a general description, including characteristics of the users of this project, the product's hardware and software, and the functional and data requirements of the product.

# Overall Description

The proposed system will be video walls to replace the old 70s looking publications displays in Life Science and Physical Science. The system will be a large touch screen or a combination of multiple screens that work together to allow students the ability to interact with the information that is displayed on the screens at the moment. For instance, there could be a rotating display of faculty and staff. If a student touches one of the faculty or staff members, their bio and a blurb regarding their recent research would appear on screen. Then the board could rotate to the disciplines and a student could touch one of those. Once a student touches a disciple, the screen(s) would show more information about that discipline, career opportunities, types of degrees offered, etc. If the system ends up being a video wall with multiple screens instead of just one huge screen, the project would be how to get these screens functioning properly together and how to display the information amongst multiple boards.

## Product Perspective

The ultimate goal of the proposed system is to modernize the NATS halls and bring them up to date with the 21st century. Our team would need to creatively problem solve through cost estimating an entire package from hardware and possibly software. In addition, we would need to train the administration of this project and other faculty on how to use the system and update the software.

### System Interfaces

The system interface will be how our video wall screens and computer system “talk” to each other. We will need a video wall system, a computer system, and a power system. Each of these systems will have to “talk” through the system interface in order to function properly.

### User Interfaces

This may be one of the most important aspects of our project because it is what IU Southeast students, faculty, administration, and visitors will be interacting with. To put it simply, user interface design is important because it can make or break your customer base. It creates fewer problems, increases user involvement, and perfects functionality. To close, it also creates a strong link between your customers and your product. Our products user interface must be appealing and give off a “wow” factor that draws people’s attention as they walk into the buildings.

In addition, there is a screen layout user interface constraint and that is the size of the design cannot exceed the size of the screen. We also must have the user interface easy to use and navigation links that appear on every screen with a “help” button for first time users. The color scheme of the interface must portray the IU brand and the icons, buttons, labels, fonts, and images all must fit one standard. The UI must be uniform and clean with accommodations for those who are visually impared.

### Hardware Interfaces

A hardware interface is a combination of mechanical, electrical and logical signals that define how a piece of hardware communicates with the system. For our systems hardware interface, we will need network cables to support the amount of data we will be displaying. We will also need an interface that each of these cables can connect to in order to ensure communication between the computer and display boards.

### Software Interfaces

A software interface allows you to access to certain functionality in a system or a library without caring how it is implemented on the system or library side. It also ensures that if someone updates the system or library, the interface will do its best to show that your application still works the same even if there is a completely different specification on the other side. As far as the software interface goes, our system needs to have an operating system, database that consists of our stored information, and an interactive front-end design/development portion. The communication between the database and the video wall consists of an operation concerning both reading and modifying the data as needed.

### Communication Interfaces

The communication between the different parts of the system is important since they all depend on one another. However, the way in which communication is achieved is not important for our system and is handled by the underlying operating systems of both the computer and display screens.

### Site Adaptation Requirements

For our project, we are working on campus which has many site adaptation requirements. Before these walls, there were billboards and display cases in these locations. This means that the area is not wired to support a new technological system. Now, since we are adding technology to this area, we will need a larger power source, proper networking, and the ability to move some of the old cables that are currently in the way. For example, there is currently a thermostat inhibiting us to hang the video walls and in order for us to proceed, we will need to have this relocated.

# Specific Requirements

## Functional requirements

### *User* should be able to touch the screen at any point and a reaction of some sort occur to show that the touch was registered

### *User should be able to go back to a previous page*

### *User should be able to navigate easily through the UI*

### Video walls should be able to change the content or display with one single touch

### *Administrators should have the ability to preset the content that will be available to students*

### Administrators should be given the ability to restrict what can be done on the video wall

### *Students should have the ability to interact with the video wall at any time of day*

### Video walls should display important event information, local news, class information such as cancelled classes, and helpful student information

### *Students should have the ability to see advising information*

### *Video wall should have many “spider web” effects as you click on a piece of information*

### *Video wall should return to the main screen after a certain amount of time has past without interaction*

* + 1. *Video wall should have the ability to display images of any type and possibly videos*

## Logical Database Requirements

*3.4.1 Data will need to be accessed and edited by multiple people so a way to*

*3.4.2 There will need to be a way to share information among administration*

*3.4.3 The amount of data to be stored must be dynamic as the amount of data stored will fluctuate over time*

*3.4.4 The database must be able to store complex data such as images, sounds, videos, etc.*

## Software System Attributes

### Reliability

As the system provides the right tools for students to gain additional information and knowledge about NATS, the system must also be reliable in its operations by securing data and working properly at any given time.

### Availability

The system must be available at all times for student use.

### Security

Information transmission should be securely transmitted to server without any changes in information.

### Usability

The system should be easy to navigate in the expected way with no delays. In that case the system program reacts accordingly and transverses quickly between states.

### Maintainability

The system should be easy to maintain as all information will be stored on a server and the data located in a database that is updated by the NATS administration.