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CO557
Software Engineering
CW2

Element 2 Submission

2015 – 2016

Software Engineering CW2 2015 2016

Contents

Overview regarding the relevance of quality Documentation

This is a process used by software industry to design develop and test products with its aim to produce high quality software.

The software development process has the following six stages which are

Stage 1:
Planning and Requirement Analysis
Stage 2:
Defining Requirements
Stage 3:
Designing the product architecture
Stage 4:
Building or Developing the Product
Stage 5:
Testing the Product
Stage 6:
Deployment in the Market and Maintenance

Quality documentation should have the following three requirements in order to be very good for further use these are

- Be used to inform team members of project state and status
- Act as an information repository for maintenance
- Management information
- Provide information for users on system use and administration

Quality documentation should also have a cover page which identifies the project author date document type etc. They should also be a few pages that are divided into chapters which should be further divided up into sections and a consistent section and page numbering scheme should be used.

Referenced documents should always have an index.

Writing style

When writing creating documentation within the software lifecycle it is important that you do the following

- Be very precise and define your terms
- If descriptions are complex it in more than one way
- Use effective headings and sub headings
- Do not refer to information by reference number alone

User documents

We have something in the quality documentation called the user documents these are broken down into several different parts these are

- Functional Description

This outlines the services that are going to be provided by the system

- Installation manual

This type of manual describes how to install in a particular environment

- Introductory manual

This will present the user with an informal introduction to the key features of the system

- Reference manual

Provides a detailed description of the system facilities

- Administrators guide

Provides information for system operators managers and administrators

The Structure

Typical software documentation should have the following included.

- Cover page

  This page identifies the project and the most critical parts such as the author date written document and the type etc.

- Reference

  These documents should always have an index

Considering the wider spectrum

These should take into consideration the readers and have included a glossary defining the technical terms user

System documentation

This type of documentation tells developers and maintenance engineers about the product

The importance of quality documentation within the Software development life cycle

Quality documentation is dependent on the software development life cycle as it goes through a series of defined and distinct phases. These are used by software engineers as it will save an organisation's time effort and money. This is why going through a type of certification as there is a lot of stress given on documentation because it shows the importance of the client and processes to individual and organization.

What is becoming a problem these days is the lack of documentation for example user manuals not being written a lot by small companies and they are only major companies writing manuals such as Microsoft who make manuals to understand for any user using the program.

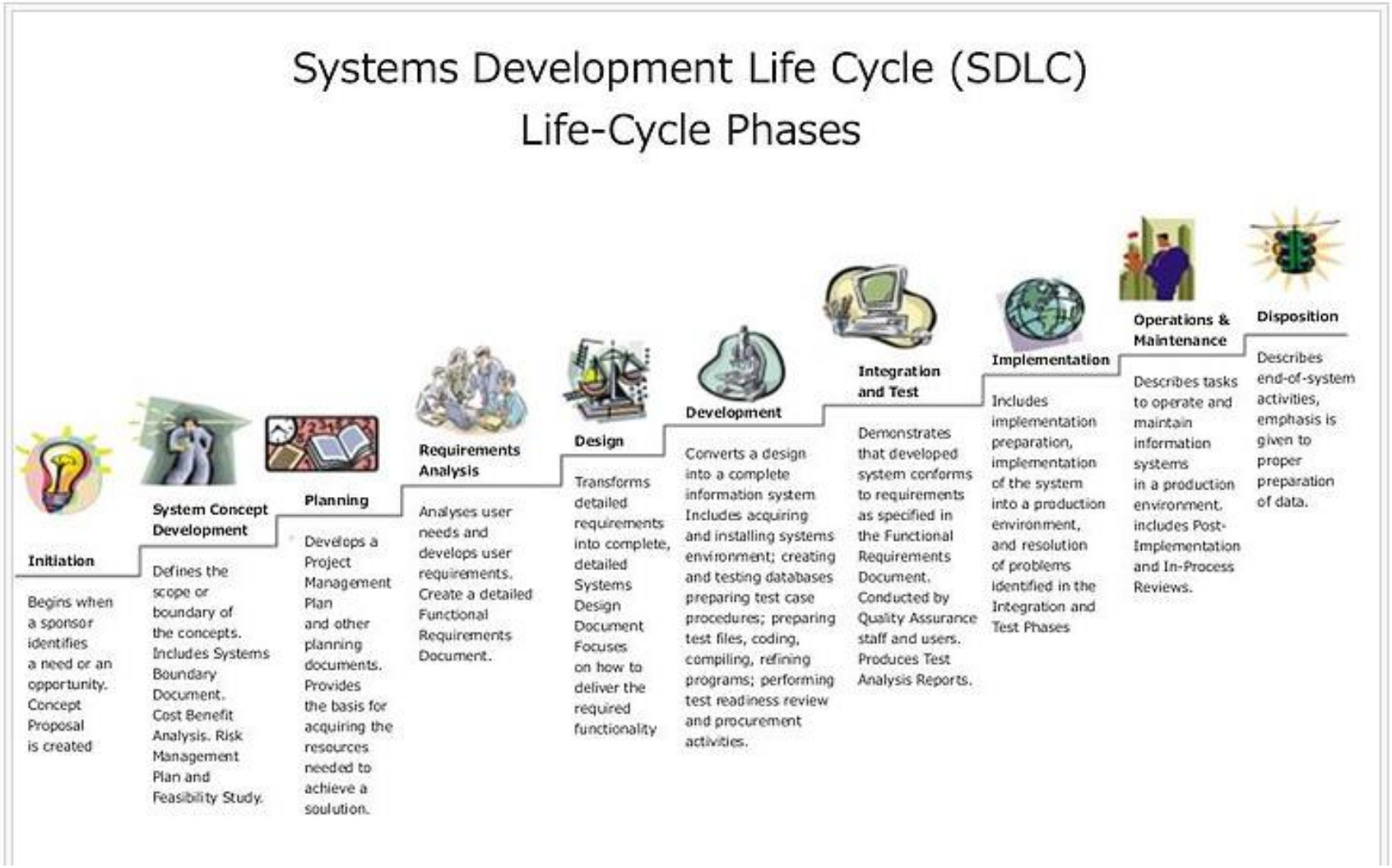
What software developers should do to ensure quality documentation in the software lifecycle which is broken down into the following points these are the following

- Clarify quality objective and methods
- Ensure clarity about tasks and consistency of performance
- Ensure internal co-ordination in client work
- Provide feedback for preventive actions
- Provide feedback for your planning cycle
- Create objective evidence of your quality management system's performance

Summary and Conclusion

Following on from my research here about the part the software development life cycle plays in the part of quality documentation.

I have concluded that Software testing documents will always play an important part in any project that developers undertake this is because it's important to keep things documented whenever possible because documentation will save you buckets of time and money training your software developers up



Here is an detailed overview of all the stages of the software development lifecycle process it gives you an explanation of each stage

FASAM USER MANUAL PRODUCT STANDARD
2015 - 2016

Front Cover Page

1. Page must have 1.5cm margins all round
2. FASAM company name must be printed on
3. Name of writer must be in bold
4. Date must have the auto update field enabled
5. Job role within FASAM must be specified

Table of Contents Page

1. Must be all aligned correctly
2. Must have the title FASAM User Manual table of contents in bold in 16pt Times New Roman font

Main pages – Alarms checking though to Sprinklers Activated screens

1. Headings must be in bold
2. Page numbers must be in footer of x of y form
3. Size 12pt for supporting text of screen explanations
4. Sub Headings must have indentation by 1 tab
5. Sub headings must be in Times new roman font in size 14pt
6. Font must be Times New Roman all the way though
7. Main body text must be 14pt
8. Text boxes explaining symbols must be filled gold
9. Supporting arrows must be black
10. Initializing system message must be orange filled with white text and have caps text
11. Manual must be printed out on white paper

Headers and Footers Formatting

1. Header must have the FASAM User Manual title on all pages
2. Size 12pt font must be used for header
3. Size 12pt font must be used for footer
4. Footer must say FASAM Manual with page numbers in x of y form e.g. Page 1 of 3

Justification for precise decisions in Product standard – E.g. Font choice

I wanted the manual to be written in Times New Roman font as I want it to be a like a formal document somebody would reference to. Size 12pt is really the appropriate size for text as I want to fit a lot of text on some of the pages and if I went any bigger text related to a particular page might span onto a second page this would cause confusion

FASAM USER MANUAL

Written By Robert Collcott

Technical Writer for

FASAM

Date Complied and Completed

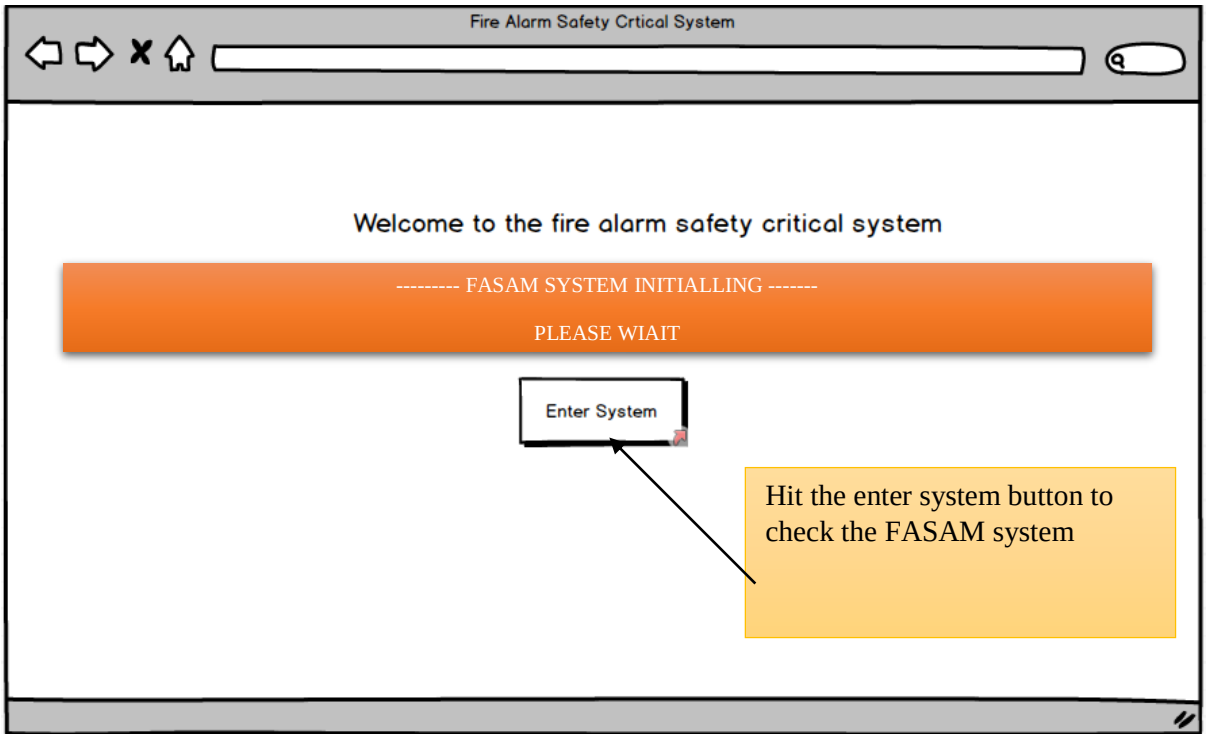
Wednesday, 11 May 2016

Home Central Screen

Home Central screen instructions

- Boot up the fire alarm system
- Wait for the system to initialize

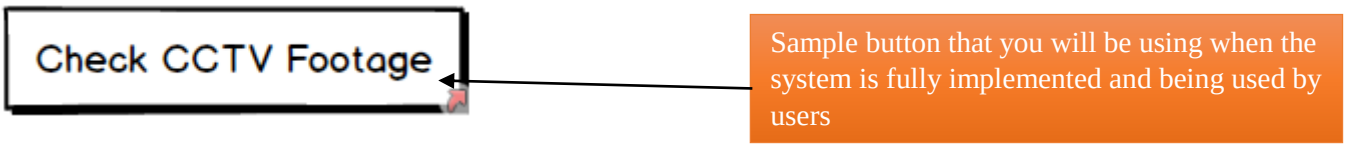
Hit the enter system button to enter FASAM



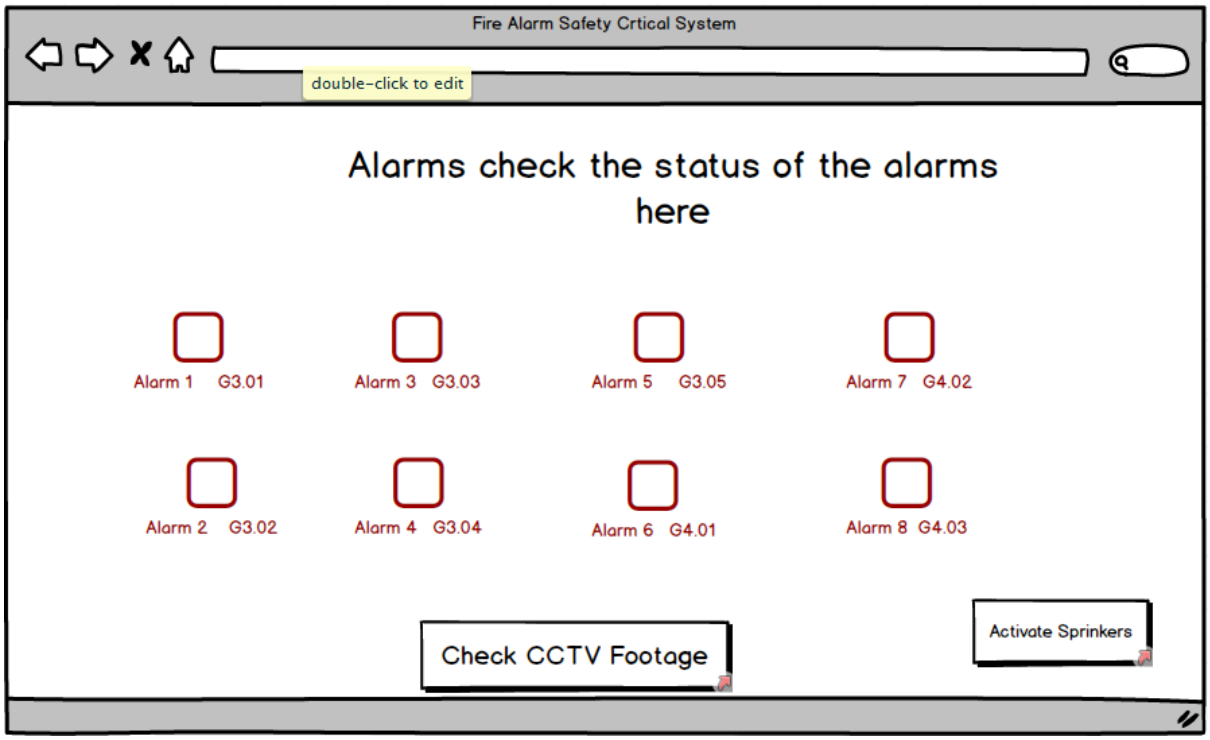
When you see this screen it is very important you click on enter system to log in to it and from there you can proceed to check the following

- Sensors
- Alarms
- CCTV
- Sprinklers
- Building zones

You will be able to navigate between the lot using buttons like the one below as an example



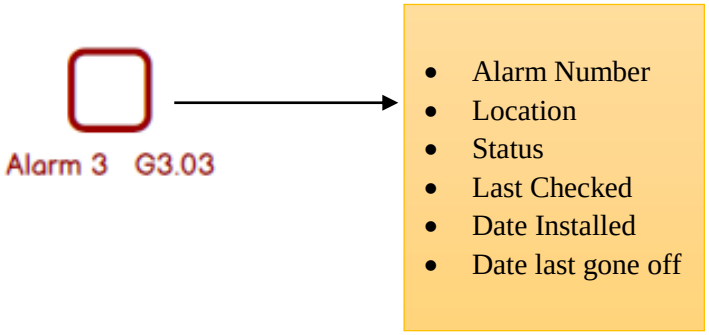
Alarm Check Screen



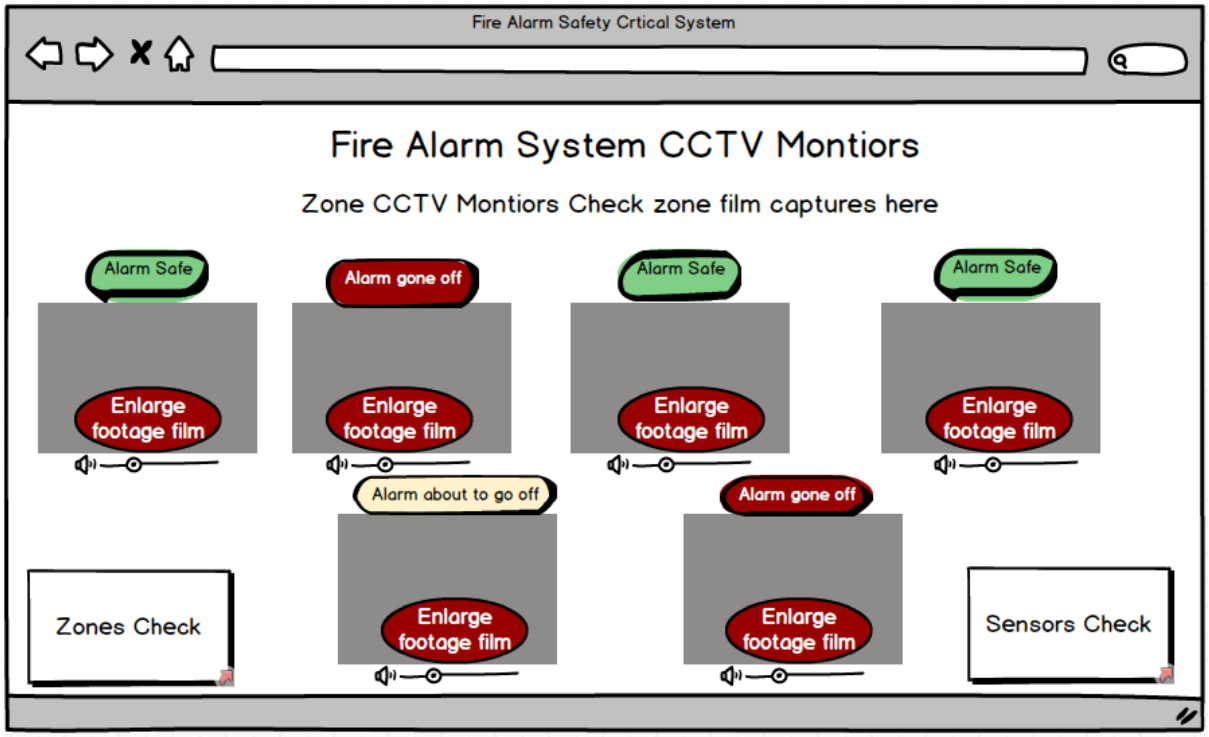
When the system has finished initializing one of the screens you can choose to go to is the alarms status screen this will tell as the user of the system are the alarms

- Safe and stable
- About to go off
- Gone off telling **personnel to evacuate the building now!!!**

If a user clicked on the icon symbol details would pop up such as



CCTV Footage Screen



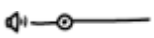
Again only use this screen when the system has finished initializing

- Safe and stable
- About to go off
- Gone off telling **personnel to evacuate the building!!!**

Click on alarm status icons to bring up the status of the alarm

You should also use this screen for checking footage enlarging the film of footage to see in a room more closely, adjusting the viewing of the room footage or increasing or decreasing the volume of the footage

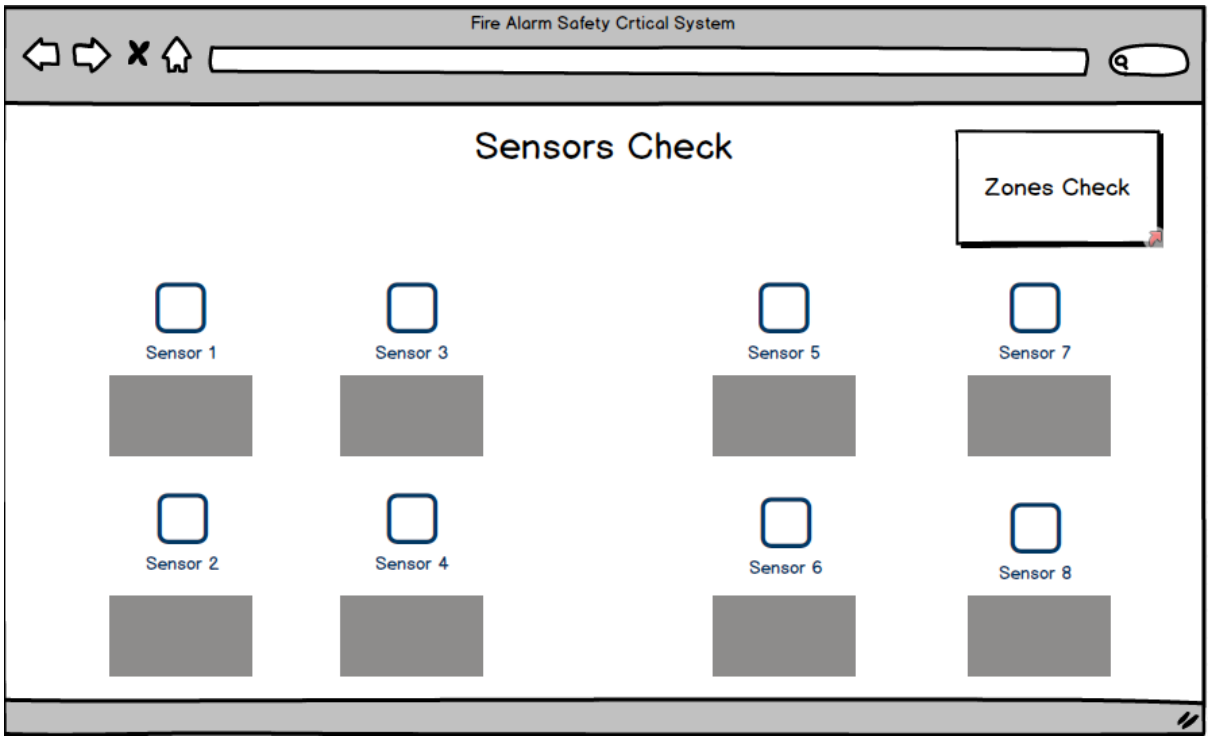
Use the enlarge footage film button to zoom in closer of the room and alarm footage



Use the slider to increase or decrease the volume of the footage films

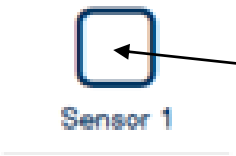
These grey squares represent the symbol for the CCTV screens

Sensors Check Screen

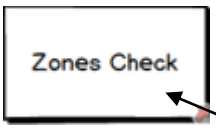


When the system has finished initializing one of the screens you can choose to go to is the sensor status screen this will tell the user of the system are sensors

- Safe and stable
- About to go off
- Gone off telling **personnel to evacuate the building!!!** If a user clicked on the icon symbol details would pop up such as



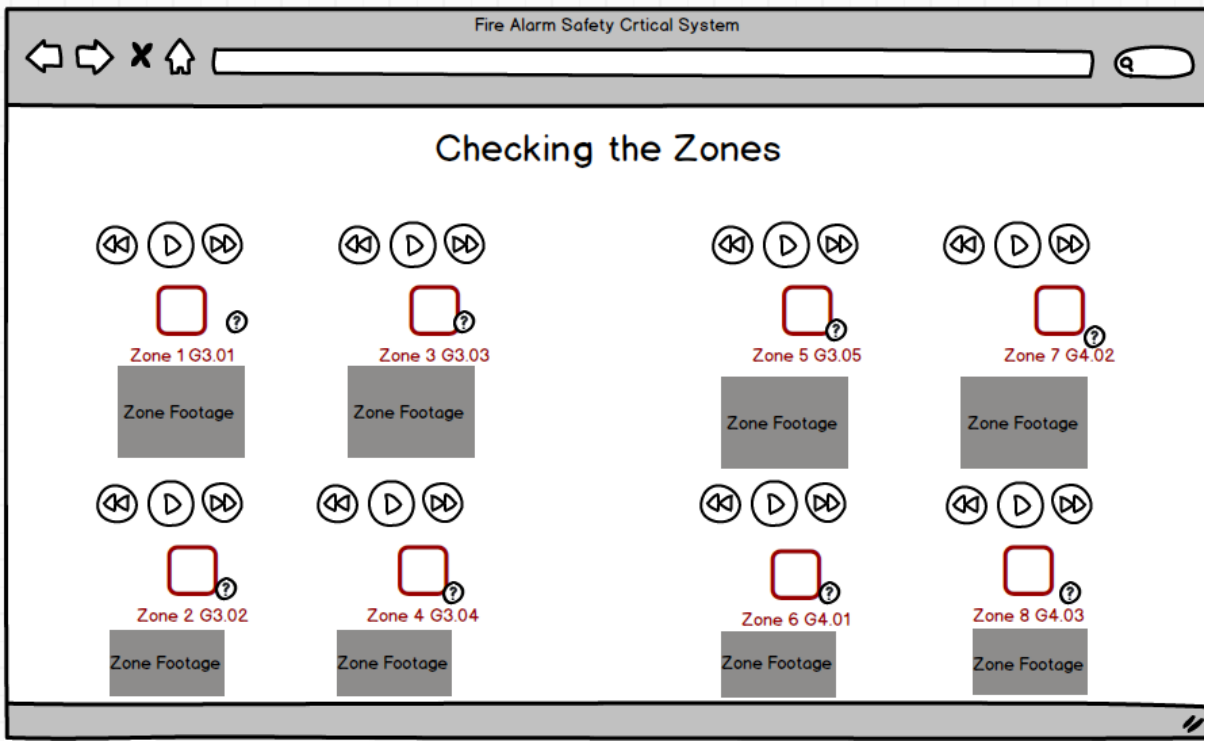
- Sensor Number
- Location
- Status
- Last Checked
- Date Installed
- Date last gone off



The button named Zones check will take you to checking the zones screen there you will be able to check FASAM's zones for fires and status

This black square will represent the sensor's monitor you as the user

Zones Check Screen



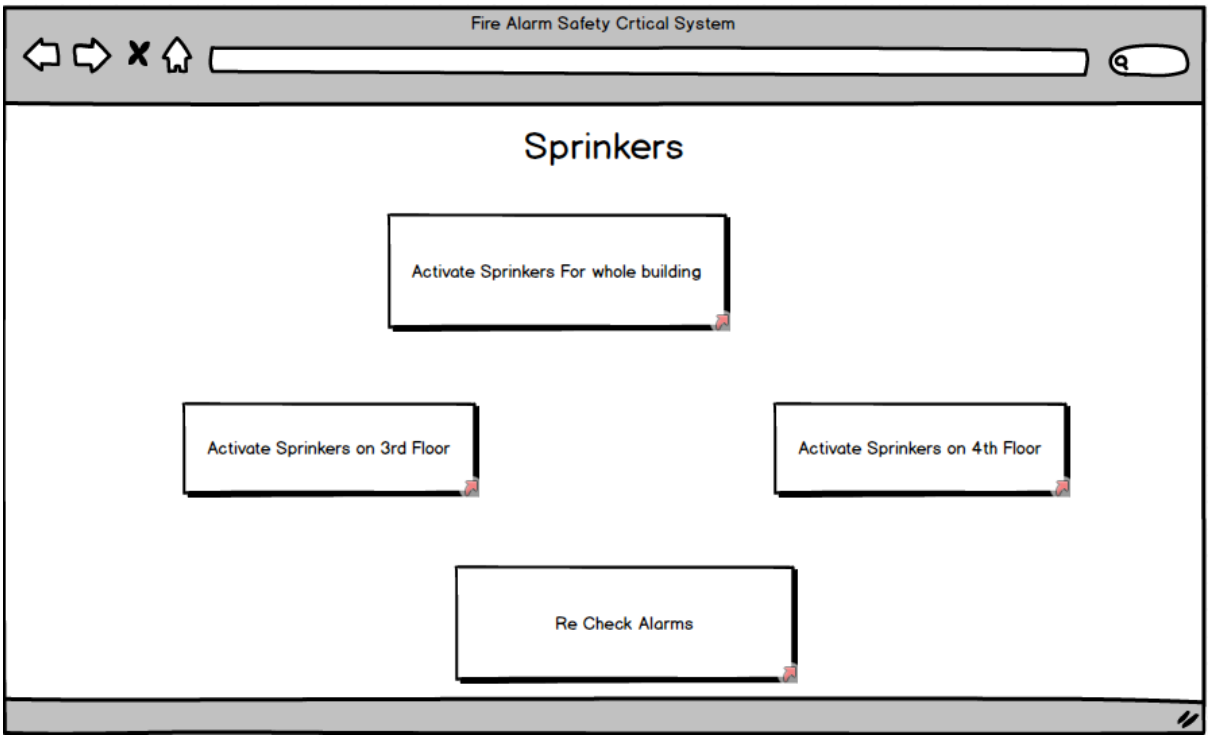
The icon symbol you will see represents a zone in the system

The play back and forward buttons will enable you to track footage

The grey squares represent TV screens of footage you as the user will monitor it

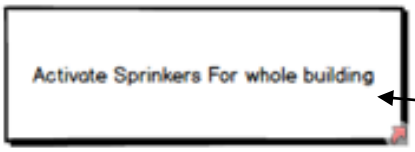
This question mark represents a help icon to give you as the user a bit of guidance on what the screens are for

Sprinklers Central Activation Screen



When you hit this button it will activate the sprinklers to douse down fires on the 3rd floor of FASAM

When you hit this button it will activate the sprinklers to douse down fires on the 4th floor of FASAM



When you hit this button it will activate the sprinklers to douse down fires on the whole FASAM Company building

When you hit this button it will take you back to alarms page to re check the status of them

Sprinklers Check Screen

When you see this screen this will be telling the staff to get out the room quickly as sprinklers are reducing the fire on a floor

This is a message that will tell you to pass down to company staff that sprinklers are activated and get out the room quickly

This is another message that will tell you to pass down to company staff that sprinklers are activated and get out the room quickly

Sprinklers Alert 3rd Floor Screen

This button would take you back to the sprinklers checking screen

Sprinklers Alert 4th Floor Screen

This is another message that will tell you to pass down to company staff that sprinklers are activated and get out the room quickly

Critical Evaluation regarding the importance of Standards in the Quality Assurance Process.

What is Quality?

This means a product should meet and proceed its specification as it says on the tin. However, there can be many problems that relate to this these are

- Tension between the customer's requirements
- Some requirements are difficult to specify
- Specifications are usually incomplete

They are some important concepts to understand in the standards of the quality assurance process in software development which are the following

- Variation control
- Design quality
- Conformance
- Quality control
- Quality assurance

Software Quality Assurance

This is when specified standards are used to define the development criteria that guide the software is engineered

The typical software quality assurance involves the following stages

- Preparing a plan
- Participation in the development process
- An audit
- Ensure that any deviations in software or work products are documented and handled as stated in the documented procedure
- Record evidence of non compliance

These are all very important factors to take into consideration as you as a software engineer will need to start from the beginning of a project to outline the stages of the planning theories then do the development of the project then audit it to make sure it complies with what the customer has set out to do and achieve from the project.

Documentation also plays an important part as well because if a another developer came along to edit the project a bit he would need to know where the faults are and problems lie within the project good documentation should have comments in the code so the developer team know where faults and problems may lie.

When planning a project using software quality assurance process there are several important phases of the plan that are critical these are the following

- Management Section
- Documentation section
- Standards practises and conversations
- Reviews and audits

- Testing
- Problems report and corrective
- Other

The importance of standards

The methods used are accomplished and many are varied

A typical standard example is ISO 9000. This particular standard is used by developers using special enterprise quality management software in software engineering.

Standards are important to have as they would be used to correct typical issues such as the supply chain disaggregation and regulatory compliance within a development project

A typical project could be alongside the supply chain disaggregation and regulatory compliance are vital along with medical device manufacturers.

Another reason why standards are important is they help software engineers keep up with the ongoing increase of size and complexities of a typical software project.

For example a team of 30 people developing a whole new fire alarm security monitoring system they would need to check before hand the complexity of the project and risks of the project as something could go wrong or hold the project up

It is also to be believed that many software businesses today are endeavouring to improve their software development processes to improve the product quality project team productivity and reduce development in the life cycle time. This is important because projects are becoming more and more demanding to finish by the deadline time

Why do we need standards in software development?

These are so important to have as projects get more complex in size as without standards projects where failing miserably as they could not interrelate and integrate their individual failures when work was done in big teams.

To get round why standards are needed in software development many software companies today are endeavouring to improve their software development process such as the drive to improve

The product quality and project team productivity which will reduce lifecycle development cycle times. Software Engineering institute sparked the awareness of

Reference 1 - Importance of Processes and Standards in Software Development

Jain D. (2007). *Importance of Processes and Standards in Software Development.* Available: http://www.codeproject.com/Articles/17121/Importance-of-Processes-and-Standards-in-Software. Last accessed 10th May 2016.

Reference 2 – Why Documentation is Important in Software Testing

Patil T. (2016). Why Documentation is Important in Software Testing. Available: http://www.softwaretestinghelp.com/why-documentation-is-important-in-software-testing/. Last accessed 10th May 2016.

Reference 3 – Software Development life cycle overview

Collcott R. (2016). Systems development life cycle. Available: https://en.wikipedia.org/wiki/Systems_development_life_cycle. Last accessed 10th May 2016.

Reference 4 – scanned presentation of documentation Characteristics and general overview OWN BNU resource

Everett M. (2016). DOCUMENTATION. Available: https://my.bucks.ac.uk/webapps/blackboard/content/listContent.jsp?course_id=_54285_1&content_id=_670266_1. Last accessed 3rd May 2016.

Reference 5 – Overview of Quality assurance

Collcott R. (2016). Quality assurance. Available: https://en.wikipedia.org/wiki/Quality_assurance. Last accessed 10th May 2016.

Reference 6 – Fancy Picture with descriptions of each phase of the software development life cycle

Collcott R. (2016). Systems development life cycle. Available: https://en.wikipedia.org/wiki/Systems_development_life_cycle. Last accessed 10th May 2016.