BAE Systems - Automated Decision Making Application

Group 56 - Computing & Engineering Design Challenge 2019 : George Loy, Muhammad Yusuf, Phan Nguyen, Ben Hull

Design Brief

A non-conformance in engineering design is when the production of parts or assemblies are not made in accordance to the requirements set. Such non-conformances require manual appraisal before a solution is found to rectify or accept the issue is given, in order to allow the continuation of production. The task is to design an application that provides instant technically approved solutions to previously known non-conformances, reducing manual input.

Customer Identification and Requirements

The application that we have produced is specifically designed for BAE systems to help improve their non-conformance problem and to help increase the efficiency of the company by improving the speed at which the corrective actions are applied to the non-conformance. However, this same sort of system is not limited to just BAE systems and it isn't only limited to the engineering industry for example the following company has developed similar software in a completely different field.

The following is a list of what we deem as key customer requirements for our product:

- Non-conformance identified
- Database of non-conformances with corrective actions
- Included part identification number
- Defect types stated, covering all possible instances
- Return solution to include option for "manual process"
- Ability to insert manual corrective actions
- Portable and "off the shelf" usability
- Failsafe protection and prevention of incorrect decision making, utilising machine learning.
- Security and Cyber resilience.

Similar Products

Intelex Technologies Inc. develops Web and various application software solutions. Their web-based management system allows users to follow-up on CAPA from reported non-conformances. The CAPA requirements meets common standards for ISO 9001, ISO 14001, OHSAS 18001.

Experian is a consumer credit reporting agency. They collect information of people and businesses. Their application, Experian One, allows users to quickly see credit, fraud and internal data of a customer in a comprehensive view. Customisation of the application allows for intelligent and personalised automation.

Design Specification

Feature	Description	Priority Rating 1 (low) - 5 (high)
Simple and friendly interface	Simple accessibility to allow for ease of use with application. It should be simple and straight to the point.	5
Built from F# for backend and incorporates Vue.JS for front end	Future proof, allowing for machine learning to identify non-conformities and apply corrective solutions.	4
Ability to incorporate additional corrective solutions and non-conformities	Allow for manual input of non-conformities and corrective solutions, resulting in a growing database.	5
Usable on website or portable device	Off the shelf usability will allow for a more streamline experience. Application should be usable anywhere around workspace. Non-confined.	4
Hosted on AWS	Hosted on AWS for reliability and ease of use. Will use Amazon RDS Aurora for database. Listed pricing at 53$/ month. Affordable and reliable.	4
Must comply with copyright regulations and transparency.	Code used should be original or Open Source. Should be editable by customers if needed.	4

Concept Generation