Roadmapp: A Data Visualization of Application Lifecycles
Project Definition Document

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VERSION HISTORY

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<td>Draft written using formal requirements given by Dave Blue</td>
<td>A'Shaun Thomas</td>
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<td>Added functional and nonfunctional requirements, along with an actual name for the application. Also removed risks section, as there are none at the moment.</td>
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APPROVALS

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<tr>
<td>TBA</td>
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1. **PURPOSE**

To create a web application that allows users to visualize a roadmap of when applications will be introduced and/or retired.

2. **PROBLEM/OPPORTUNITY**

There are a large number of systems and applications within Boeing Finance Systems. Organizing this information is useful in ensuring there’s a concise understanding of what and when systems and applications are being used.

3. **PROJECT GOAL**

To create a web application that serves useful and effective at organizing the data given.

4. **PROJECT OBJECTIVES**

- Create Normalized E/R model to be approved by point of contact
- Decide on data visualization chart configurations useful
- Develop intuitive layout design
- Create components library
- Optimize data retrieval methods/UML
- Ensure browser cross compatibility, XSS/SQL injection safety, and A11Y compliance

5. **PROJECT SCOPE**

- Stand up a database to store the data. (PostgreSQL)
- Decide the best table structures for the provided elements. (E/R Diagram + DB Normalization)
- Evaluate visualization tools and technologies and work with Boeing team to make selection. (TTD)
- Develop a prototype to best visual the information. (SEAN stack)
- Provide an interface to update the data (add systems and timelines for retirements and additions). (Angular 5)
- The view should be filterable and sortable with an intuitive interface. (Angular 5)

6. **KEY STAKEHOLDERS**

Paris Forest, Dave Blue, David Coveney
7. **OUTCOMES/SUCCESS CRITERIA**

Accepted by key stakeholders as completing aforementioned criteria

8. **ASSUMPTIONS AND CONSTRAINTS**

8.1 **Assumptions**
- That the web application will only be available to Boeing employees

8.2 **Constraints**
- Must sign NDA
- Must make Github Repository private

9. **FUNCTIONAL REQUIREMENTS**

FR-0: Ability to log into system as administrator

Summary: Allow users the ability to login to the system and be granted an assigned role

Rationale: Some users will only need to see the data, while some users will need the ability to make updates and edits on the data. Keeping an encapsulation on those powers through a login ensures the integrity of the data.

FR-1: Ability to view applications roadmap

Summary: The core functionality of the application. Roadmap should pull data from the database and generate a roadmap dynamically that accurately reflects this data.

Rationale: This allows the user to visualize application lifecycles in an intuitive interface

Specifications: A user shall see a timeline with the timeframe of the current year, starting with the current month upon loading the application.

FR-2: Ability to change timeline scope

Summary: This allows the user to change the field of vision of the roadmap to suit his needs.

Rationale: It may be necessary to go back or forward in time to check application retirement or launch dates.

Specifications: A user should be able to set the bounds of the scope and the viewport should reflect those changes
FR-3: Ability to update data

Summary: Data modification must be possible for privileged users.

Rationale: It’s necessary to input and/or delete data because more applications will be made, some old applications may be able to be deleted, and a new software’s release date.

Specifications: A user with administrative role must be able to create, update, add, and delete data from the database.

FR-4: Ability to sort through viewport information

Summary: All users should have the ability to sort through and filter data by name and/or purpose.

Rationale: Users may want to look for a specific application or find applications that do similar functionality.

Specifications: A user must be able to sort and filter through viewport data by name or by description.

10. NON-FUNCTIONAL REQUIREMENTS

NFR-0: Viewport should accurately reflect data

Summary: Viewport should list all possible data in an accurate matter chronologically

Rationale: All tuples must be accounted for this to work most effectively

Specifications: All data in designated table must be accurately portrayed.

NFR-1: Enforced Referential Integrity

Summary: When updating the designated table, all necessary triggers and constraints must be in place to ensure database doesn’t crash.

Rationale: Modifying data must have limitations to ensure that the application doesn’t run into unhandled errors during run-time.

Specifications: At no point should modifying the data make the database crash. Generate tests for acceptable data beforehand.

NFR-2: Efficient sorting

Summary: For any amount of records the sorting method used should be the most efficient possible.

Rationale: The viewport could hold from zero to a very large number of data objects, so sorting through the data most efficiently depends on the case.

Specifications: Check the number of elements to be sorted and then make the decision on an algorithm.
NFR-3: A11Y Compliant Web Components

Summary: Web components should pass the A11Y/WCAG standards

Rationale: Boeing is an equal opportunity employer and as such, may have employees who could have any type of ailment.

Specifications: Components must pass the W3 A11Y tests.

11. **TECHNICAL REQUIREMENTS**

TR-0: Must accept .CSV input

Summary: Application must be able to accept, parse, and store .csv files for batch inserts.

Rationale: Inserting several tuples/tables at a time saves time.

Specification: Application must accept .CSV files in an agreed format and parse the input into a series of table insertions, given they pass the referential integrity constraints.

TR-1: Application must be secure

Summary: Ensure web application is secure and protected from common exploits.

Rationale: Even though it is assumed to be an internal tool, making secure software allows for protection against accidents and of course, more nefarious motivations.

Specification: Ensure web application is not susceptible to OWASP top ten security risks.

12. **USE CASES**

- Employee at Boeing wants to see when an app is retired or when it will be used
- Employee would like to update information on an application
- Employee would like to delete an application
- Employee would like to insert another application

13. **DATA ELEMENTS**

Will be provided a .csv of all the necessary data.

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Date: 

Approved by: 

Approver Signature: 

Mentor Name: 

Mentor Signature: