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For

CardinalHealth™

prepared by

REAL STONE SOLUTION

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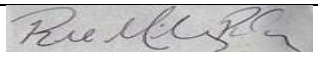
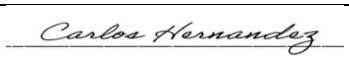
Ruben Mendez Rodriguez	120980	COE	
Carlos Hernandez Cabrera	99747	COE	
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1. Introduction

1.1. Project Overview

The project discussed in this document will be three dashboards that will be implemented with Power BI for Cardinal Health company. The dashboards will show metrics that will help the agile team of Cardinal Health to analyze their projects.

This document will cover the following topics:

- Project Organization
- Managerial Process
- Technical Process
- Work Packages, Schedule, and Budget

1.2. Project Deliverables

The following section will provide a table that enumerates the various project deliverables that will be handed in once the project is completed. The table contains this information.

Deliverable	Recipient	Format
Software Requirements Specification	Real Stone Solution	Digital
Software Design Description	Real Stone Solution	Digital
Software Testing Document	Real Stone Solution	Digital
Software Project Management Plan	Real Stone Solution	Digital
Project Health	Real Stone Solution	Digital
Iteration Review	Real Stone Solution	Digital
Sprint Overview	Real Stone Solution	Digital
Poster	Real Stone Solution	Digital
Progress Report	Real Stone Solution	Digital
User Manual	Real Stone Solution	Digital
Presentation	Real Stone Solution	Digital

Table 1 Project Deliverables

1.3. Evolution of the Software Management Plan Project

This document is subject to changes. The constraints, dependencies, and assumptions for the project, as well as the time and resources planning for each phase, can change during the development of the project. If the information used in the document created is changed, that will be added to a new version of the SPMP with a new version number. All version numbers with a decimal number other than zero are unofficial versions. To request any major changes, the requirements are to be discussed internally by the Real Stone Solution team. The team will vote on whether to implement the requested changes or not since in agile methodology, requirements can be changed in the process of development whilst in discussion with the client. Once a decision has been made on the changes to the requirements, the decision will be discussed with the project client before any other decision is taken toward the final design of the project. Said change will be documented in the apportioning of the requirements sections of the SRS document, as well as the corresponding sections of the SPMP, causing the SPMP to evolve into a new version increase. Any major changes to the project will be subject to revision by each member of the team. Changes will also be reflected in other documents as needed. If a version needs to be reverted, please refer to the Google Docs version control system. [1] [2] [3]

1.4. Reference Materials

This subsection provides a complete list of all the documents and sources of information referenced in the SPMP. The references were used for the preparation of this document:

[1] vmware, "What is a virtual machine?," vmware, [Online]. Available: https://www.vmware.com/topics/glossary/content/virtual-machine.html. [Accessed 24 October 2022].

[2] Amazon, "Amazon WorkSpaces FAQs," Amazon, [Online]. Available: https://aws.amazon.com/workspaces/faqs/#:~:text=A%3A%20An%20Amazon%20WorkSpace%20is,like%20using%20a%20traditional%20desktop. [Accessed 24 October 2022].

[3] vmware, "What is VDI (Virtual Desktop Infrastructure)?," vmware, [Online]. Available: https://www.vmware.com/topics/glossary/content/virtual-desktop-infrastructure-vdi.html. [Accessed 24 October 2022].

[4] J. Scardina, "Microsoft Power Bi," TechTarget, December 2022. [Online]. Available: https://www.techtarget.com/searchcontentmanagement/definition/Microsoft-Power-BI. [Accessed 24 October 2022].

[5] Techstreet Enterprise, "IEEE 1058-1998," IEEE, 1998 12 22. [Online]. Available: https://subscriptions.techstreet.com/products/235024. [Accessed 17 8 2022].

[6] Real Stone Solutions, "System Requirements Specifications," 2022.

[7] Asmo, "Agile Methodology: An Overview," Zenkit Blog, 18 3 2018. [Online]. Available: https://zenkit.com/en/blog/agile-methodology-an-overview/. [Accessed 17 08 2022].

[8] nvisia, "The Agile Process 101: Understanding the Benefits of Using Agile Methodology," nvisia, 16 9 2020. [Online]. Available: https://www.nvisia.com/insights/agile-methodology. [Accessed 17 08 2022].

[9] vmware, "What is VDI (Virtual Desktop Infrastructure)?," vmware, [Online]. Available: https://www.vmware.com/topics/glossary/content/virtual-desktop-infrastructure-vdi.html. [Accessed 23 October 2022].

1.5. Definitions and Acronyms

This section will have the definition of the term [1]s that will be used in this document.

Acronyms	Definitions
Power BI	It is a data analysis service aimed at providing interactive visualizations and business intelligence capabilities with an interface simple enough for end users to create their own reports and dashboards.
VM	Virtual Machines
Amazon Workspace	This VDI that where are going to use during this project.
VDI	Virtual desktop infrastructure (VDI) is the hosting of desktop environments on a central server. It is a form of desktop virtualization, as the specific desktop images run within virtual machines (VMs) and are delivered to end clients over a network. Those endpoints may be PCs or other devices, like tablets or thin client terminals.
Agile	Agile is an iterative approach to project management and software development that helps teams deliver value to their customers faster and with fewer headaches. Instead of betting everything on a "big bang" launch, an agile team delivers work in small, but consumable, increments. Requirements, plans, and results are evaluated continuously so teams have a natural mechanism for responding to change quickly.

2. Project Organization

2.1. Process Model

The software development methodology chosen for this project is the Agile Methodology. The Agile process refers to or is based upon a development process where requirements and solutions evolve through collaboration between self-organizing cross-functional teams. This methodology provides quick and unpredictable responses to feedback developers receive on their projects along with opportunities to assess the project's direction during the development cycle. The project is assessed generally by regular meetings. This promotes a disciplined project management process that encourages frequent inspection and adaptation.

Figure 1 Agile methodology (nvisia, 2020)

2.2. Organizational Structure

This organizational structure diagram shows the role of each team member in IT Solutions Inc.:

This Figure is an example of how the structure is going to work, we are going to be rotating as required. The explanation for the roles is in table 2 called responsibility.

Figure 2 Real Stone Solutions Structure

2.3. Organizational Boundaries and Interfaces

The Project Manager will oversee assigning each task to each of the team members once the current sprint has been completed. The cycle should be repeated as many times as necessary, to improve the application as feedback from the users arrives. Each team member must complete the assigned task within the established deadline. The Project Manager will keep a record of attendance at each of the meetings and of all the documentation created by the Real Stone Solution. The Project Manager will be required to set weekly meetings to discuss overall project progress and pending features to be implemented. The Project Auditor will ensure that project documentation meets the required format & standards. The user feedback stage is the process of consultation with the client, regarding approval or new requirements.

2.4. Project Responsibilities

This section highlights each of the project's roles, functions, and activities, as well as their individual responsibilities.

Responsibilities	Description
Agile Master	- Documentation of every process - Plans for the application - Meetings and budget - Client communications - Communication with development team - Productivity intermediary
Web Developer	- Implements UI and UX design from premade UI frameworks - Building of the Frontend for the application - Careful selection of UI framework to be used - Implements database design, creation, and maintenance. - Connects different external interfaces with the application Handles backend logic and communications between servers and databases - Architects and designs website-related exercises for the laboratory - Builds effective deployment strategies for better organization and performance
Technical Consultant	- Implements pertinent software documentation - Supervises the overall application structure
Software Tester	- Implements software tests - Ensures that all components are functioning properly - Ensures quality of software - Handles the attainment of proper application functionality

Table 2 Responsibilities

3. Managerial Process

3.1. Management Objectives and Priorities

Project management objectives and priorities include:

- To ease the navigation, organization, presentation, and understanding of the information of each metric and the data of the Agile group dashboards.
- Improve the organization and simplify the search of the metrics data (Projects, status of them, the budget, etc.) in each dashboard

3.2. Assumptions, Dependencies, and Constraints

This section describes the assumptions, external dependencies, and constraints under which the project will be conducted.

Purposes	Assumptions	Dependencies
Dashboard metrics for the agile group	Will be used to improve visualization and design	It requires a virtual machine and access to the VDI of the company, with this we had access to the database of the company to create the dashboards.

Figure 3 Assumptions, Dependencies and Constraints

3.3. Risk Management

Events	Criticality	Contingency Plan
Loss of Internet connection	High	If a team member lost the internet connection, they would go to the college to work in the library
Blackout	High	Depending on how big the blackout is on the island, the team member would try to go to college or to one of the members' houses that have a generator.
One of the members abandoned or went "missing" for more than 2 days.	High	An extraordinary meeting will be scheduled to evaluate the situation of the parting team member and what that person has accomplished so far, as well as reassign pending tasks and roles to the remaining team members.
No access to the VDI	Medium	The team will schedule a meeting with the IT department of Cardinal. Health to fix the problem.
The client does not approve the project	Low	The team has the plan to be working on showing the project to the company frequently and in an extreme case we can divide the team.

Figure 4 Risk Management

3.4. Monitoring and Controlling Mechanisms

The following sections will provide mechanisms that will be used to monitor the status of all the activities and tasks that were programmed to ensure that these will be completed on time and successfully.

3.4.1. Weekly Group Meetings

Weekly meeting: Ordinary meetings that will be programmed, in which the whole development team will discuss all activities and tasks assigned to them, their status, which are still pending, and how much time is expected for their completion.

3.4.2. Weekly Editing by All Team Members

Microsoft Teams: During the first stage of the project development, since it mostly concentrates on the documentation required for the creation of the application, all the documents will be stored and shared through Google Drive, a cloud storage and file backup webpage. This will allow every team member to see what has been completed, as well as work together throughout the whole process. Additionally, all the presentations and individual logs will be stored here. The project would be stored and worked on in the VDI of Cardinal.

Excel: The spreadsheet software will be utilized for the development of a Gant chart for the entire development process.

Power BI: The software where all the metrics of the agile group will be organized and customized for the ease of navigation of the dashboards.

Virtual machine: The machine where Power BI will run for us to make the changes and the implementation of the dashboards.

3.5. Staffing Plan

This section lists the personnel required to conduct each phase of the project. It is expected that each team member will have the technical knowledge and skills needed to develop the required dashboards. Additional technical information will be obtained through online tutorials, documentation, courses, and books.

Roles	Level of Education	Skills	Period
Project Manager	Bachelor's degree in computer Engineering or Computer Science	Knowledge on: • Power BI	From: 11/14/2022 To: 02/13/2023
Technical Consultant	Bachelor's degree in computer Engineering or Computer Science	Knowledge on: • Power BI	From: 11/14/2022 To: 02/13/2023
Web Developer	Bachelor's degree in computer Engineering or Computer Science	Knowledge on: • HTML • PHP • Python • C++ • SQL • CSS • JavaScript • Java	From: 11/14/2022 To: 02/13/2023
Software Tester	Bachelor's degree in computer Engineering or Computer Science	Knowledge on: • Power BI	From: 11/14/2022 To: 02/13/2023

Table 3 Staff Plan

4. Technical Process

4.1. Methods, Tools, and Techniques

The development of the dashboards will strictly follow the following methodology described below:

Agile Methodology

The Agile methodology is a way of managing a project by dividing it into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage.

Once work begins, teams go through a process of planning, executing, and evaluating. Ongoing collaboration is vital, both with team members and project stakeholders.

Agile Testing

Agile Testing is a testing practice that follows the rules and principles of agile software development.

- First, the project is analyzed and tested to ensure that the solution fits the purpose.
- Test case scenarios are then created based on the analyzed requirements and designs.
- After carrying out the tests, we analyze the results and report defects and observations.
- To then interact with stakeholders to ensure that the desired solution is obtained.
- After interacting with the stakeholders, the team needs to return to the first step to fix if the stakeholders are not happy with the project or continue with the next project.

4.2. Software Documentation

The documents required for the software are described below.

Document	Description	Format
SRS	Software Requirements Specifications. This document describes all the requirements and descriptions of the system based on the client's scope.	IEEE 830-1998
SDD	Software Design Description. This document is a representation of the software system that is used for communicating design information to the stakeholders.	IEEE 1016-1998
STD	Software Test Documentation. In this document, communication can be facilitated between the customer and supplier with a common definition for the test plan. It also describes the test design specification, test cases and test procedures to be used to perform qualification testing of the system.	IEEE 829-1998
SPMP	Software Project Management Plan. This document is used for managing the software project by describing technical and managerial processes required to satisfy the project requirements for the client.	IEEE 1058-1998

Team Logbook: This document includes all team meetings, equipment and material used, and the date of future meetings.

Presentations: Created by the team to explain the main structure and functions of the project.

Configuration management

The purpose of configuration management is to manage, organize, and track all changes to documents and any other files in the dashboard development process. By implementing this management system, productivity is increased with a minimum of errors in development. In this system, version controls will be used so that, in the event of any problem, it will be possible to return to a previous version of the documents or dashboards. Change control will be used to ensure quality and quality and consistency when changes are made.

Verification and Validation

The objective of this process is to determine whether the system meets the requirements of the Software Requirement Specifications (SRS) document and whether the product satisfies its intended functions and user needs. This process will be performed in the testing phase of the SRS document process and will include analysis, evaluation, review, inspection, assessment, and testing of the product. The customer will perform the Verification and Validation process in conjunction with Real Stone Solution by testing the system to ensure that it performs as expected.

Quality Assurance (QA)

The client will ensure that all performance and quality standards are being met as well as make sure that the dashboard complies with SRS protocols and standards. The Real Stone Solution Development Team will ensure the quality of the software prior to its release to make sure it meets the correct standards for our clients, the team would have met weekly and work/test every dashboard and present updates to the client. With the update to the client, we would ensure we would create the dashboard perfect for their needs by using Power BI.

5. Work Packages, Schedule, and Budget

5.1. Work Packages

This section specifies the work packages, identifies the dependency relationships between them, states the resource requirements, and provides the allocation of the budget and resource package. This will help to provide the best project schedule.

Documentation (August 8, 2022 – February 13, 2013): This consists of all the documents created for the project. These documents describe all the requirements for the design, testing, and production. A list of documents illustrates the order of project activities:

a. Software Requirements Specification (SRS)
b. Software Project Management Plan (SPMP)
c. Software Design Description (SDD)
d. Software Test Document (STD)

Design (August 8, 2022 – October 28, 2022): The design package will be completed when the SRS and the SPMP are completed. This package will be used by the Software Design Description document to begin the project.

Development (November 14, 2022 - February 13, 2013): The development package consists of the code of the services and continuing tasks from the documentation package. The services to code are the following:

a. Dashboards
    1. Project Health

2. Iteration Review
3. Sprint Overview

Testing (November 14, 2022 - February 13, 2013): The testing package provides testing, fixing, and optimizing all services. This process would be executed every time we add a new feature and every time we work on the dashboard, but not live to the public. Testing will be done continuously for all the dashboards.

Deployment Package (February 16, 2023): The deployment package consists of presenting to the client the system up and running. We are going to start production on this package when the other packages are 100% completed. The deployment package will be completed upon deployment of the services to the client and presentation of the final aspect of the application.

5.2. Dependencies

This Dashboard relies heavily on improving the display of metrics, a data/wi-fi connection, and an operating system, running a virtual machine. In addition to performing updates and maintenance, the virtual machine must be installed correctly so that it can access the dashboard and work effectively. You must also have credentials with Cardinal Health to gain access to the data.

5.3. Resource Requirements

The Team will need the following resources for the project to be completed:

Resource	Description
Personnel	Project Manager, Technical Consultant, Web Developer, Software Tester
Software	Windows, Amazon Workspace (VDI of Cardinal Health), Microsoft Offices (Words, Teams, etc.) and Power BI
Hardware	Computers

Table 4 Resource Requirements

5.4. Budget and Resource Allocation

In this section, the project budget will be explained. The tables will also present the equipment needed and used to complete the project.

Name	Quantity	Price(monthly)
Virtual Machine	4	N/A
Total	4	$0.00

Table 5 Salary

Position	Staff	Salary (Monthly)
Agile Master	1	$3,416.67
Web Developer	1	$3,583.33
Technical Consultant	1	$2,250.00
Software Tester	1	$3,166.67
Total	4	$12,416.67

Table 6 Resources and Budget Allocation

5.5. Schedule

This section will provide all the dates for each activity needed to complete the goals. The following figure represents the sprints decided to implement dividing the time to deliver the final product.

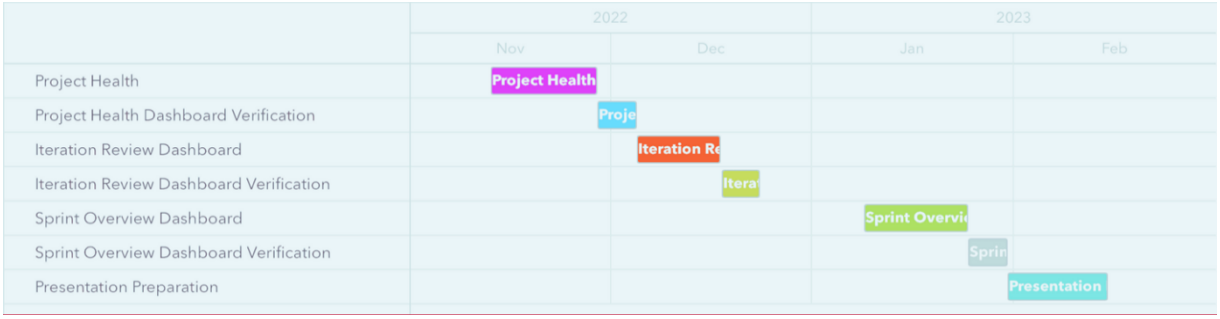

Figure 5 Gantt of the Project

Real Stone Solutions Dashboards

Start Date: 11/14/22
End Date: 2/13/23

Position	Start Date	End Date	Milestone/ Activity	Description
1	11/14/22	2/13/23	Start	Start date and finish date of the project
2	11/14/22	11/28/22	Project Health Dashboard	Start date and finish date of the project first dashboard
3	11/29/22	12/4/22	Project Health Dashboard Verification	Start date and finish date of the project first dashboard functionality
4	12/5/22	12/17/22	Iteration Review Dashboard	Start date and finish date of the project second dashboard
5	12/18/22	12/23/22	Iteration Review Dashboard Verification	Start date and finish date of the project second dashboard functionality
6	1/9/23	1/24/23	Sprint Overview Dashboard	Start date and finish date of the project third dashboard
7	1/25/23	1/30/23	Sprint Overview Dashboard Verification	Start date and finish date of the project third dashboard functionality
8	1/31/23	2/13/23	Presentation Preparation	Start date and finish date of the project presentation

Table 7 Gantt details