

Life Cycle Plan (LCP)

Farmworkers Safety App

Team 09

TEAM MEMBER NAME	ROLES
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Akshay Aggarwal	System Architect Prototype Developer Feasibility Evidence Analyst
Viraj Sahai	Prototype Developer Feasibility Evidence Analyst
Vahagen Sinanian	Operational Concept Developer NDI Analysis Personas
Juan Andrade	Requirements Engineer Prototype Developer Operational Concept Developer
Basir Navab	Life Cycle Planner Project Manager
Marko Djuliarso	Independent Verification and Validation Quality Focal Point

10/17/16

Version History

Date	Author	Version	Changes made	Rationale
10/12/2016	Shobhit Agarwal	1.0	Created document from ICSM template, updated team roles and skill sections	Draft for the FCR ARB Submission
10/17/2016	Basir Navab	1.1	<ul style="list-style-type: none">• Created skills, different tables	

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1. Introduction

1.1 Purpose of the LCP

The goal of this project is to provide for farmworker safety by identifying adverse heat conditions. The clients - Senator Dean Florez and his daughter Faith - had the vision to provide a feature that allows farmworkers to be notified of when they need to take a break when the temperature rises above 80°F. Also, advise the farmworkers by telling them what's good for them to wear on their workday, eat a night before their workday and educate them on their rights to work safety through a mobile app.

Currently no system exists. The farmworkers take a break only when their contractors ask them to. The contractors rely on a single temperature measuring device in the farm, which may or may not be present. There is no system in place to notify the farmworkers about the adverse heat conditions in the farm.

The objective is to use an application to send text based notifications to the farmworkers whenever the temperature at their registered farm location rises above a certain threshold. The farmer can update his farm location whenever he moves to a new farm.

The LCP will serve as a basis for controlling and monitoring this project's progress. It identifies the available personnel, the skills each of them possess and their availability to bring out the best in them for the project's benefit. This also serves as a proof to key stakeholders that major life cycle issues are known and have been thought of in advance.

1.2 Status of the LCP

The LCP is currently at version 1.1. This version reflects changes in the plan as a result of the re-defined project phase.

1.3 Assumptions

Conditions Necessary to Meet Plans, which, if not realized, would require re-negotiation.

- We have 15 weeks for the first part of the project.
- There are 6 people for this project plus 1 DEN student.
- The client will not change
- Minimum funding for purchasing some COTS

2. Milestones and Products

2.1 Overall Strategy

The team has been following the One Incremental Commitment Agile plan. Since no system exists already, we are building this from the scratch. For the strategy we use ICSM NDI-intensive. One of the common cases for the ICSM is NDI-intensive which focuses mainly on the project for which more than 30% of end-user are provided by NDI such as COTs, open sources or web services.

Description of Exploration Phase

Duration: 09/07/2016 – 09/15/2016

Concept: Project Management, Win-Win conditions Analysis with all stakeholders

Deliverables: Risk Defect Template, Client Interaction Report, Win Condition Report, Progress Reports, Meeting Reports

Milestones: Valuation Commitment review

Strategy: One Incremental Commitment development cycle

Description of Valuations Phase

Duration: 09/16/2016 – 10/09/2016

Concept: Project Management, Project Top Risk Prototype, Project Documentation

Deliverables: OCD, Feasibility analysis, initial life cycle planning, Use Case

Diagram, OOAD artifacts, Architecture Initial designs.

Milestones: Foundation Commitment Review

Strategy: One Incremental Commitment development cycle

Description of Foundations Phase

Duration: 10/10/2016 – 12/09/2016

Concept: Project Management, proactively maintaining Project Quality, Project Design and UX Engineering, Project Documentation

Deliverables: : Life Cycle Report, Feasibility Analysis enhanced, SSAD, Prototype, QFP, UI prototype, Wire Frames, Project UI Design and UX engineering, Working prototypes for each risk item.

Milestones: Development Commitment Review

Strategy: One Incremental Commitment development cycle

2.2 Project Deliverables

2.2.1 Exploration Phase

Table 1: Exploration Phase

Artifact	Due Date	Format	Medium
Win Condition Report	09/23/2016	.pdf file	Soft Copy
Client Interaction Report	09/08/2016	.pdf file	Soft Copy
Progress Report	Bi-weekly every Wednesday	.xlsx file	Soft Copy
Project Plan	Bi-weekly every Wednesday	.mpp file	Soft Copy
Risk & Defect	Bi-weekly every Wednesday	.xlsx file	Soft Copy

2.2.2 Valuation Phase

Table 2: Valuation Phase

Artifact	Due Date	Format	Medium
Top Risk Prototype	10/05/2016	.ppt file	Soft Copy
Progress Report	Bi-weekly every Wednesday	.xls file	Soft Copy
Project Plan	Bi-weekly every Wednesday	.mpp file	Soft Copy
Risk & Defect	Bi-weekly every Wednesday	.xls file	Soft Copy

2.2.3 Foundations Phase

Table 3: Foundation Phase

Artifact	Due Date	Format	Medium
LCP, OCD, FED, SSAD, Prototype Details	10/17/2016	.pdf files	Soft Copy
Prototype Presentation	10/12/2016	.ppt file	Soft Copy
Progress Report	Bi-weekly every Wednesday	.xls file	Soft Copy
Project Plan	Bi-weekly every Wednesday	.mpp file	Soft Copy
Risk & Defect	Bi-weekly every Wednesday	.xls file	Soft Copy

3. Responsibilities

3.1 Project-specific stakeholder's responsibilities

N/A

3.2 Responsibilities by Phase

Table 4: Team member responsibilities - Developers

Team Member	Exploration	Valuation	Foundation
Shobhit Agarwal Role: System Architect, Project Manager, Life Cycle Planner	Primary Responsibility: Point of contact for the client. Developing client interaction report and assisting in win-win negotiations.	Primary Responsibility: Developing biweekly packages, assisting in top risk prototype schema	Primary Responsibility: Organizing and leading client interaction meetings for system improvement. Identifying SSAI and LCP
Akshay Aggarwal Role: System Architect, Prototype Developer, Feasibility Evidence Analyst	Primary Responsibility: Creating diagrams and Analyses for the System Architect and also helping on developing the prototype	Primary Responsibility: Evaluation Criteria for Weather API.	Primary Responsibility: Analysis of COTS - ND Alternatives
Viraj Sahai Role: Prototype Developer Feasibility Evidence Analyst	Primary Responsibility: Developing prototype and also doing Feasibility Evidence Analyst	Primary Responsibility: Developing prototype and also doing different costs and creating risks	Primary Responsibility: Creating software and hardware costs, benefit analysis and major risks
Marko Djularlio Role: Independent Verification and Validation, Quality Focal Point	Primary Responsibility: Main point is working in the Quality Focal Point	Primary Responsibility: Developing quality management plan	Primary Responsibility: Creating Traceability Matrix, Quality Management Strategy
Basir Navab Role:	Primary Responsibility: Life cycle planner, planning the project on	Primary Responsibility: Updating Microsoft	Primary Responsibility: organizing and planning different works on the Microsoft project plan. Communicating

Life Cycle Planner, Project Manager	the Microsoft project plan and helping project manager to manage the project	project plan.	with project manager to help him in his tasks
Vahagen Sinanian Role: Operational Concept Developer, NDI Analysis, Personas	Primary Responsibility: Creating Operational Concept Developing diagrams and also researching bout personas	Primary Responsibility: Creating personas and OCD diagrams	Primary Responsibility: Organizing personas based on th research and also gathering all of th OCD diagrams.
Juan Andrade Role: Requirements Engineer, Prototype Developer, Operational Concept Developer	Primary Responsibility: Developing prototype and also doing operational concept	Primary Responsibility: Developing the prototype	Primary Responsibility: Developing prototype based on the win win negotiation session and existing docs

Table 5: Team member responsibilities – Client

Name	Mr. Dean Florez and Ms. Faith Florez
Role	Client
Exploration	Project vision
Valuation	Propose Win Conditions
Foundations	Review Team Presentation and give instant feedback

3.3 Skills

Table 5: Team member Responsibilities and Skills

TEAM MEMBER NAME	ROLES	SKILLSET
Shobhit Agarwal	Project Manager Life Cycle Planner System Architect	Project Management, Jira, Agile Development, Web development, Database, Java,

		Analytical skills, Git
Akshay Aggarwal	System Architect Prototype Developer Feasibility Evidence Analyst	Web development, Java, SQL, NDI Analytics, Git
Viraj Sahai	Prototype Developer Feasibility Evidence Analyst	Web development, php laravel
Vahagen Sinanian	Operational Concept Developer NDI Analysis Personas	Web development, PHP, Analytical skills, Git
Juan Andrade	Requirements Engineer Prototype Developer Operational Concept Developer	ASP.NET, C#, Databases, Git
Basir Navab	Life Cycle Planner Project Manager	C#, Java, PHP, Web development, Flash
Marko Djuliarso	Independent Verification and Validation Quality Focal Point	Tasting, quality management, C++

4. Approach

4.1 Monitoring and Control

The development team used Progress Report, Risk and Defect Report and Project plan in monitoring and controlling the project.

4.1.1 Closed Loop Feedback Control

The team used Gmail, Google Drive, Basecamp and a common WhatsApp Group for all the communications.

The team met every Monday, Wednesday and Friday after class to work on project deliverables.

4.1.2 Reviews

Each task is divided between different team members. This method gives the opportunity to each person to peer review the work of another team member to give feedback and make sure that the work is completed with high quality.

4.2 Methods, Tools and Facilities

Table 6: Software Tools Used

Tools	Usage	Provider
ASP.net	For creating prototype, uses C#	Microsoft
mySQL	For backend database	Microsoft
Weather API	For getting the weather temperature	DarkSky “Hyperlocal”
SMS API	For sending SMS-based notifications to farmworkers	Nexmo
Microsoft Project	To create a project plan	Microsoft
Draw.IO	To create all diagrams used in our reports	Google
Winbook	Used to prioritize win conditions with the client	USC Center for Software Engineering
Skype	Communications with Off-Campus/DEN Student	Microsoft
Basecamp	Communication with the client and sharing files	Basecamp LLC

Resources

- Estimated CSCI577a Effort: 7 team members at 14 hrs/week for 12 weeks
- Total estimated effort: unknown
- Budget information: The client will get the product free of cost, however charges to the development team can be applied for hosting the website.
- Project duration: 2 semesters
- Component modules in the development project:
- Programming language used: ASP.NET and COTS for getting weather forecast and sending notifications

Table 5: SLOC analysis

Name	Size SLOC	Cost	Staff	Effort	Schedule
Temperature Retrieval Module	100	\$0,00	0.1	0.58	2.45
Notification Module	100	\$0.00	0.2	1.22	3.12
Learning Module	2,000	\$0.00	0.5	2.87	4.34
Testing Module	1,200	\$0.00	0.3	1.87	3.98
Registration Module	2,000	\$0.00	0.4	2.21	4.65
Total	5,400	\$0.00		8.75	

Table 6: COCOMOII Scale Driver

Scale Driver	Value	Rationale
PREC	HIGH	The development team is familiar with Web Application and Mobile application development but need more information on the available APIs to integrate the text based notifications and fetching weather forecasts.
FLEX	HIGH	There are various COTS available to fetch the weather forecasts and send test based notifications. The system also does not hold any technological limitations and the development team can choose a technological stack of their choice.

RESL	NOMINAL	All critical risk items, schedule, budget and internal milestones are identified. All team members are well versed in the technological stack. Juan is an expert on ASP.NET framework and Akshay, Vahag worked on the NDI and cost analysis for each available COTS.
TEAM	VERY HIGH	Our client understands the development details and has given the developers freedom to choose the technological stack, NDIs, etc. that suits the best for the application. The client and the development team worked closely and got all their doubts cleared right from the first client meeting.
PMAT	NOMINAL	The development team follows ICSM guidelines, which the processes are defined and repeatable but the result may not be consistent, CMM Level 2.

Table 7: COCOMOII Cost Driver

Cost Driver	Value	Rationale
APEX	Low	Only a few members of the team have experience developing applications in the C# language
LTEX	Low	Only three members of the team are experienced developers