Software Engineering 2 Project Presentation RASD&DD

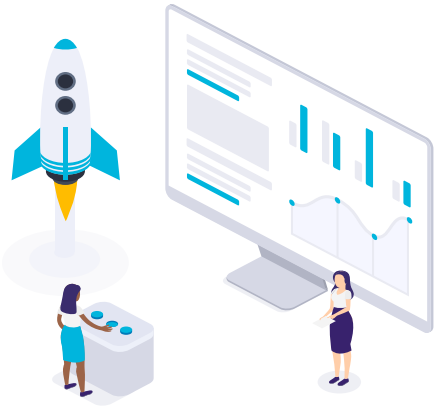
Mauro **Famà**, Giacomo **Lombardo**

DREAM

Data-dRiven prEdictive fArMing in Telangana

1

Requirements and Specifications



DREAM

Farmers

- Insertion of Reports
- Creation of Help Requests
- Forum Discussions
- …

Policy Makers

- Handling of Help Requests
- Performance evaluation
- Rewarding
- …

Goals

1. Allow Telangana's PM to **monitor local agriculture**
2. Allow farmers to **receive assistance/rewards** based on their performance
3. Allow farmers to request and **receive help**
4. Create farmers' network to promote **collaboration and mutual aid**
5. Improve farmers' **performance and productivity**

Requirements

- Allow farmers to fill **reports** with data about **goods productions**
- Allow farmers to create and contribute to **forum discussions**
- Allow farmers to **create help requests**
- Allow PMs to monitor **farmers' performances**
- Allow PMs to **handle** farmers' **help requests**
- **...**

Assumptions

Consistency

Farmers participating the program actively use the platform.

Correctness

Farmers always insert correct data in the system, sensor data is correct.

Fairness

Policy makers' decisions are solely data-driven and are not affected by personal opinions

Use cases

Farmer registration

The farmer receives and acceptes the invite

↓

Farmer data is inserted into the system

↓

The farmer receives his login credentials

Use cases

Rewarding of good-performing farmers

The trimester has ended

↓

The policy maker visualizes the list of the top ten performing farmers of the trimester

↓

The farmer is rewarded and an interview is scheduled

Use cases

Creation and handling of a help request

The farmer compiles the help request form

↓

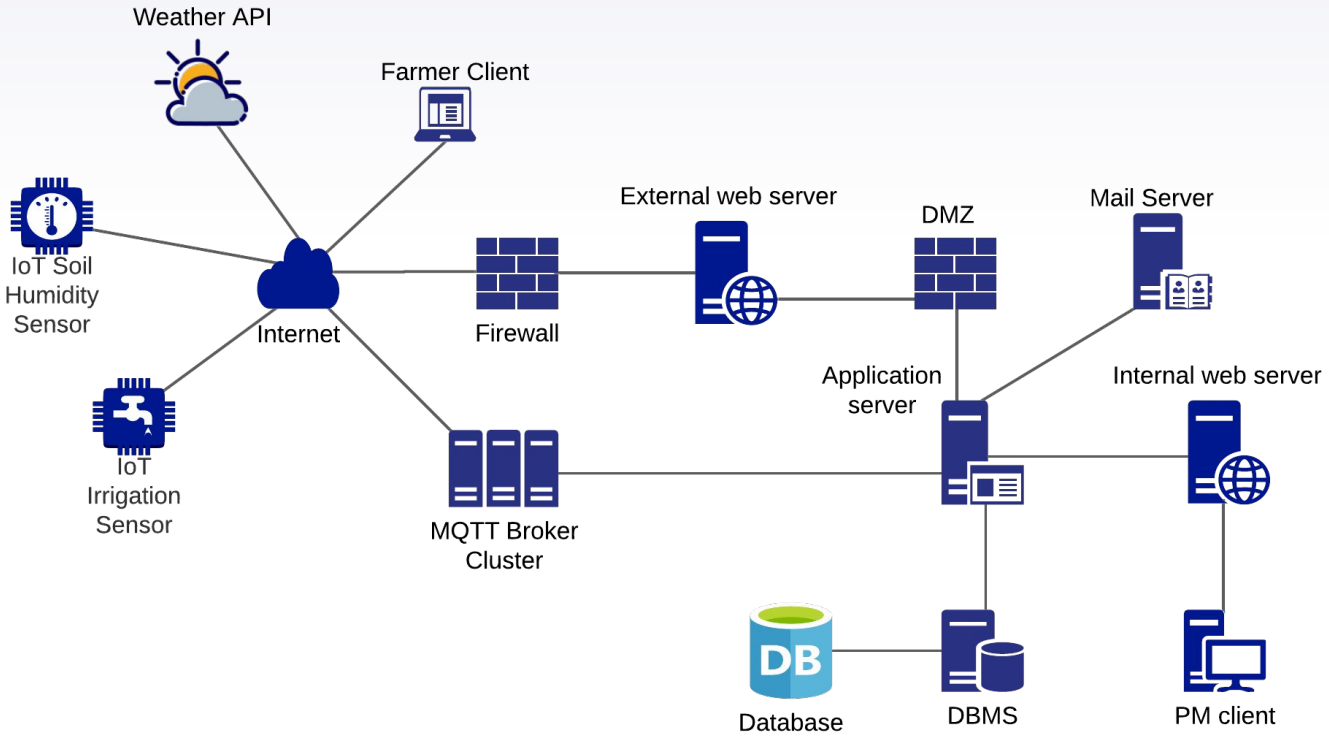
The policy maker takes the necessary actions

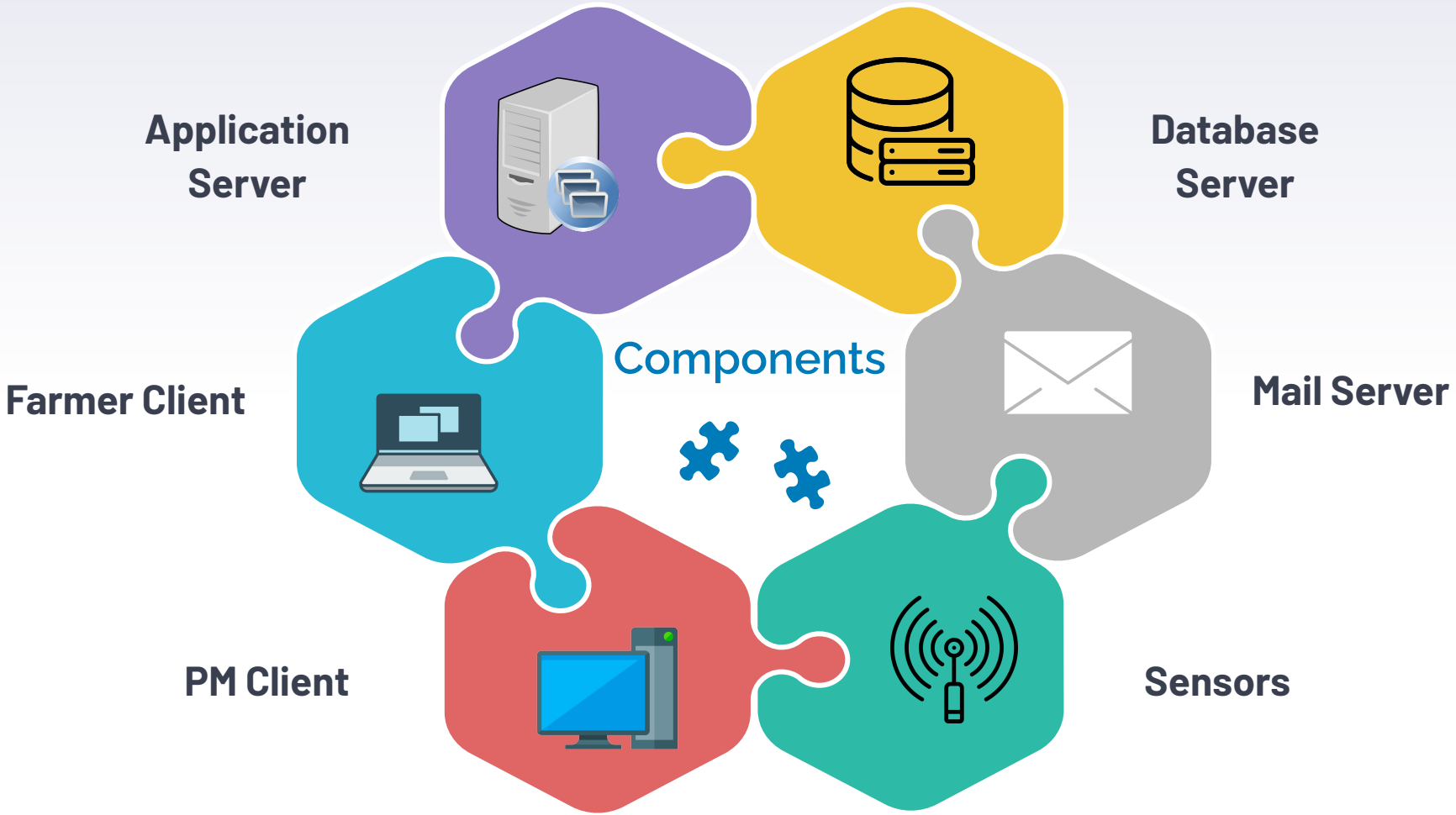
↓

The help request status becomes closed

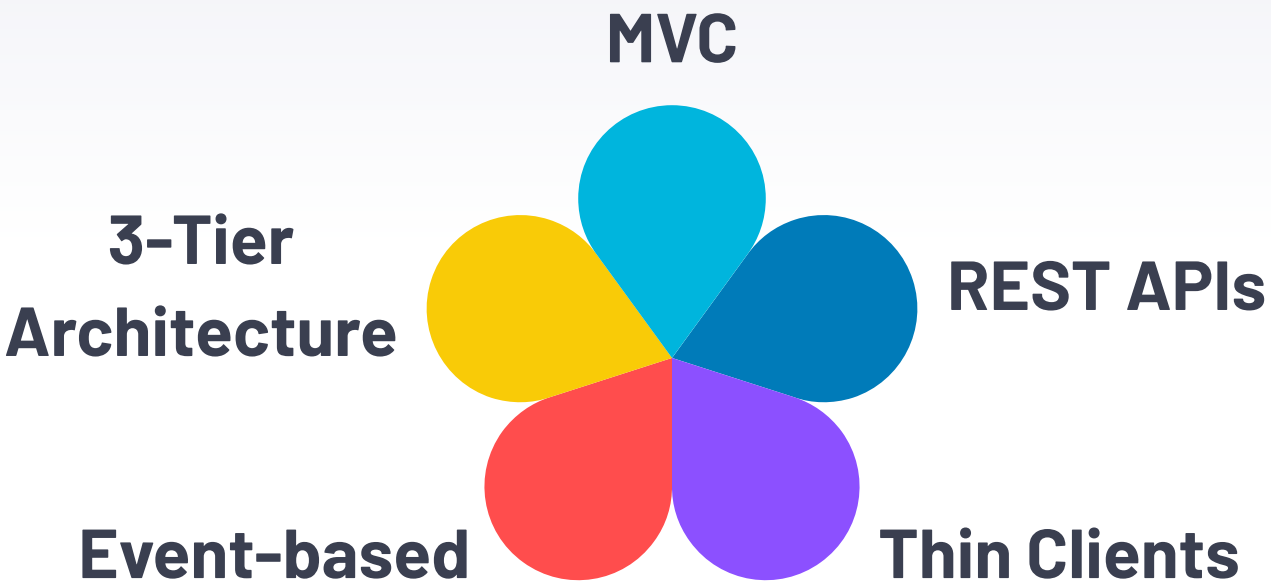
2 Design

Overview


Weather API
Farmer Client
IoT Soil Humidity Sensor
Internet
Firewall
External web server
DMZ
Mail Server
IoT Irrigation Sensor
Application server
Internal web server
MQTT Broker Cluster
DB
Database
DBMS
PM client


Application Server
Database Server
Components
Farmer Client
Mail Server
PM Client
Sensors

Architecture



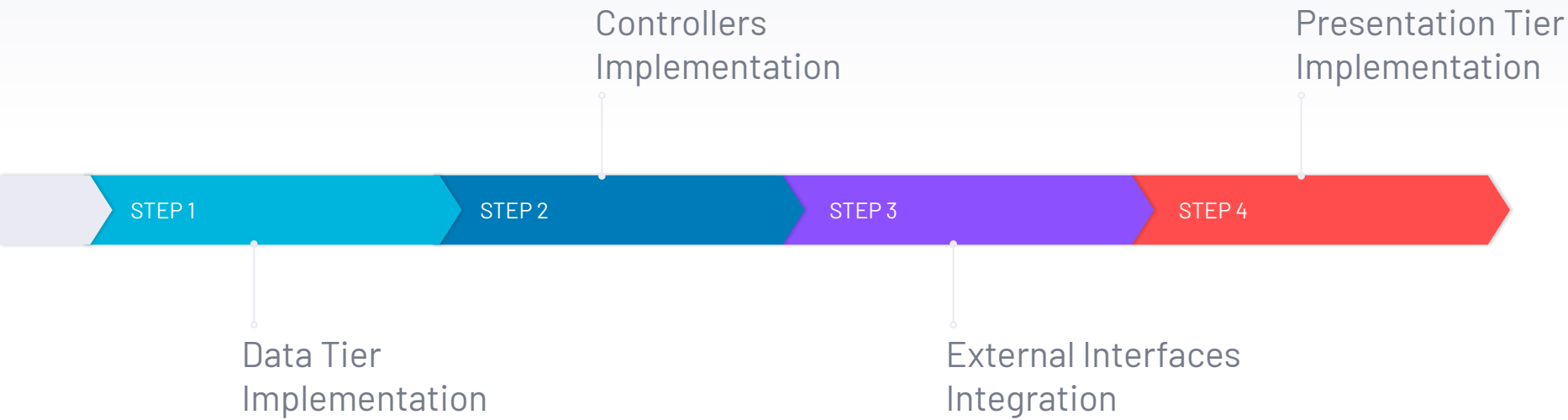
Interactions

Forum discussions

Interactions

Creation of reports

Implementation Plan



THANKS!

- Mauro Famà
- Giacomo Lombardo