

# Weather - FI003.0

Current document version

**V1.0**

Last modified by

**Pramod Khombare**

Module Name

**F-Intel**

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1. Document History

VERSION HISTORY							
DATE	CLIENT NAME	VERSION	DESCRIPTION OF CHANGE	AUTHOR	REQUIREMENT ID	CCB ID	STATUS
27/08/2024	F-Intel	V 1.0	New Document	Pramod K			Pending

## 2. Overview -

### 2.1 Service objectives or Business requirements and the business values added by the service

Use Case: Weather-Informed Farm Operations and Planning

The Weather Card is an essential tool for farmers and farm managers, offering real-time data on critical weather parameters, including temperature, rainfall, wind speed and direction, and humidity for the current day. With hourly updates on spraying conditions, it enables users to make timely and informed decisions for their farm activities.

The card also suggests optimal times for key farm operations—such as sowing, spraying, irrigation, and harvesting—based on the most up-to-date weather forecast. It provides both an hourly and a 7-day weather forecast with detailed insights on spraying conditions, ensuring that users can plan and execute farm activities efficiently and effectively in alignment with changing weather patterns.

## 3. Pre-requisite Services

#	MODULE NAME	SERVICE NAME	SERVICE CODE
1		Third Party Weather API integration Name: OpenWeather Links: <a href="https://openweathermap.org/current">https://openweathermap.org/current</a>	
2		The Data Science team should be given access to the Weather API along with Farm registration details (i.e. farm and crop infrastructure) to offer suggested activities, hourly and 7-day spraying conditions.	
3			
4			
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7			
8			
9			

## 4. Add form

### 4.1

#### Notes

- Not applicable

#### Feature:

### 4.2

#### Notes

- Not applicable

## Field Descriptions

## 4.4.1. Add form field descriptions

#	FIELD NAME	FIELD DESCRIPTION	ACCEPTANCE DATA/CRITERIA	- ERROR MESSAGE	Sample Example	PREREQUISITE	Mandatory Y/N
			-	-			
			-	-			
			-	-			

## 5. Customizations Summary Table

DATE	CLIENT NAME	REQUIREMENT ID	CCB ID	IMPACTED AREA	Change Category	REQUIREMENT STATUS

## 6. Customization Details/ Use Case

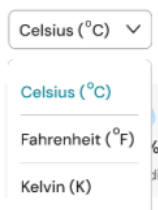
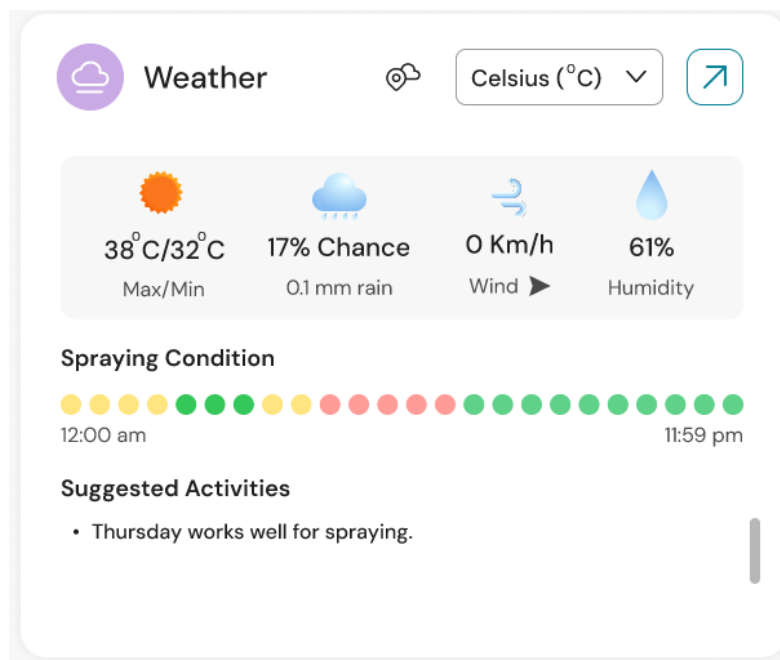
Requirement ID	DevOps ID
Requirement:	



- **Crop Growth Stage:** Tracks the crop's current stage, age, and days to harvest. It also offers insights into crop performance using satellite-based time series data like NDVI, MSAVI, NDRE, and NDMI.
- **Irrigation Advisory:** Recommends the optimal amount of water for irrigation, factoring in actual irrigation and rainwater contribution.
- **Pest and Disease Risk:** Highlights the percentage risk of pests and diseases, complete with images, details, control measures, and expert recommendations.
- **Crop Yield:** Shows planned and predicted harvest dates, allows for input of actual harvest dates, and compares targeted vs. predicted yields. Users can also log field observations during the growing season and actual yields after harvesting to track deviations.

The dashboard presents insights based on the selected site, plot, subplot, and date.

## 7.2. Feature – Weather Details



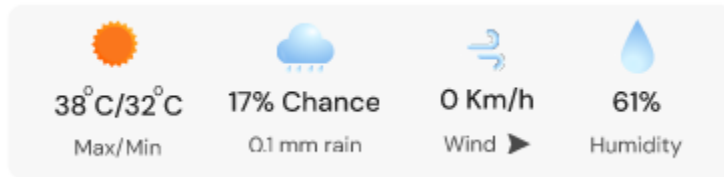
### Notes

- The weather card lets users select their preferred temperature units from a dropdown menu. The available units are as follows.



### Notes

- The weather station icon shows the name of the nearest weather station when the user hover over it.



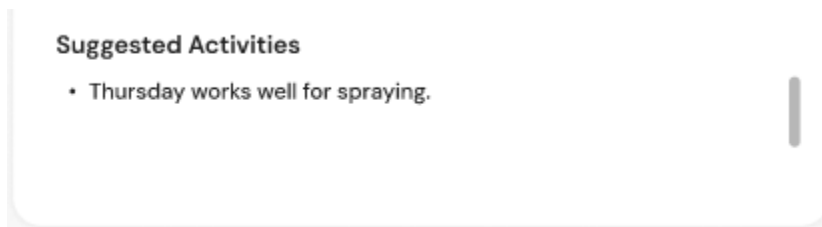
### Notes

- The weather card shows the current day's weather conditions, including the max and min temperatures, chance and quantity of rain, wind speed and direction, and relative humidity. It also provides hourly spraying conditions and suggested activities based on the weather forecast.



### Notes

- The spraying conditions show the best hours for spraying activities on a given day, rated as good, fair, or bad. When user hover over the circle, it also displays the specific hour. A green circle indicates good conditions, yellow for fair, and red for bad.

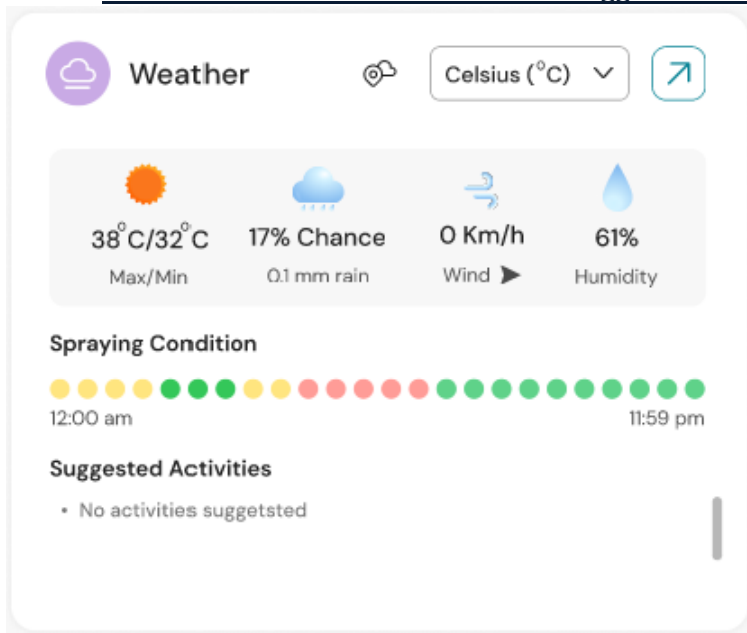


### Notes

- Suggested activities suggest tasks to be done on a specific day based on the weather forecast. Vertical scrolling is enabled to view more suggested activities.
- Clicking on the expand page icon will open the following pages as shown in section 7.2.1 and 7.2.2 in a popup.
- The weather forecast popup will display current days hourly forecasts and a 8-day forecast including current day.



### 7.2.1. Feature – Weather Details when no suggested activities



#### Notes

- The message “No activities suggested” needs to be shown when there are no suggestions for activities, as shown in the image below.

### 7.2.2. Weather forecast – hourly forecasts

The screenshot shows the Weather app interface with the 'Hourly Forecast' tab selected. The table below displays the hourly forecast for the current day.

Time	10 AM	11 AM	12 PM	01 PM	02 PM	03 PM	04 PM	05 PM
Temperature	26°C	26°C	26°C	26°C	26°C	26°C	26°C	26°C
Chances of Rain	27 %	27 %	27 %	27 %	27 %	27 %	27 %	27 %
Rain	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Humidity	0.02 %	0.02 %	0.02 %	0.02 %	0.02 %	0.02 %	0.02 %	0.02 %
Wind	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤
Spraying	Yellow bar	Yellow bar	Yellow bar	Yellow bar	Yellow bar	Yellow bar	Yellow bar	Yellow bar

#### Notes

- The weather forecast popup will display current days hourly forecasts and a 7-day forecast including current day.

- The hourly forecast will start from the current system time, but user can scroll horizontally to view data from previous hours of the same day. The parameters will include hourly temperature, chance of rain, rainfall amount, humidity percentage, wind speed and direction, and spraying conditions.
- The popup should also have a weather station icon, a dropdown for changing temperature units, and a close icon.

### 7.2.3. Weather forecast – 7-Day Forecast

Date	17 July	18 July	19 July	20 July	21 July	22 July	23 July
Temperature	26°C / 22°C	26°C/22°C	26°C/22°C	26°C/22°C	26°C/22°C	26°C/22°C	26°C/22°C
Chances of Rain	27 %	27 %	27 %	27 %	27 %	27 %	27 %
Rain	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm	0.02 mm
Humidity	0.02 %	0.02 %	0.02 %	0.02 %	0.02 %	0.02 %	0.02 %
Wind	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤	0.02 m/s ➤
Spraying	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

#### Notes

- In the 7-day forecast, forecast dates will be shown starting from the current system date till next 6 days including current date, but user can scroll horizontally to view data of immediate 7 previous days. The forecast will include daily temperature, chance of rain, rainfall amount, humidity percentage, wind speed and direction, and spraying conditions.
- The popup should also have a weather station icon, a dropdown for changing temperature units, and a close icon.

### 7.3. Cancel & Close Functionality

#### Notes

- Not applicable

### 7.4. Reverse Functionality

#### Notes

- Not applicable

## 7.5. Field Descriptions – Weather

#	FIELD NAME	FIELD DESCRIPTION	ACCEPTANCE DATA/CRITERIA	ERROR MESSAGE	PREREQUISITE	Enabled/Disabled
1	Temperature (max/min)	This will show the temperature in chosen temperature unit	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show temperature of current date.</li> <li>- Temperature will show min temperature and max temperature</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
2	Chances of rain Quantity of rain	This will show the chances of rain and quantity of rain	<ul style="list-style-type: none"> <li>- This is label field</li> <li>- This will show the chances of rain in percentage and quantity of rain in mm</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
3	Wind speed	This will show the speed of wind with wind direction with dynamic icon	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show the wind speed and the direction</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
4	Humidity percentage	This will show the weather humidity in percentage	<ul style="list-style-type: none"> <li>- This is label field</li> <li>- This will show the percentage of humidity</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
5	Spraying Condition	This will display the spraying conditions for each hour of the current 24-hour period.	<ul style="list-style-type: none"> <li>- This is label field</li> <li>- This will show the hourly spraying conditions of current day</li> <li>- The spraying condition data will appear from FarmGyan API</li> </ul>	NA	API Name: SprayApplicationIndexAPI  API Code: CLCP001-SAI	NA
6	Suggested Activities	This will show the suggested activities which can be performed by the user	<ul style="list-style-type: none"> <li>- This is label field</li> <li>- This will show suggested activities based on the weather conditions</li> <li>- The suggested activities data will appear from FarmGyan API</li> </ul>	NA	API Name: FarmActivitySuggestions  API Code: CLCP001-FS	NA
7	Temperature unit's dropdown	This is to select the temperature unit from the available list	<ul style="list-style-type: none"> <li>- This is dropdown field</li> <li>- User can be able to click on the field and select the specific temperature unit</li> </ul>	NA	NA	NA

			- Based on the selected temperature unit temperature will show			
8	Weather Station Icon	This is to show the weather station name from which above stated weather parameters are displayed	<ul style="list-style-type: none"> <li>- This is an icon</li> <li>- User can mouse hover on the icon to see the weather station name</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA

### Notes

## 7.6. Field Descriptions – Weather Popup

#	FIELD NAME	FIELD DESCRIPTION	ACCEPTANCE DATA/CRITERIA	ERROR MESSAGE	PREREQUISITE	Enabled/Disabled
1	Hourly forecast	This is hourly forecast tab, in this section hourly forecast will be displayed	<ul style="list-style-type: none"> <li>- This is label with click action</li> <li>- By clicking on this, hourly forecast section will open</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
2	7 days forecast	This is 7 days forecast tab, here 7 days forecast including current date will be displayed	<ul style="list-style-type: none"> <li>- This is label with click action</li> <li>- By clicking on it, 7 days forecast will open</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
3	Weather station Icon	This will show the nearest weather station	<ul style="list-style-type: none"> <li>- This is icon of weather station.</li> <li>- This icon will display a tooltip showing the nearest weather station when hovered over with the mouse.</li> </ul>	NA	NA	NA
4	Temperature Unit dropdown	This is to select the temperature unit from the available list	<ul style="list-style-type: none"> <li>- This is dropdown field</li> <li>- User can be able to click on the field and select the specific temperature unit</li> <li>- Based on the selected temperature unit temperature will show</li> </ul>	NA	NA	NA
5	Time	This will show the time here as per the selection of hourly forecast selection	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show the hour from the system current time</li> <li>- Back hours data of the same day should be displayed after horizontal scrolling</li> </ul>	NA	NA	NA

			- It will show hour for the current day (i.e., for 24 hours)			
6	Date	This will show the dates as per selection of 8 days forecast	<ul style="list-style-type: none"> <li>- This is label</li> <li>- It will show 8 days forecast data from the current date after horizontal scrolling</li> <li>- Previous 7 days forecast data should be displayed from current date after horizontal scrolling</li> </ul>	NA	NA	NA
7	Temperature	This will show the temperature	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show the temperature hourly forecast for current day and future days</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
8	Chance of rain	This will show the chance of rain percentage	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show percentages chances of rain</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
9	Rain	This will show the amount of rainfall.	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show the amount of rainfall.</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
10	Humidity	This will show the humidity percentage	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show the humidity percentage</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
11	Wind	This will show the wind speed and direction	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show wind speed in m/s unit and wind direction</li> <li>- Data will appear from third party weather API.</li> </ul>	NA	NA	NA
12	Spraying	This will show the spraying conditions such as fair, good, bad with respect to the time	<ul style="list-style-type: none"> <li>- This is label</li> <li>- This will show the spraying condition in terms of good, fair and poor</li> <li>- Good spraying condition will be shown by green color, poor spraying condition will be shown by red and fair spraying conditions will be shown by yellow color</li> </ul>	NA	API Name: SprayApplicationIndexAPI  API Code: CLCP001-SAI	NA

			- Spraying conditions will be displayed based on the FarmGyan API.			
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### 7.7. Scenarios

#	SCENARIO NAME	SCENARIO DESCRIPTION & IMPACT
1	No spraying condition data	If the FarmGyan API does not provide a recommendation on whether to spray or not, the user should see blank data for the specified time period (e.g., hour or day)
2	No activities suggested	If there are no suggestions for activities, then the following message “No activities suggested” has to be displayed on dashboard (section 7.2.1.) as shown in below image.

### Notes

## 8. Common Validations

### Add Form

#	FIELD NAME	FIELD DESCRIPTION	Applicable Y/N

### View Form

#	FIELD NAME	FIELD DESCRIPTION	Applicable Y/N
1			
2			

## 9. Edit Functionality

### Notes

- Not applicable

## 10. Account Postings

Ledger details	Explanation	Ledger Name	Dr	Cr	Dr	Cr

### Notes

- Not applicable

## 11. Detailed View

### Notes

- Not applicable

**12. Print View****Notes**

- Not applicable

**13. Configuration Settings**

#	CONFIG SETTING ID	CONFIG SETTING NAME	CONFIG SETTING IMPACT DETAILS

**14. Post-Impacted Services & Reports**

#	MODULE NAME	SERVICE NAME	SERVICE CODE	DESCRIPTION / IMPACT

**Notes**

- Not applicable

**15. Email Alerts****Notes**

- Not applicable