**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 03October 2022 |
| Team ID | PNT2022TMID51719 |
| Project Name | Smart Farming-IOT Enabled smart farming application |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | Registration through Gmail  Registration through entering Password |
| FR-2 | User Confirmation | Confirmation via Email  Confirmation via OTP |
| FR-3 | User Login | Login into application  Login through Email |
| FR-4 | User Dashboard | Learn to access the application |
| FR-5 | Monitoring of climate conditions | Using gadgets to map the climate conditions |
| FR-6 | Agricultural drones | Using gadgets to agriculture spraying, crop monitoring |
| FR-7 | Greenhouse automation | Use of IOT sensors enables them to get accurate real-time information |
| FR-8 | Crop management | Specific to placed in the field to collect data crop farming |
| FR-9 | Cattle monitoring and management | IOT agriculture sensors, attached to the animals to monitor their health and log performance |
| FR-10 | Precision farming | Data enables farmers to estimate optimal amounts of water, fertilizers, and pesticides |
| FR-11 | Predictive analytics | The use of data analytics helps farmers make sense of it |
| FR-12 | End-to-end farm management systems | Number of agriculture IOT devices and sensors, installed on the premises |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | Early detection and application of inputs only in the affected region, saving costs  Uses satellite imagery to detect the different zones in farms |
| NFR-2 | **Security** | IOT and smart communication technologies introduce a vast exposure to cyber security threats and vulnerabilities in smart farming environments |
| NFR-3 | **Reliability** | Reliable weather forecasts to maximize resource usage and minimize losses |
| NFR-4 | **Performance** | IOT devices and sensors capture various types of data from all over the field that can  then be analyzed through big data tools |
| NFR-5 | **Availability** | **Tanzania and Vietnam** are among the countries that will work towards climate smart agriculture – an approach aimed at transforming food systems |
| NFR-6 | **Scalability** | Scalability is the ability to increase available resources and system capability  without the need to a major system redesign or implementation, we can increase the capacity for data processing by increasing the cloud resources in the second layer and computation resources in the third layer |