

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

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| Date | 31 October 2022 |
| Team ID | PNT2022TMID41415 |
| Project Name | Real-Time River Water Quality Monitoring and Control System |
| Maximum Marks | 4 Marks |

Functional Requirements:

Following are the functional requirements of the proposed solution.

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FR-1 | User Registration | Registration through registered credentials register confirmation e-mails |
| FR-2 | User Confirmation | Confirmation via Email Confirmation via OTP/SMS |
| FR-3 | Log in to the System | Enter the OTP Check the Credentials Check the Access/Server |
| FR-4 | Manage the Modules | Manage the system Admins of user Manage and Monitor Details of System User Manage the User Roles Manage the User Accessibility and User Permission Manage User Details Privacy |
| FR-5 | Check Process Details | Temperature Details PH Details Turbidity Details dissolved oxygen level in water presence of chemical substances in water |
| FR-6 | Log out | Save the existing measurements Exit |

Non-functional Requirements:

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

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NFR-1 | Usability | Make Easier to Use ,More Efficiency to Use,Reduction of Errors While Using this Techniques |
| NFR-2 | Security | end by end encrypted protocol in Data Authentication, Sensitive data protected personally identifiable information(PII) other information details of users and networks |

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| NFR-3 | Reliability | <p>Provides the objective evidence necessary to make decisions on managing water quality today and in future also.</p> <p>This techniques make good communication between the user and the networks and it also achieves a better trade-off between costs and reliability</p> |
| NFR-4 | Performance | <p>Implementing Monitoring River Water, by using sensing sensor to monitor the river water parameters making more useful for various environmental Usage.</p> |
| NFR-5 | Availability | <p>PH Monitoring, Conductivity Analysis, CDOM (Dissolved Organic Matter), Measure of Carbonate and bicarbonate levels in water, this techniques made possible by linking information in water</p> |
| NFR-6 | Scalability | <p>Automatic Water Sampler, PH testing, Recording the water temperature, chlorophyll fluorescence analysis measuring the dissolved oxygen levels.</p> |