**Project Design Phase-I**

**Proposed Solution Template**

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| REGISTER NUMBER | 211719106002 |
| Date | 29 September 2022 |
| Project Name | Real-Time River Water Quality Monitoring and Control System |

**Proposed Solution Template:**

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| **S.No** | **Parameter** | **Description** |
|  | Problem Statement (Problem to be solved) | Without water, no life could exist, and many essential and nonessential human activities wouldn’t be possible without the use of healthy watersheds.  The effects of climate change and rapid urbanization around the world degrade the natural world, including wetlands and the wildlife that benefits from them. These factors also threaten the sustainable development of surrounding communities.  Due to the fast growing urbanization supply of safe drinking water is a challenge for the every city authority. Water can be polluted any time. |
|  | Idea / Solution description | A system for continuous monitoring of river water quality at remote places using wireless sensor networks with low power consumption, low-cost and high detection accuracy. pH, turbidity level, etc. are the limits that are analysed to improve the water quality. Following are the aims of idea implementation.  (a) To measure water parameters such as pH, dissolved oxygen, turbidity, etc. using available sensors at a remote place.  (b) To assemble data from various sensor nodes and send it to the base station by the wireless channel.  (c) To simulate and evaluate quality parameters for quality control. |
|  | Novelty / Uniqueness | Our proposed systems which monitor the level of the water in real time uses the minimal energy consumption possible and the mobile network to send notifications through SMS by controllers.  System that monitors the quality of water remotely uses low power sensors on many nodes that feed a central base with all the gathered data. |
|  | Social Impact / Customer Satisfaction | Improve water quality, providing a safe place to recreation, and clean sources of drinking water. By improving safe access to local rivers, communities are able to experience the benefits of recreation in their own backyard.  It provides water for irrigation, domestic supply, power generation and industry as well as a range of other ecosystem services and intrinsic and biodiversity values. |
|  | Business Model (Revenue Model) | By using this system we can find the quality of water because river water is the basic raw material for food and beverage industries.  It can be used in thermoelectric power plants, manufacturing plants, ore and oil refineries, and hydroelectric dams. |
|  | Scalability of the Solution | It supports the evaluation of environmental problems and potential health risks through the analysis of changes in water quality and the detection of harmful algal blooms. |