Phase 2: Innovation

The main objective of this document is to implement the design into innovation to solve the problems that comes with the air quality monitoring methods and its system with better features.

Procedures that can be taken by us to innovate the design:

There are several innovative technologies that can be implemented to solve the air quality monitoring problems. Through this, the cost of the devices can be reduced; it can be regularly monitored with exact real-time data, etc.,

- Design more low- cost, affordable sensors to monitor air quality in real-time and it must be portable that can be easily carried or integrated into wearable devices.
- The Data collected from the sensors must be real-time accessible to the users through apps or websites. The collected data must be integrated with the other relevant data to get to know about the understanding of air quality impacts.
- We can utilize machine learning and AI algorithms to predict and provide the trends and warnings of air pollution events. Satellite technology can be used to track air quality on global scale and can monitor pollution in remote areas.
- We can employ drones with air quality sensors to collect data and provide valuable insights during emergencies. Block chain technology can be used to securely record and verify the collected air quality data.
- Mobile monitoring stations can be implemented which also can be relocated to areas of concern for targeted data collection. Citizens must be encouraged in the initiatives and involving of data collection and analysis to get to know about the awareness of air quality monitoring.
- A system can be designed which provides the real-time feedback to individuals, allows them to make decision about outdoor activities based on air quality conditions. Several models can be developed that can forecast air quality trends from the collected data, weather reports, etc., to take preventive measures.
- The use of biological sensors also plays a crucial role in detecting specific air pollutants that are present in the air. Remote sensing technologies like LiDAR, hyperspectral imaging are used to identify pollution sources and measure air quality immediately.
- The trend of Green Infrastructure such us urban forests and green roofs, improves the air quality through plant based filtration.

The innovations are essential in addressing environmental challenges, protecting the public health, providing individuals about the information of air quality for them to make decision about air quality related issues. These can help us to understand the air quality and pollution and reduce its impact on the environment.