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City of things: Enabling resource provisioning in smart cities

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ABSTRACT

This system is implemented in areas to find out the effect of global warming. The features humidity level of a certain area is necessary to find the exact status of how Global warming has been affected in certain areas. These details are calculated by sensors system had successfully accomplished the online auto-monitoring of the Humidity environment of a certain area. PH sensor, turbidity, conductivity sensor, flow sensor this sensor value, we calculate the continually and taking the data, analyze after any problem in the sensor value we will calculate to the water purity.

Keywords— *Auto-monitoring, PH sensor, Turbidity, Conductivity sensor*

1. INTRODUCTION

Clean drinking water is the most valuable resource for humans. Any imbalance in the water quality would seriously affect the health condition of humans. Now a day's drinking water utilities are facing various challenges in real time due to limited water resources, global warming, growing population and pollution.

Hence there's would like of higher methodologies for real-time water quality observance. And also the environmental monitoring by using the sensor like temperature, gas sensor, humidity.

1.1 Objective

The main objective of this idea is to make sure that safety is the foremost concern for every human being and it must be maintained every time. To provide utmost comfort in the day to day needs of human beings, less human effort is needed to do a task where physical presence was necessary. The idea is to make the surroundings favourable to human beings and highly affordable.

1.2 Organisation of the report

The report is divided into 4 parts and each part deals with different aspects of the system:

- **Design:** This part talks about the existing system, how they are designed and issues associated with them. Furthermore, it describes the features of the system.
- **Module description:** This part talks about the existing system, how they are designed and issues associated with them. Furthermore, it describes the features of the system.
- **Implementation:** This part deals with the overall implementation of the system and how it can be used to avoid real life mishaps.
- **Conclusion:** The conclusion part duly denotes the conclusion and further scope of the project. It also mentions the future enhancements that can be done to improve the quality of the system as a whole.

2. LITERATURE REVIEW

Although the cited existing and ongoing research projects address the requirements of management frameworks for smart cities, they have not yet delivered a fully flexible and autonomous solution. Furthermore, the described smart city testbeds are often small-scale in terms of both device count (only a few tens) and geographic location (often only a single building or a car parking lot). Second, most testbeds very homogeneously focus on only one wireless technology (e.g., only ZigBee or WiFi). The CoT framework.

2.1 Existing system

In the existing System, we monitoring the water quality by connecting PH sensor, conductivity sensor and turbidity sensor which is collected data analyzed by the person directly. And also the environmental monitoring reading also taking that also the reading showing by monitor.

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2.2 Proposed system

In the proposed system same setup, we have from Existing system but we have to add Flow sensor and Solenoid valve. Purpose of using the flow sensor is to find out how much water is consumed by each house. And solenoid valve is to Automatic Closing of pipe. This whole system can act as water quality and Water regulated provide system. And also the environmental monitor in this output shown in the IOT.

2.3 Module

In this section, the CoT framework is presented. First, a high-level architecture overview is discussed. Second, the LPWAN infrastructure of CoT is introduced. Third, a detailed overview of the CoT architecture is illustrated. Then, the Data Collection and Aggregation Platform are detailed. Finally the Data Analysis Platform is presented.

The CoT project is a cross-technology testbed platform that validates key smart cities research results and facilitates innovative smart city experiments on top of a large-scale testbed environment. The CoT project aims to achieve four important goals:

- **Testing new technologies:** By rolling out IoT devices across the entire city, CoT provides an ideal and realistic testing environment for new network technologies.
- **Big data platform:** The project provides a data platform for monitoring life in Ant- were in real time. It aims to turn these data streams into valuable information, which can, in turn, be used by new applications and services.
- **Citizen engagement:** CoT leverages interactive user research, allowing citizens to give feedback on the applications and services.
- **Resource provisioning:** The project aims to achieve efficient resource provisioning for smart city applications by providing flexible data collection and analytics toolkits.

To accomplish all these objectives, the CoT testbed has created an environment in which researchers and stakeholders can use the functionalities provided by the CoT framework to fully extract useful information from the gathered data.

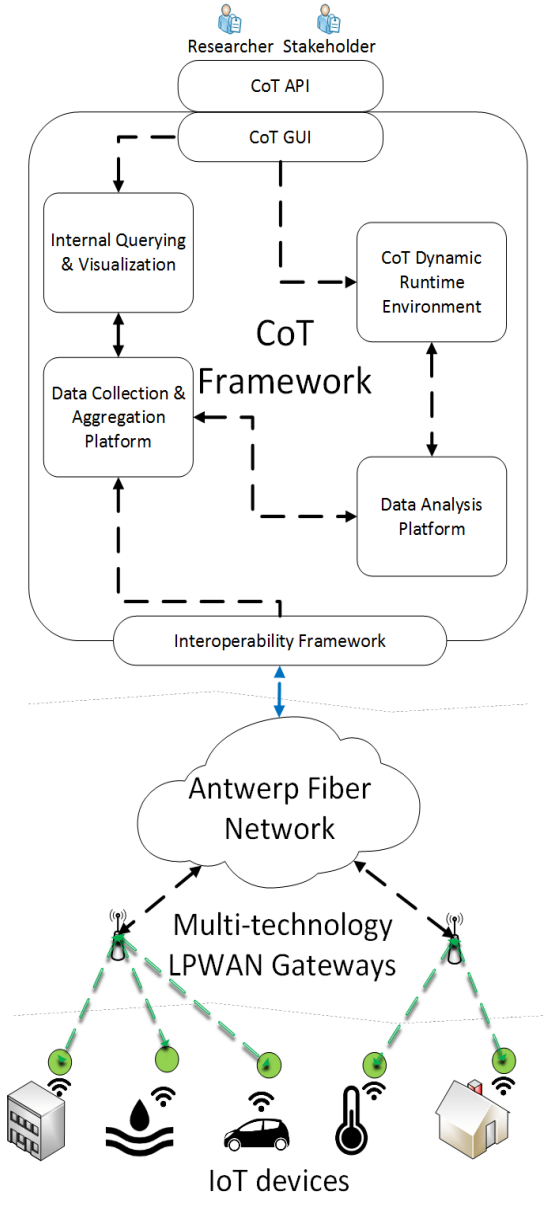

Fig. 1: Architecture diagram

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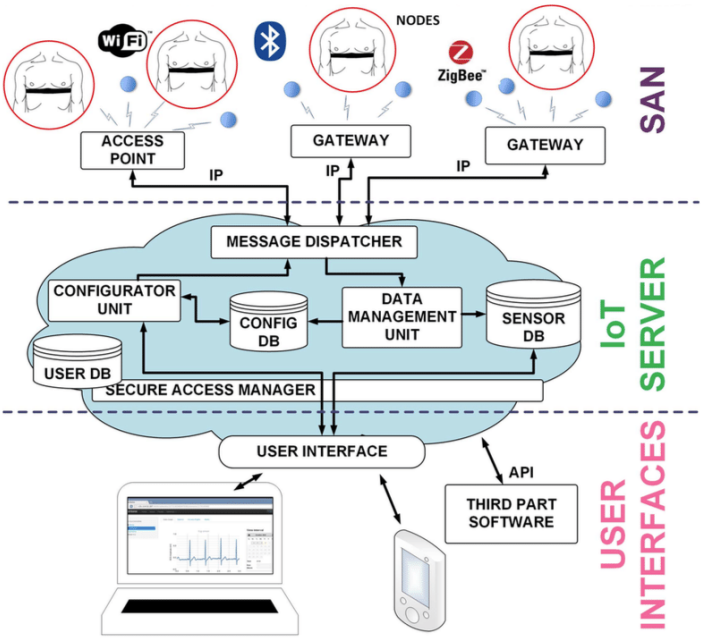

Fig. 2: Block diagram

2.4 Hardware required

- Ardunio controller
- Temperature Sensor
- Conductivity sensor
- Turbidity sensor
- Flow sensor
- Solenoid valve
- PH sensor
- Humidity sensor
- Gas sensor

2.5 Software required

- Arduino idle
- Embedded C

3. CONCLUSION

The need for management functionalities and resource provisioning strategies for smart cities is increasing due to the deployment of IoT use cases. Smart cities aim to provide applications and services based on real-time data retrieved from different devices placed all around the urban area. Proper resource provisioning capabilities are required to minimize resource costs. Therefore, in this article, the CoT framework is presented, which provides not only data collection and analysis operations but also automated resource provisioning mechanisms for smart city applications.

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