GASEOUS ANALYSIS STATION USING IOT ARCHITECTURE

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ABSTRACT:

The climate has been over the last decades, one of the major reasons for discussion of the scientific community, since climate changes could be extremely complex, as well as having a direct impact on the way of life whole. Besides the climatology, more specifically, the analysis of environmental factors and their respective impacts. Therefore, the need to monitor environmental parameters accurately, rapidly and reliability, is a great challenge for the national territory. Mainly taking in consideration of Amazonian lands. Since many places of interest can be: of closed forest, near indigenous lands, islands, of intense environmental pollution and etc.

In view of this approach, the idea of a portable climate was developed. Through a microcontroller of very low cost and extremely easy to work and maintain. The prototype station of gases analysis was built through using Arduino, esp8266 as microcontrollers and CO, CO2, NO2 sensors.

Working together of a Raspberry pi and a wireless network, the prototype does the data acquisition used in this work, based on the second microcontroller, ESP8266, which makes the TCP / IP connection in order to send the data to the database which remains allocated within the Raspberry pi server.

In addition to having this architecture, this prototype can use both the wifi network available in the environment, such as intranet or internet, that is to say, data collection anywhere in the world. As well, the 3G network and SMS can be used to communicate with a final service of data collection and reception. with the objective of giving flexibility of data transmission due to the vast availability of communication channels.

The primary objective of the work is to create a solution that analyzes the actual polluting gases of the environment for a possible diagnosis of pollution range for each environment in which the module will be inserted.