INTERNET OF THINGS SYSTEM FOR ENVIRONMENTAL MAP ACQUISITION

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The paper discusses the importance of contemporary electronic systems, with the focus on the development of distributed electronic equipment. Here the devices, potentially members of an Internet of Things (IoT) network, are part of a complex distributed electronic system, organized in an IoT network, dedicated to solving a specific problem. The paper proposes a concept of a distributed electronic system, consisting of a collection of sub-components of the electronic devices placed on certain cartesian coordinates. Also is presenting a case study of the operation for a distributed electronic system which is scanning environmental parameters such as temperature, humidity, CO2, noise, brightness, or others. The proposed system consists in a set of electronic devices equipped with sensors for measuring the environmental parameters and communication modules to send the data collected to the IoT type network. The system stands for an analogy of a camera where every pixel collects environmental data at certain coordinates. All the collected pixels construct a 2D image. The uncovered areas interpolated from the nearest sensors. As a result, a 2D image is obtained, which represents a map of the specific area in the selected parameter, such as the temperature distribution map, brightness, CO2, motion, noise, or another parameter, depending on the type of sensors available on the scanning devices.

Based on this concept, a prototype of a distributed electronic system, interconnected via an IoT network, was developed, following the ZigBee technology. It is capable to collect 2D images of a predefined area, in several parameters such as temperature, brightness, CO2, motion, noise, simulating a "video" camera on these parameters.

Keywords: *IoT, electronic, device, environment, map.*

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