Abstract

This article describes the tools and technologies used to manage an integrated system consisting of RFID access control and noninvasive infrared air conditioning. In this sense, was developed an IoT (Internet of Things) platform consisting of hardware – responsible for controlling the access of users through the recognition of an individual RFID tag, as well as the capture and transmission of infrared signals – and software – a Web system for monitoring and remote control. Was also developed web software to monitor access and register new users and environments, where it is possible to define user profiles besides the registration of activities in each site. As resources are usually limited in IoT systems, it is necessary to use application protocols that optimize the transmission between sensor nodes and gateways, as a result of this the Message Queue Telemetry Transport (MQTT) and Constrained Application Protocol (CoAP) protocols were used for communication between the RFID access control system (RACS), infrared air conditioning control (IACC) and the Web system. The proposed platform was tested and validated in a classroom.
References

2. ABESCO. Energy waste reaches $61.7 billion in three years, 2017.
16. EPE. Use of air conditioning in the brazilian residential sector: Perspectives and contributions to the advance in energy efficiency, 2018.
23. Rajeev Piyare. Internet of things: ubiquitous home control and monitoring system using


26. ALEXANDRE VICENZI. BUSTRACKER: Transit Tracking System, 2015. Monograhy (Bachelor of Computer Science), FURB (Regional University of Blumenau), Blumenau, Brazil.


**Index Terms**

Computer Science                                      Distributed Systems

**Keywords**

IoT, Esp8266, IR, MQTT, CoAP, RFID