Versatile Gateway for a Label Loom Machine using Industrial IoT Technologies

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Abstract— Constant search for efficiency and productivity has led to innovation on the factory shop floor, representing an evolution of the current production systems combined with new technologies of industrial automation and information technology. This work presents a versatile gateway for experimental demonstration of Industrial IoT technologies in a loom machine, allowing sensing, monitoring and data acquisition that was not originally available. We have implemented an approach, based on the OPC UA communication protocol for real time applications, and OPC UA to MQTT conversion mechanism. Raspberry Pi's platform act as an OPC UA server. From the measurements, data stored in a cloud server can be accessed remotely with improved security and visualized from a computer dashboard. One of the conclusions that can be drawn is that the proposed gateway allows data to be stored and monitored from a smartphone application or a computer web interface.

Keywords— Industrial IoT, OPC UA, MQTT, Embedded Systems, Node-RED