

An IoT View on Network Performance Evaluation

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This paper introduces a methodology for assessing network performance through continuous data acquisition provided by an IoT sensor network. Analogous to the way telemedicine leverages continuous patient monitoring to enhance traditional medical diagnostics, the continuous reporting of network-related metrics by distributed IoT nodes can offer a valuable complementary perspective to conventional network evaluation techniques. The proposed solution builds upon an existing IoT infrastructure initially designed for monitoring environmental conditions, to which performance monitoring capabilities have been seamlessly integrated as part of the current research.

A central premise of this study is that effective network performance evaluation does not necessarily require the deployment of a dedicated sensor network. Instead, existing IoT systems can be repurposed or extended to fulfill this role. The practical implementation presented herein focuses on the Wi-Fi infrastructure within a building of the Faculty of Automation and Computer Science, at the National University of Science and Technology Politehnica Bucharest. The system monitors key performance indicators such as signal strength (RSSI), wireless channel congestion, and communication latency, thereby demonstrating the feasibility and advantages of this integrated approach.

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