Monitoring Cellular Networks Performance Using Crowd Sourced IoT System: My Operator Coverage (MOC)

Authors : Bassem Boshra Thabet, Mohammed Ibrahim Elsabagh, Mohammad Adly Talaat

Abstract : The number of cellular mobile phone users has increased enormously worldwide over the last two decades. Consequently, the monitoring of the performance of the Mobile Network Operators (MNOs) in terms of network coverage and broadband signal strength has become vital for both of the MNOs and regulators. This monitoring helps telecommunications operators and regulators keeping the market playing fair and most beneficial for users. However, the adopted methodologies to facilitate this continuous monitoring process are still problematic regarding cost, effort, and reliability. This paper introduces My Operator Coverage (MOC) system that is using Internet of Things (IoT) concepts and tools to monitor the MNOs performance using a crowd-sourced real-time methodology. MOC produces robust and reliable geographical maps for the user-perceived quality of the MNOs performance. MOC is also meant to enrich the telecommunications regulators with concrete, and up-to-date information that allows for adequate mobile market management strategies as well as appropriate decision making.

Keywords : mobile performance monitoring, crowd-sourced applications, mobile broadband performance, cellular networks monitoring

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020