

Project Title: Adaptive Resource Allocation Scheme for Uplinks in IEEE 802.16m Systems
Project No.: RG045-10ICT
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Abstract:

The project aims to develop an adaptive resource allocation scheme for the uplink in the IEEE 802.16m TDD/OFDMA (Time Division Duplexing/ Orthogonal Frequency Division Multiple Access) system. Although the allocation of both downlink and uplink is primarily performed by the base station (BS), the uplink direction imposes more challenges than the downlink since the allocated resources will be further distributed among the connections available at the mobile station in the uplink. Due to the QoS provisions that need to be taken into account, this will further bring more challenges in allocating the resource efficiently. The developed scheme however, should not only abide by the QoS requirements but should also provide fairness to all available uplink connections. This in turn will guarantee that all connections will have a fair share of the resources so as not to violate the QoS provisions in long term. Furthermore, the developed scheme should be simple in a way that it is not too computationally intensive that will render the solution impractical.