Cloud RAN for Mobile Networks - a Technology Overview

Cloud Radio Access Network (C-RAN) is a novel mobile network architecture which can address a number of challenges the operators face while trying to support growing end-user’s needs. The main idea behind C-RAN is to pool the Baseband Units (BBUs) from multiple base stations into centralized BBU Pool for statistical multiplexing gain, while shifting the burden to the high-speed wireline transmission of In-phase and Quadrature (IQ) data. C-RAN enables energy efficient network operation and possible cost savings on base-band resources. Furthermore, it improves network capacity by performing load balancing and cooperative processing of signals originating from several base stations. This article surveys the state-of-the-art literature on C-RAN. It can serve as a starting point for anyone willing to understand C-RAN architecture and advance the research on C-RAN.