IIT Madras 5G TestBed

High-Level Synthesis of OpenRAN based framer and de-framer for C-plane

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ABSTRACT

OpenRAN is an initiative to transform the current vendor dependent access networks to general-purpose vendor-independent hardware and software-defined technology. In the existing RAN (Radio Access Network), the software code, hardware components and interfaces are highly vendor-dependent, leading to vendor lock-in. O-RAN breaks open the fronthaul separating the BBU (Base Band Unit) from RRH(Remote Radio Head) allowing radio from a supplier to be compatible with a processor from another supplier. The primary purpose of the C-plane messages is to transmit data-associated control information required for processing of user data (e.g., scheduling and beamforming commands). Messages are sent separately for DL related commands and UL related commands. The design choices are made to support a MIMO (Multiple Input Multiple Output) systems requiring high throughput links.

Keywords: O-RAN, BBU, RRH, MIMO, lock-in, C-plane.

The details of the project have not been included in adherence to the confidentiality of the 5G Testbed project as informed by the guide. A copy of the actual report has been submitted to the guides.