

**NOKIA**

# Comments to 802.1CM Specification draft

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## Motivation

- The current 802.1CM Draft, (01) fronthaul terminology has been taken from CPRI specifications
- CPRI specifications have originally been written the traditional 3G Base Station and Remote Radio Head in focus
- Besides CPRI the 802.1CM need to fit to new emerging RAN architectures ( Cloud RAN, C-RAN etc.)
- The basic terminology should be agnostic to specific technologies and understandable in all BTS Architectures.
  
- The following slides contain proposals for some text in
  - 3.Definitions
  - 5. Fronthaul
  - 5.1 CPRI Requirements

## Proposed content: 5. Fronthaul

This standard is focusing on the requirements of fronthaul and meeting these requirements by a bridged network. This clause describes the fronthaul requirements to be fulfilled by a bridged network. Fronthaul is connectivity between functional parts of a cellular Base Station (eNB) like illustrated in Figure 5-0 below. Fronthaul has traditionally been implemented with point-to-point connections based on CPRI standard. In this standard same interconnectivity will be defined using bridged Ethernet, but in later stage also other fronthaul classes with relaxed requirements will be defined.

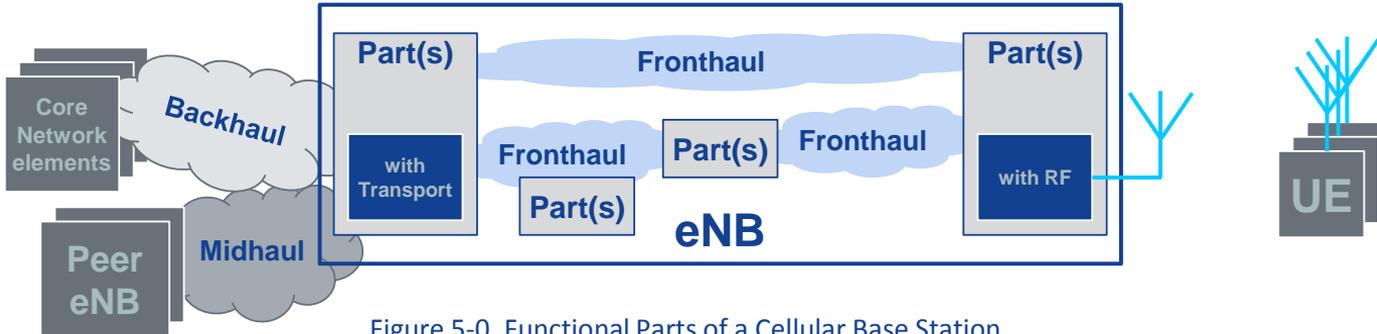


Figure 5-0, Functional Parts of a Cellular Base Station

Fronthaul link is a transport link between functional parts of a cellular Base Station (eNB) as illustrated in Figure 5-1. Parts are named as Centralized Unit (CU) and Distributed Unit (DU) which are the two basic building blocks into which a cellular base station can be decomposed in order to provide flexible radio system architectures for mobile networks.

In order to have the Centralized Units located in a conveniently accessible site, the CU is often geographically separated from the DUs and connected via the fronthaul link. Fronthaul link can also be connection between two DUs.

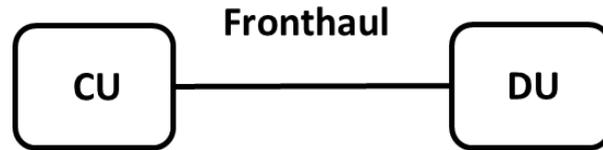


Figure 5-1, Fronthaul link

A fronthaul network is a network providing the fronthaul connections, e.g., a bridged network as shown in Figure 5-2. CUs and DUs are end stations, which are interconnected by a bridged fronthaul network. Bridges depicted in the figure are Edge Bridges and Port 1 of the Bridges are Edge Ports. The fronthaul network provides point-to-point, point-to-multipoint, multipoint-to-point, or multipoint-to-multipoint connections between the CUs and DUs as required for the fronthaul connections.

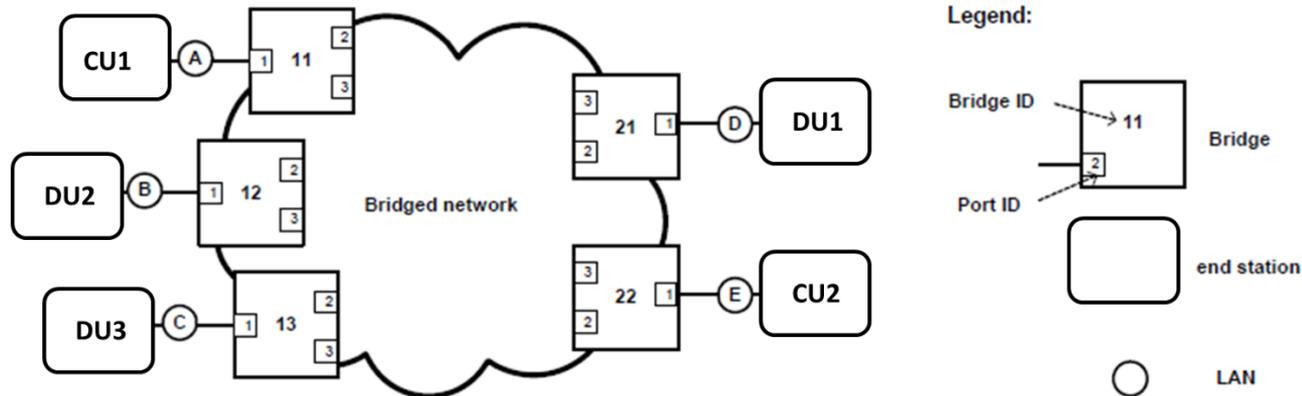


Figure 5-2—Fronthaul network

## 5.1 CPRI class requirements

CPRI is a digitized and serial interface that establishes a connection between CU and DU, which in CPRI terminology are REC and RE, i.e. between the parts to which a radio base station is split. In this Chapter RE and REC are used to match CPRI terminology. The REC contains the radio functions of the digital baseband domain, whereas the RE contains the analogue radio frequency functions.

## 3. Definitions

**3.1 Fronthaul:** The transport connection between two functional parts of a cellular BTS.  
See Chapter 5.

A modern lounge area with yellow and green armchairs and a white mug on a table. The scene is brightly lit by natural light from large windows, creating a clean and contemporary atmosphere. The furniture is arranged in a way that suggests a relaxed, social environment. The word "NOKIA" is prominently displayed in the center of the image.

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