

Time-Sensitive Networking for Fronthaul

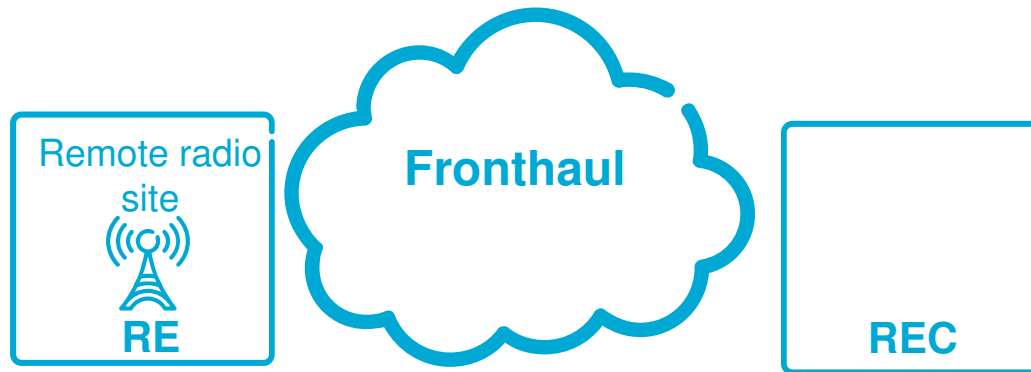
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References

- › http://www.ieee802.org/1/files/public/docs2015/liaison-CPRI_Tdoc_1124_presentation-0315.pdf
- › <http://www.ieee802.org/1/files/public/docs2014/new-ashwood-tsn-cpri-fronthaul-1101-v01.pdf>
- › <http://www.ieee802.org/1/files/public/docs2014/new-irvine-mobile-networks-fronthaul-0914.pdf>
- › <http://www.ieee802.org/1/files/public/docs2014/new-ashwood-tsn-cpri-fronthaul-0714-v03.pdf>

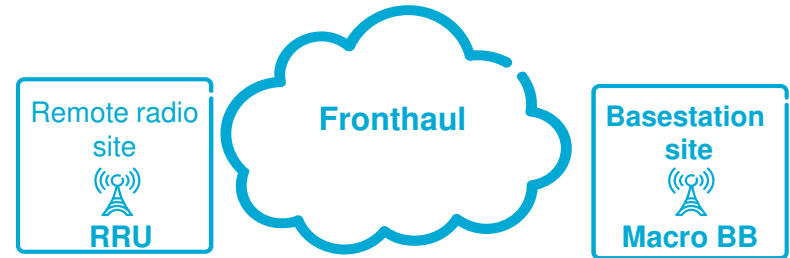
Target Network: Fronthaul



- › Common Public Radio Interface (CPRI) between Radio Equipment (RE) and Radio Equipment Control (REC)
- › Very stringent QoS requirements
- › Symmetric paths

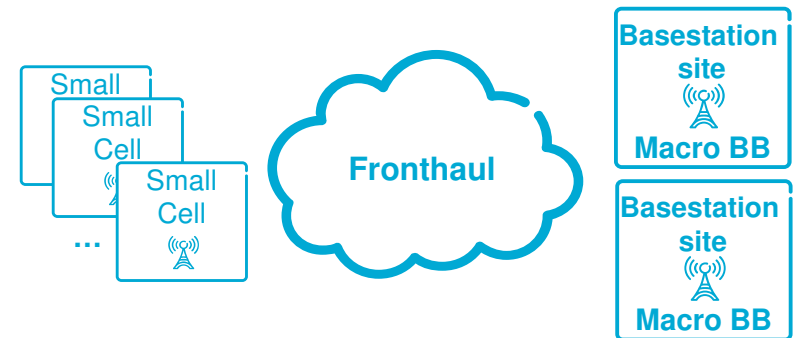
Use Cases, e.g.

> Main-Remote



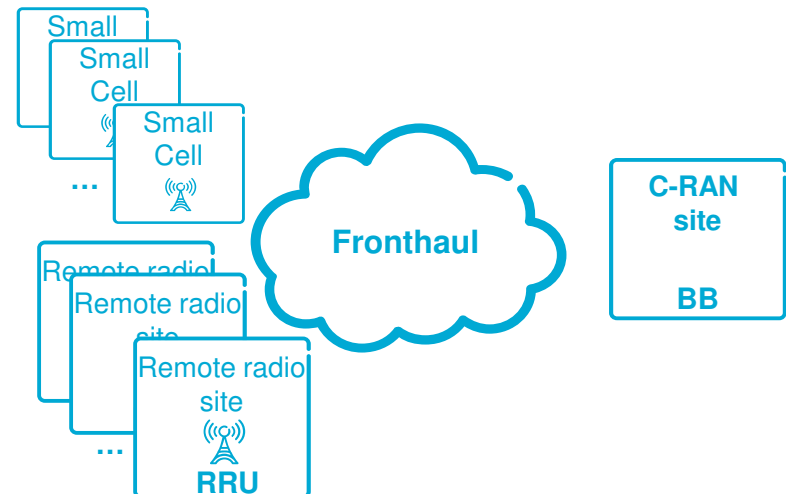
> Small Cells

- dense Fronthaul network
- indoor deployments



> Centralized RAN (C-RAN)

- extensive Fronthaul network
- indoor deployments



Proposal

- › Develop a standard network profile for Fronthaul
- › Similar to 802.1BA for AVB
- › The profile
 - Collects requirements for Fronthaul networks
 - Selects features, protocols to build networks capable of transmitting Fronthaul streams like CPRI
 - Describes the components that can be combined and how
 - Provides guidance in terms of meeting Fronthaul requirements
- › The project may identify additional functions that are required

- › Collaboration with CPRI Group

Candidate Features, e.g.

- › 802.3br – Interspersing Express Traffic (IET)
- › 802.1Qbu – Frame Preemption
- › 802.1Qbv – Enhancements for Scheduled Traffic
- › 802.1Qch – Cyclic Queuing and Forwarding
- › Synchronization (e.g. IEEE 1588, ...)
- › ...

Next Step

- › Develop PAR and CSD in forthcoming 802.1 meeting(s)