Common Public Radio Interface

CPRI functional decomposition requirements update

Introduction

- Following table summarizes CPRI requirements expectation
- 802.1CM group feedback is expected over the given requirements values

Requirements summary

	Synchronization Stream	IQ data	C&M data
Traffic type repartition	-	> 90%	< 10%
Traffic pattern	-	Periodic (1~67µs)	Burst
Traffic QoS type	Very High	High	Best Effort
Security	Under study	Under study	-
End-to-End Latency	-	<100µs	-
FDV	-	Not specify	-
FLR	-	$<10^{-7}$	$<10^{-6}$
Synchronization timing accuracy	Class A+[1]: < 10 ns Class A[1]: < 45 ns Class B[1]: < 110 ns Class C[2]: < 1.36 µs	-	-
Synchronization frequency error	-[3]	-	-

- 1) To a common GM (or common TC/BC)
- 2) To any GM
- 3) If SyncE TBD

Synchronization timing

- With timing accuracy we mean that the slave clock can be before or after the GM clock up to the specified value.
  - I.e. the timing error in the slave can be +/- the specified value.

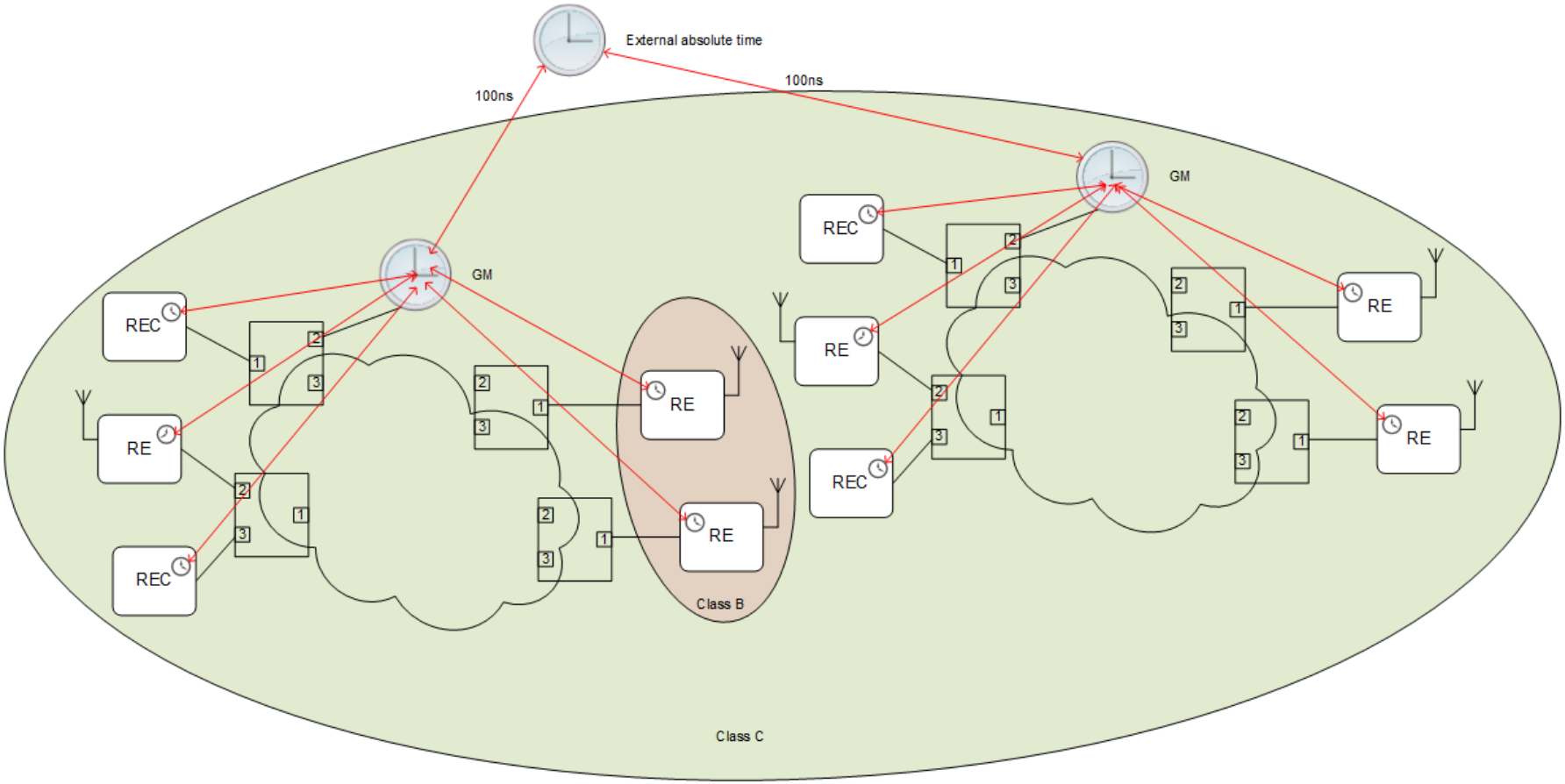
Synchronization timing accuracy

- Class A+: < 10 ns Nice to have
  - **MIMO, Tx-diversity**
- Class A: < 45 ns Must have
  - **CA Intra Contiguous.**
- Class B: < 110 ns Must have
  - **CA Intra Non-Contiguous, CA Inter**
- Class C: < 1.36 µs Must have
  - **LTE TDD**

Synchronization timing accuracy

- Class A+, A and B is the timing accuracy of the slave clock in the RE compared to a common GM clock.
  (No REC need to fulfill Class A+, A or B)
- Class C is the timing accuracy of the slave clock in the RE or REC compared to any GM clock.
  - Here we have allocated 100 ns to the accuracy of the GM clock compared to the real absolute time.

Synchronization timing accuracy

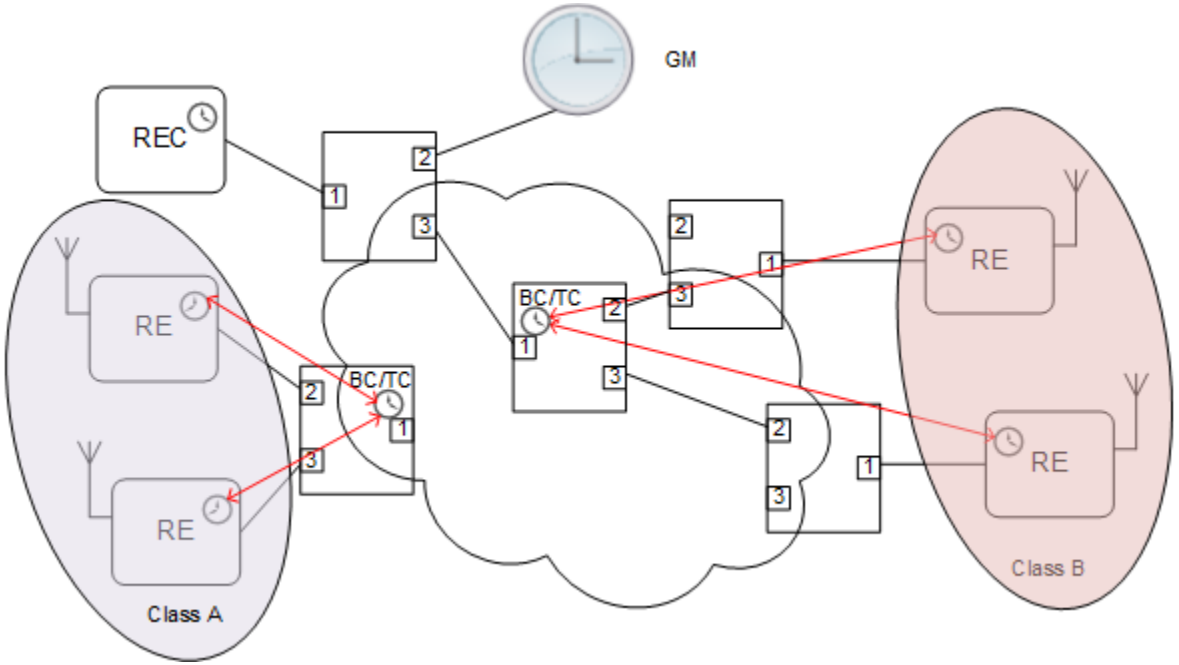


- Example there all REs and RECs need to fulfill Class C and two REs running a feature that require Class B
  - One RE may need to fulfill several Classes, see also following slides for an alternative view on Class A+, A and B.

Synchronization timing accuracy Class A+, A and B

- Alternative informative definition for Class A+, A and B is the timing accuracy of the slave clock in the RE compared to the nearest common BC or TC (between the REs that running a feature that require the specific Class).

Synchronization timing accuracy Class A+, A and B



- Two REs running a feature that require Class A but they have a common BC/TC in the first switch
  - This switch is probably located in the same site as the two REs.
- Two other REs are running a feature that requires Class B and have a common BC/TC further down in the network but much closer than the GM.