3GPP TSG RAN Meeting #88e
Electronic Meeting, June 29 - July 3, 2020

RP-201050

On the UE (in)capability of slot aligned non-SFN-sync DC

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Background

RAN#85 (Sept 2019)

- RP-192345 was endorsed for the late drop on synchronous NR-NR DC (between FR1 and FR2), introducing a new Rel-15 UE capability (i.e. a lack of capability for non-SFN-sync)
  - Inclusion of the bit means the UE is incapable of slot aligned non-SFN-sync DC.
  - Omission of the bit means the UE is capable of slot aligned non-SFN-sync DC.

- The decision was implemented as backward compatible Rel-15 CRs based on the June specification version. Rel-15 CRs were agreed in RP-192346 (introduction of UE capability for NR-DC with SFN synchronization between PCell and PSCell in TS38.306) and RP-192347.

- Rel-16 UEs will not be allowed to use the bit defined in Rel-15.
  - This decision has not yet been reflected in the Rel-16 CRs coming to RAN#88e

- RAN#87 (March 2020) to re-address the issue of mandating Release-15 UEs supporting NR-NR DC to support slot aligned non-SFN-sync DC.
  - This come-back was not discussed at RAN#87e

Discussion and Proposal

- Per the decision of RAN#85, Rel-16 UEs will be mandated to support slot aligned non-SFN-sync DC.
- RAN2 agreed a CR to 37.340 (see below), but did not address the RAN plenary decision in 38.306.

> ~~In this version of the specification,~~ NR-DC ~~assumes slot-level~~ supports the case of no synchronization between PCell and PSCell~~, with no assumption on SFN synchronization~~. However, some UEs may ~~indicate they~~ support NR-DC only if ~~SFN~~ slot-level synchronization between PCell and PSCell is ~~also~~ ensured.

Proposal 1: Rel-16 specifications to be approved in September 2020 must implement the RAN#85 decision that Rel-16 UEs shall disable this capability bit.

- Rel-16 UEs can start being built based on the frozen Rel-16 specifications, which shall disable this capability bit in the September 2020 Rel-16 specifications.
- At that time, the capability to support slot aligned non-SFN-sync DC will be available and can thus be applied to new Rel-15 UEs being produced based on later versions of Rel-15 specifications.

Proposal 2: September 2020 Rel-15 specifications versions and later versions shall not allow a Rel-15 UE to report capability *sfn-SyncNRDC*. A transition period of 6 months (until March 2021) can be introduced in test case definition in RAN5 to allow UEs to get ready for relevant tests.

CR Example for Rel-16 (related to proposal 1)

- Changes to TS 38.306 for Rel-16 (v16.0.0):

4.2.7.12 *NRDC-Parameters*

Definitions for parameters	Per	M	FDD-TDD DIFF	FR1-FR2 DIFF
sfn-SyncNRDC Indicates the UE supports NR-DC (between FR1 and FR2) only with SFN and frame synchronization between PCell and PSCell. If not included by the UE supporting NR-DC, the UE supports NR-DC with slot-level synchronization without condition on SFN and frame synchronization. A UE of this release is not allowed to signal this capability.	UE	No	No	No

CR Example for Rel-15 (related to proposal 2)

- Changes to TS 38.306 for Rel-15 (v15.9.0):

4.2.7.12 *NRDC-Parameters*

Definitions for parameters	Per	M	FDD-TDD DIFF	FR1-FR2 DIFF
sfn-SyncNRDC Indicates the UE supports NR-DC (between FR1 and FR2) only with SFN and frame synchronization between PCell and PSCell. If not included by the UE supporting NR-DC, the UE supports NR-DC with slot-level synchronization without condition on SFN and frame synchronization. A UE of this release is not allowed to signal this capability if the UE has been implemented based on v15.X.0 or later of this specification.	UE	No	No	No