**3GPP TSG RAN WG1 Meeting #110bis-e R1-22xxxxx**

**e-Meeting, October 10th – 19th, 2022**

**Agenda item:** 7.2

**Source:** Moderator (Sharp)

**Title:** Summary of [110bis-e-NR-R16-08] Discussion on the definition of defer duration and conditions of new back-off

**WI:** NR\_unlic-Core

**Document for:** Discussion and Decision

# Introduction

This document is a summary of the following email discussion,

[110bis-e-NR-R16-08] Discussion on the definition of defer duration and conditions of new back-off by Oct 14 – TBD (Sharp)

# Summary of inputs in relation to [110bis-e-NR-R16-08]

## RAN1#110

The following was agreed in RAN1#110 meeting, see [1],

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| Agreement* TP#2, TP#3, TP#4 and TP#5 in R1-2007919 are endorsed in principle and provided to the specification editors for their next update of the Rel-16 and Rel-17 specifications.
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As per decision for email discussion [Post-110-AlignmentCR-37.213], R1-2208306 [2] from the Editor of TS 37.213 (capturing TP#3 and TP#5 in R1-2007919 [3]) was agreed.

During email discussion [Post-110-AlignmentCR-37.213], some concerns were raised on TP#2 in R1-2007919 [3] (reproduced below for convenience).

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| --- | --- |
| TP#2 for TS 37.213

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| --- |
| **<Unchanged parts are omitted>**4.1.1 Type 1 DL channel access procedures**<Unchanged parts are omitted>**The defer duration $T\_{d}$ consists of duration $T\_{f}=16us$ immediately followed by $m\_{p}$ consecutive sensing slot durations $T\_{sl}$, and $T\_{f}$ includes a sensing slot duration $T\_{sl}$ at start of $T\_{f}$. **<Unchanged parts are omitted>** |

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## RAN1#110bis-e

R1-2209800 [4] was submitted to RAN1#110bis-e, where the following observations and proposal in relation to TP#2 in R1-2007919 [3] were made,

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| --- |
| ***Observation 1:*** *The definition of “defer duration” has been implemented in accordance with RAN1 agreements in both TS 36.213 and TS 37.213.****Observation 2:*** *The intention of the sentence “if the channel has been sensed to be not idle during any of the sensing slot durations of a defer duration* $T\_{d}$*” in clause 4.1.1 of TS 37.213 was as follows,** *“the channel has to be continuously idle for at least initial defer duration immediately before the transmission”*.

***Proposal:*** *Capture Observation 2 in R1-2209800 as a conclusion in Chair’s note.* |

# Discussion

## Round 1

### The case of no sensing slot being idle in a defer duration

As pointed out in R1-2209800 [4], there is a sentence in clause 4.1.1 of TS 37.213 (*“if the channel has been sensed to be not idle during any of the sensing slot durations of a defer duration* $T\_{d}$*”*) that seems to conflict with the definition of defer duration, i.e.

* On one hand, by definition, a defer duration always starts with an idle sensing slot;
* On the other hand, if the condition “*the channel has been sensed to be not idle during any of the sensing slot durations of a defer duration* $T\_{d}$” is satisfied, then there is no idle sensing slot in the corresponding defer duration.

In R1-2209800 [4], it was proposed to conclude in RAN1 that the actual intention of the above mentioned sentence in clause 4.1.1 of TS 37.213 was that “*the channel has to be continuously idle for at least initial defer duration immediately before the transmission*”, see Observation 2 in R1-2209800 [4].

#### Q1: Do you agree to capture Observation 2 in R1-2209800 as a conclusion in RAN1#110bis-e chair’s notes?

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| --- | --- | --- |
| **Company** | **Answer (Yes/No)** | **Comment** |
| Intel |  | The time structure of the defer duration in case $m\_{p}$=1 is ‘9us CCA slots + 7us + several 9us CCA slots’. Since it is not required for UE to do CCA measurement in the 7us interval, it is not accurate to say the channel has to be continuously idle. Therefore, if companies are fine to capture the behaviour as an observation, the text within Observation 2 could be updated as follows: *the channel has to be ~~continuously~~ idle ~~for at least initial~~ in all CCA slots within the defer duration immediately before the transmission* |
| Samsung | Yes |  |
| DOCOMO | Yes | Also fine with Intel’s further clarification |
| Sharp | Yes | As the proponent we support capturing Observation 2 in R1-2209800 as a conclusion. Also fine with Intel’s version but prefer to replace “CCA slots” with “sensing slots” because the latter is clearly defined in the specification. |
| Huawei, HiSilicon | Yes | Agree with the modifications suggested by both Intel and Sharp, i.e.*the channel has to be ~~continuously~~ idle ~~for at least initial~~ in all ~~CCA~~sensing slots within the defer duration immediately before the transmission* |
| Ericsson | Yes | Agree with the Modification by HW as well. Editor (myself 😊) didn’t capture TP#2 and #TP4 because of the issue with TP#2 (that now seems to be resolved) and dependency of these two TPs.After endorsing the conclusion, it would be good to ask chair to assign Editor to capture TP#4 from last meeting as Alignment CR.  |

### Other issues (if any)

#### Q2: If you think there is any other issue(s) that should be discussed as part of [110bis-e-NR-R16-08], please specify. Otherwise please skip this question.

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| **Company** | **Comment** |
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## Round 2

### The case of no sensing slot being idle in a defer duration

It seems the general direction of capturing something like Observation 2 in R1-2209800 as a conclusion is agreeable. The following is thus proposed for discussion in Round 2, by adopting companies’ suggestions in Round 1.

Proposal for conclusion

The intention of the sentence *“if the channel has been sensed to be not idle during any of the sensing slot durations of a defer duration* $T\_{d}$*”* in clause 4.1.1 of TS 37.213 was as follows,

* *The channel has to be idle in all sensing slots within the defer duration immediately before the transmission*.

#### Q3: Do you agree with the above proposal for conclusion?

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| --- | --- | --- |
| **Company** | **Answer (Yes/No)** | **Comment** |
| DOCOMO | Yes |  |
| Intel | Yes |  |
| Sharp | Yes |  |
| vivo | Yes |  |
| Huawei, HiSilicon | Yes |  |
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# Summary

[TBD]

# References

1. RAN1#110 Chairman’s notes.
2. R1-2208306, “Rel-16 editorial corrections for TS 37.213”, Ericsson, RAN1#110.
3. R1-2207919, “Summary of comments on R1-2206935 miscellaneous corrections”, Moderator (Sharp), RAN1#110.
4. R1-2209800, “On definition of defer duration and conditions of new back-off”, Sharp, Ericsson, RAN1#110bis-e.
5. R1-2206935, “Miscellaneous corrections to TS 37.213”, Sharp, RAN1#110.