**3GPP TSG RAN WG1 #105-e R1-210xxxx**

**e-Meeting, May 10th – 27th, 2021**

**Agenda item:** 7.2.11

**Source:** Moderator (NTT DOCOMO, INC.)

**Title:** Summary on [105-e-NR-UEFeature-Others-01]

**Document for:** Discussion and Decision

1. Introduction

This contribution summarizes the following email discussion.

[105-e-NR-UEFeature-Others-01] Email discussion/approval on UE features that are not dedicated to specific Rel-16 WI/TEI, till 5/24 (Hiroki, NTT DOCOMO)

* For FG22-10, add below sentence to the note.
  + For *pdcch-MonitoringAnyOccasionsWithSpanGap*, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the different SCSs in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.

1. Discussion on New FGs that are not dedicated to a specific Rel-16 work item/TEI
   1. FG 22-10

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22. NR Others | 22-10 | Support of pdcch-MonitoringAnyOccasionsWithSpanGap in case of cross-carrier scheduling with different SCSs in the scheduling cell and the scheduled cell | Support of pdcch-MonitoringAnyOccasionsWithSpanGap in case of cross-carrier scheduling with different SCSs in the scheduling cell and the scheduled cell   * Candidate values: {Interpretation2, Interpretation3} | 3-5b, 18-5 | Yes | N/A |  | Per UE | No | No | N/A | Candidate values: {Interpretation2, Interpretation3}  If UE indicates Interpretation2, it supports 22-10 as long as pdcch-MonitoringAnyOccasionsWithSpanGap is supported for the band of the scheduling/triggering/indicating cell.  If UE indicates Interpretation3, it supports 22-10 as long as pdcch-MonitoringAnyOccasionsWithSpanGap is supported in both the band of the scheduled/triggered/indicated cell and the band of the scheduling/triggering/indicating cell. | Optional with capability signalling |

Following proposal is made in a contribution.

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| --- | --- |
| [1] | Below agreements were made in RAN1#104-e meeting.  ***Agreement***  *Regarding the interpretation of UE capabilities in case of cross-carrier operation,* ***for cross-carrier scheduling with the same SCS in the scheduling cell and the scheduled cell****, RAN1 clarifies that support of* pdcch-MonitoringAnyOccasionsWithSpanGap *is based on both the support of this capability for the band of the scheduled/triggered/indicated cell and the support of this capability for the band of the scheduling/triggering/indicating cell.*   * *Note: For pdcch-MonitoringAnyOccasionsWithSpanGap, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the same SCS in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.*   ***Agreement***  ***For cross-carrier scheduling with different SCSs in the scheduling cell and the scheduled cell****, RAN1 introduces new Rel-16 UE capability to clarify the interpretation of* pdcch-MonitoringAnyOccasionsWithSpanGap *in case of cross-carrier operation.*   * *The detailed design of this new Rel-16 UE capability is to be discussed under Rel-16 UE feature session.*   ***Agreement***  *LS to RAN2 on interpretation of UE features in case of cross-carrier operation is endorsed in* [*R1-2102085*](https://www.3gpp.org/ftp/tsg_ran/TSG_RAN/TSGR_91e/Docs/R1-2102085.zip)  FG 22-10 was introduced to reflect the second agreement listed above. However, one minor issue to clarify for the FG is whether the number of spans/span-gap follow those of the scheduling cell or scheduled cell. We propose to follow the same principle as CCS with same SCS case (like the note in first agreement above).  **Proposal : For FG 22-10, add below sentence to the note column:**  **For *pdcch-MonitoringAnyOccasionsWithSpanGap*, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the different SCSs in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.** |

Based on the above, following proposal can be discussed in RAN1#105-e meeting.

**FL proposal #1**

* **For FG22-10, add below sentence to the note.**
  + **For *pdcch-MonitoringAnyOccasionsWithSpanGap*, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the different SCSs in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.**

Companies are encouraged to check above FL proposal and to provide feedback if any in below. If you cannot accept the FL proposals, please put your company name after “Cannot accept the proposals” below and please provide your alternative proposal (in your comment) which could be acceptable to all in your consideration.

Cannot accept the proposal:

|  |  |
| --- | --- |
| Company | Comment |
| ZTE | Ok with the above FL proposal. |
| Huawei, HiSi | Fine with the proposal. |
| MediaTek | Support the proposal |
| Apple | Support |
| vivo | We are generally fine with the principle, but wondering how to capture this principle. Would it only be captured as a Note in RAN1 chairman’s note, or be captured in spec (e.g., in Annex A.5: General differentiation of capabilities in Cross-Carrier operation in TS 38.306), similar to other FGs? |
| Qualcomm | Support the proposal |
| Ericsson | Support the proposal – Regarding vivo comment, we think this should be captured in specification (e.g. as part of 22-10 description in 38.306) to make it clear what this UE capability means. |
| Moderator (NTT DOCOMO) | Thank you very much for the feedbacks so far!  Based on the vivo’s question and Ericsson’s reply, it can be clarified that the proposal is to capture the note in RAN1 NR UE features list and to ask RAN2 to update corresponding description in TS38.306. |
| DOCOMO | Support the proposal and fine to send a LS to RAN2 to update the corresponding description in TS38.306. |
| vivo | Thanks for your clarification. We are fine with this approach, and in this case I think the proposal itself should be updated, e.g., including “send an LS to RAN2 to update the TS 38.306 …”.  Further, maybe I miss something, but it seems the note for the same SCS case is not sent to RAN2, nor captured in 306 either. Wouldn’t it be consistent to also capture that part in the spec? |
| Moderator (NTT DOCOMO) | Thank you very much for the feedbacks!  Based on the feedbacks, we can check whether the updated proposal based on vivo’s comment is acceptable for all. |

**Updated FL proposal #1**

* **For FG22-10, add below sentence to the note in RAN1 UE features list to be sent to RAN2.**
  + **For *pdcch-MonitoringAnyOccasionsWithSpanGap*, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the different SCSs in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.**
* **In the LS to be sent together with updated RAN1 UE features list, ask RAN2 to update corresponding description for FG22-10 (*pdcch-MonitoringAnyOccasionsWithSpanGapCrossCarrierSch-r16*) in TS 38.306 as well as to add following note for FG6-10 (CCS with same numerology, *crossCarrierScheduling-SameSCS*) in TS 38.306.**
  + **For *pdcch-MonitoringAnyOccasionsWithSpanGap*, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the same SCS in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.**

Companies are encouraged to check above FL proposal and to provide feedback if any in below. If you cannot accept the FL proposals, please put your company name after “Cannot accept the proposals” below and please provide your alternative proposal (in your comment) which could be acceptable to all in your consideration.

Cannot accept the proposal:

|  |  |
| --- | --- |
| Company | Comment |
| Ericsson | We are OK with below updated FL proposal#1 for 22-10.  Regarding update to FG 6-10, we are OK in principle. However, this is related to Rel-15 feature and potential Rel-15 spec update, see RAN1 LS in R1-2102085. Then, it would be cleaner to draft a separate LS for it (related to Rel-15) and refer to the already-sent LS in 2085. |
| Moderator (NTT DOCOMO) | Thank you very much for the feedback!  Based on the feedback, the proposal can be further updated based on Ericsson’s suggestion |

### **Updated FL proposal #1**

* **For FG22-10, add below sentence to the note in RAN1 UE features list to be sent to RAN2.**
  + **For *pdcch-MonitoringAnyOccasionsWithSpanGap*, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the different SCSs in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.**
* **In the LS to be sent together with updated RAN1 UE features list, ask RAN2 to update corresponding description for FG22-10 (*pdcch-MonitoringAnyOccasionsWithSpanGapCrossCarrierSch-r16*) in TS 38.306**
* **~~Draft LS to add following note for FG6-10 (CCS with same numerology,~~ *~~crossCarrierScheduling-SameSCS~~*~~) in TS 38.306 (with referring R1-2102085) – Ajit (Ericsson)~~**
  + **~~For~~ *~~pdcch-MonitoringAnyOccasionsWithSpanGap~~*~~, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the same SCS in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.~~**

Companies are encouraged to check above FL proposal and to provide feedback if any in below. If you cannot accept the FL proposals, please put your company name after “Cannot accept the proposals” below and please provide your alternative proposal (in your comment) which could be acceptable to all in your consideration.

Cannot accept the proposal:

|  |  |
| --- | --- |
| Company | Comment |
| Ericsson | We are OK with below updated FL proposal#1 for 22-10.  Regarding update to FG 6-10, we are OK in principle. However, this is related to Rel-15 feature and potential Rel-15 spec update, see RAN1 LS in R1-2102085. Then, it would be cleaner to draft a separate LS for it (related to Rel-15) and refer to the already-sent LS in 2085. |
| Moderator (NTT DOCOMO) | Thank you very much for the feedback!  Based on the feedback, the proposal can be further updated based on Ericsson’s suggestion |
| Huawei, HiSilicon | It is not really necessary to have a separate LS to RAN2 only for this small change, it can be included in the LS together with other UE feature updates as long as we make it clear the change is for Rel-15. We don't think it will cause any confusion to RAN2. |
| vivo | Given that the note of same SCS case has already been sent to RAN2 in R1-2102085, an additional LS to remind RAN2 seems unnecessary. We can try to make ti clear in the LS to avoid any confusion. |
| Moderator (NTT DOCOMO) | Thank you very much for the feedback!  Based on the feedbacks and as Ericsson and ZTE clarified regarding current RAN2 status, we can focus on FG22-10 as below. **Updated FL proposal #1**  * **For FG22-10, add below sentence to the note in RAN1 UE features list to be sent to RAN2.**   + **For *pdcch-MonitoringAnyOccasionsWithSpanGap*, the supported set (set1, set2 or set 3) for cross-carrier scheduling with the different SCSs in the scheduling cell and the scheduled cell is still based on the indicated value for the band of the scheduling cell.** * **In the LS to be sent together with updated RAN1 UE features list, ask RAN2 to update corresponding description for FG22-10 (*pdcch-MonitoringAnyOccasionsWithSpanGapCrossCarrierSch-r16*) in TS 38.306** |

1. Conclusion

TBD

Reference

[1] R1-2105790 Remaining details of Rel-16 NR UE features Ericsson

[2] R1-2105814 Remaining issues on NR Rel-16 UE features Nokia, Nokia Shanghai Bell

[3] R1-2104120 Updated RAN1 UE features list for Rel-16 NR after RAN1#104bis-e Moderators (AT&T, NTT DOCOMO, INC.)