3GPP TSG RAN WG2 Meeting #131 R2-250xxxx
Bangalore, India, August 25th– 29th, 2025

**Agenda item: 8.5.1**

**Source: Ericsson**

**Title: Report of [POST130][107][NES] (Ericsson)**

**Document for: Discussion and Decision**

# 1 Introduction

This is a summary document on collection of comments to TS 38.331 CR during below running CR discussion:

* **[POST130][107][NES] (Ericsson)**

 **Scope:** Update 38.331 running CR (also including this meeting’s agreements and latest other RAN WGs’ inputs) and remaining essential RRC open issues (including to continue discussion and make conclusion on P7, P12, P13, and P14 from R2-2504704).

 **Intended outcome:** 38.331 running CR and remaining essential RRC open issues (including discussion summary on P7, P12, P13 and P14 from R2-2504704).

**Deadline:** Long email discussion.

DL for the email discussion is 8th of August. Please try to provide your input by end of 5th August to allow time to discussion/resolution.

# 2 Contact Points

Respondents to the email discussion are kindly asked to fill in the following table.

|  |  |  |
| --- | --- | --- |
| Company | Name | Email Address |
| OPPO | Qianxi Lu | qianxi.lu@oppo.com |
|  Samsung | Anil Agiwal | anilag@samsung.com |
| vivo | Jianhui Li | jianhui.li@vivo.com |
| LGE | Han Cha | han.cha@lge.com |
| CATT | Rui Zhou | zhourui@catt.cn |
| Fujitsu | Katsunari Uemura | u-katsunari@fujitsu.com |
| Sharp | LIU Lei | lei.liu@cn.sharp-world.com |
| Xiaomi | Li Zhao | Zhaoli6@xiaomi.com |
| Google | Ming-Hung Tao | mhtao@google.com |
| Apple | Peng Cheng | Pcheng24@apple.com |

# 3 FFSs or ENs in running RRC CR

5.2.1

Editor’s note: FFS if anything is needed for OD-SIB1

**Q1: Is there a need to add text for OD-SIB1 in Section 5.2.1 or can the EN be removed?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| vivo | It can be removed. There is not any legacy OD-OSI related description either. |  |
| CATT  | - the *SIB1* is transmitted on the DL-SCH with a periodicity of 160 ms and variable transmission repetition periodicity within 160 ms as specified in TS 38.213 [13], clause 13.Suggest a change to as follows: - the *SIB1* is transmitted on the DL-SCH with a periodicity of 160 ms and variable transmission repetition periodicity within 160 ms as specified in TS 38.213 [13], clause 13, or is transmitted on the DL-SCH based on the on-demand SIB1 request procedure. |  |
| Fujitsu | Suggestion from CATT can be covered by the legacy text. So, we think EN can be removed. |  |
| Sharp | No need to add text for OD-SIB1 and EN can be removed. |  |
| Xiaomi | No need to add text for OD-SIB1. |  |
| Google | EN can be removed without adding text for OD-SIB1. |  |
| Huawei | Our view is that it should be mentioned that SIB1 can be transmitted on demand, similar to what we have in stage-2 section 7.3.1. |  |
| Apple | We think this EN can be removed.  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

5.2.2.2.2

Editor’s note: FFS phrasing for paging adaptation pos only, that is those occasions that are not also configured for legacy.

**Q2: Which option or option modified is preferred?**

1. **Adress the aspect in 5.2.2.2.2 as in current running CR or slightly modify the text in that section.**
2. **Delete the additions from 5.2.2.2.2 and add in the following field descriptions instead:**

**pagingAdaptation-NS**

Number of paging occasions per paging frame for paging adaptation. The UE supporting paging adaptation ignores this field in RRC\_CONNECTED and uses *ns* instead when monitoring paging occasions.

**pagingAdaptationNAndPagingFrameOffset**

Used to derive the number of total paging frames in T (corresponding to parameter N in TS 38.304 [20]) and paging frame offset (corresponding to parameter PF\_offset in TS 38.304 [20]). A value of oneSixteenthT corresponds to T / 16, a value of oneEighthT corresponds to T / 8, and so on. The UE supporting paging adaptation ignores this field in RRC\_CONNECTED and uses *nAndPagingFrameOffset* instead when monitoring paging occasions..

|  |  |  |
| --- | --- | --- |
| **Company** | 1. **or b)**
 | **Rapporteur response** |
| OPPO | Option a) is preferred since ultimately the intention is to avoid reading new POs in RRC\_CONNECTED. |  |
| Samsung | In our view, changes in field description (as suggested in b)) are needed to clarify that UE does not apply these in RRC\_CONNECTED. This is a clean approach. |  |
| vivo | Option a) is clean and enough |  |
| LGE | Option a) is preferred. Option a) clearly specifies that paging adaptation enhancement is not applied to UEs in RRC connected state. |  |
| CATT | Option a) is preferred |  |
| Xiaomi | Prefer option a) |  |
| Google | From the UE implementation perspective, option a) is more generic and hence we prefer option a) more.  |  |
| Huawei | Option a) with revisions.From RRC perspective, there is no specific definition for “paging adaptation”, the so-called paging adaptation is only extension of n and ns.Maybe the text can be simplified to:UEs in RRC\_CONNECTED shall monitor for SI change indication in any paging occasion derived by *nAndPagingFrameOffset* and *ns* at least once per modification period. |  |
| Apple | Option a) is preferred. On Huawei suggested is fine, or put a reference to 38.300 on definition of “paging adaptation”. |  |
|  |  |  |

**5.2.2.3.3x**

Editor’s note:

FFS: if there is need to emphasize it is normal uplink

**Q3: Can the EN be removed or is further discussion needed?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| Samsung | Its ok to specify normal uplink and remove FFS. Note that discussion on whether to support OD-SIB1 for SUL is pending. So we need a new EN for SUL case. |  |
| vivo | It depends on the conclusion on whether to support OD-SIB1 on SUL. If SUL is not supported, then we can keep the ‘on normal uplink’. We can keep the FFS for now. |  |
| LGE | Same view as vivo |  |
| CATT | Same view as vivo |  |
| Fujitsu | Agree with vivo. |  |
| Xiaomi | Agree with vivo. Discussion on SUL has not been concluded yet. |  |
| Google | Agree with vivo. |  |
| Huawei | We think the EN can be removed. From the RRC configuration it is already clear that it applies to NUL.Our understanding is that UL WUS cannot be sent on SUL, but after SIB1 is received, UE can still perform RACH on SUL as in legacy (i.e. UE can use SUL after SIB1 is received). |  |
| Apple | We think this EN can be removed. Whether to support SUL is a separate issue, which was already agreed to conclude in next RAN2 meeting:R2-2503391 On-demand SIB1 Samsung discussion Rel-19 Netw\_Energy\_NR\_enh-Core* Revisit it next meeting.

Thus, new EN is not needed. |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**5.2.2.3.3x**

Editor’s note:

FFS reference for where are the details on how UE is obtaining SIB1, possibly RAN1 specification

**Q4: Add a reference to TS 38.213 Section 23 or remove the EN?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| OPPO | We support to add reference to R1 spec and then remove the EN. |  |
| Samsung | We support to add reference to R1 spec and then remove the EN. |  |
| vivo | Agree with above. |  |
| LGE | We support to add reference to R1 spec and then remove the EN. |  |
| CATT | Share the same view with OPPO and Samsung. |  |
| Fujitsu | Agree with the above companies. |  |
| Sharp | OK to add reference to TS 38.213 and remove the EN. |  |
| Xiaomi | Agree with above. |  |
| Google | Same view as above. |  |
| Huawei | A reference to RAN1 spec is useful. |  |
| Apple | Support to add RA1 spec reference, and remove EN. |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

***SIBxx***

Editor’s note:

FFS to group some parameters under subIEs like frequencyInfoUL

**Q5: Please comment if current structure is fine or suggest a grouping?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| vivo | It’s only a matter of preference. The current structure is fine. |  |
| Huawei | frequencyInfoUL can be separated as in R1-2503243.Generally, we should align grouping with the RAN1 parameter list, i.e. the following structure:uplink-WUS(OD-SIB1)-Config PhysCellId ARFCN-ValueNR rsrp-ThresholdSSB prach-RootSequenceIndex msg1-SubcarrierSpacing restrictedSetConfig frequencyInfoUL frequencyBandList absoluteFrequencyPointA offsetToCarrier p-Max ULSubCarrierSpacing SIB1-RequestConfig ss-PBCH-BlockPower SSB-positionInBurst tdd-UL-DL-ConfigurationCommon rach-OccasionSIB1 rach-ConfigSIB1 prach-ConfigurationIndex msg1-FDM msg1-FrequencyStart zeroCorrelationZoneConfig preambleReceivedTargetPower preambleTransMax powerRampingStep ra-ResponseWindow ssb-perRACH-Occasion sib1-RequestPeriod sib1-RequestResources ra-PreambleStartIndex ra-AssociationPeriodIndex ra-ssb-OccasionMaskIndex searchSpaceZero controlResourceSetZero ra-SearchSpace n-TimingAdvanceOffset ssb-PeriodicityServingCell k-ssb od-sib1-WindowDuration od-sib1-windowStartOffset sib1-pdcchRestrictionToPRACHAssociatedSSBs CarrierBandwidth locationAndBandwidth offsetToPointA frequencyBandListDL |  |
| Samsung | RRC structure is RAN2 responsibility and not RAN1. No need to blindly follow RAN1 structure. |  |
| Apple | Current structure can work and we think it is fine. |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

***SIBxx***

Editor’s note:

FFS to separate IE OD-SIB1 as own IE, for review purposes it is here now.

**Q6: Keep IE OD-SIB1 under SIBxx or not?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| vivo | We can keep it under SIBxx for R19. If there is any further NES evolution in NR, we can make it independent in future release. |  |
| Huawei | It can be kept in SIBxx. |  |
| Apple | Yes, it can be kept in SIBxx |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

***SIBxx***

Editor’s note:

FFS: value for maxNrofODSIB1, maxPCI, od-sib1-windowStartOffset

**Q7: Suggest values for these parameters or indicate if another WG needs to be liaised?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| OPPO | At least for od-sib1-windowStartOffset, we assume R1 can decide on its value. |  |
| vivo | RAN1 should decide od-sib1-windowStartOffset. The rest can be suggested by the RRC rapporteur if not decided by RAN1, e.g. maxNrofODSIB1/ maxPCI is the closest number of power(2) to (maxSizeOfSIB(2976)/maxSizeOfOdSIB1config(?))...... maybe 8? |  |
| CATT | maxNrofODSIB1, maxPCI could be determined by RAN2 based on the network deployment, the od-sib1-windowStartOffset needs to ask RAN1. |  |
| Huawei | Depends on RAN1. |  |
| Apple | We can suggest maxNrofODSIB1=64, maxPCI=8 (i.e. up to 8 freq and up to 8 cell per freq, similar to existing EMR:maxFreqIdle-r16 INTEGER ::= 8 -- Maximum number of carrier frequencies for idle/inactive measurementsmaxCellMeasIdle-r16 INTEGER ::= 8 -- Maximum number of cells per carrier for idle/inactive measurements |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

***SIBxx***

Editor’s note:

FFS: optionality of the parameters

**Q8: Suggest optionality values for these parameters or indicate if another WG needs to be liaised, or confirm current?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| Huawei | Some parameters were designed as mandatory by RAN1, which seem to be already reflected by the rapporteur. Other parameters should be optional by default, unless proved otherwise. |  |
| Samsung | sib1-RequestConfig. rach-OccasionsSIB1, rach-ConfigSIB1 needs to be mandatory. Otherwise, how UE will perform SIB1 request.For others we can check with RAN1 |  |
| Apple | Same view as Samsung. |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

***IE CellGroupConfig***

Editor’s note:

FFS value for maxNrofOD-SSB

**Q9: Suggest value for this parameter or indicate if another WG needs to be liaised?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| LGE | RAN1 made an agreement for this issue as follows: **Agreement**For a cell supporting on-demand SSB SCell operation, for configuring *od-ssb-nrofBurst* of which the value range is {N2 integer values},* N2= 8
	+ Note: This is updated from the previous RAN1 agreement.
* The following values for *od-ssb-nrofBurst* are taken as the starting point and to be confirmed in RAN1#122
	+ For FR1, the value range of *od-ssb-nrofBurst* is {5, 10, 15, 20, 25, 30, 40, 50}.
	+ For FR2, the value range of *od-ssb-nrofBurst* is {25, 30, 40, 50, 75, 100, 150, 200}.

We suggest to wait RAN1 confirmation for the value range. |  |
| Apple | We think it can be 16 (4bit) or 32 (5bit).@LGE, the *od-ssb-nrofBurst* is for implicit deactivation. While Rapporteur question is maximum number of OD-SSB config (whose index is included in MAC-CE). |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

***DownlinkConfigCommonSIB***

Editor’s note:

FFS: The values for *pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO* firstPDCCH-MonitoringOccasionOfPO for paging adaptations.

**Q10: Please see Q14a and Q14b in Section4 for the FFS.**

***UE-RadioPagingInfo***

Editor’s note: FFS details

**Q11: Preference is to move this into capability email discussion, please respond if you agree/disagree?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| OPPO | Agree |  |
| Samsung | Agree |  |
| LGE | Agree  |  |
| CATT | Agree |  |
| Fujitsu | Agree |  |
| Sharp | Agree |  |
| Huawei | Agree |  |
| Apple | We are confused: these two parameters are already agreed in RAN2#130:Proposal 4: The maximum PO per PF, i.e., maxPO-perPF-r19 is 8.Proposal 5: The maximum offset value is extended to 32 radio frames.Proposal 6: The value range for the new optional firstPDCCH-MonitoringOccasionOfPO-r19 field parameter is extended to accommodate SCS=480kHz and N=T/32.* Proposal 3, 4, 5 and 6 are agreed.

Proposal 10: The maximum number of PEI occasion per paging frame is extended to 8.Proposal 11: The maximum offset value is extended to 32 radio frames.* Proposal 9, 10, and 11 are agreed.
 |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

***si-BroadcastStatus***

Indicates if the SI message is being broadcasted or not. Change of *si-BroadcastStat*us should not result in system information change notifications in Short Message transmitted with P-RNTI over DCI (see clause 6.5). The value of the indication is valid until the end of the BCCH modification period when set to *broadcasting.* When *SIB19* is scheduled in an NTN cell, the *si-BroadcastStatus* for the mapped *SIB19* is set to *broadcasting*. When *SIB22* is scheduled in an ATG cell, the *si-broadcastStatus* for the mapped *SIB22* is set to *broadcasting*. FFS: how to capture that a CONNECTED MODE UE supporting OD-SIB1 who is in a cell that does not broadcast SIB1, understands that the stored SIB1 is the latest SIB1. E.g. “The UE supporting OD-SIB1 in RRC\_CONNECTED considers the stored SIB1 as the latest SIB1.”

**Q12: Can “The UE supporting OD-SIB1 in RRC\_CONNECTED considers the stored SIB1 as the latest SIB1” be added to the field description of *si-BroadcastStatus* to address the FFS?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| OPPO | OK for us. |  |
| Samsung | ok |  |
| vivo | We don’t think it’s needed in the Field description as we already have the normative text for it. It’s redundant. |  |
| LGE | It is unclear whether the ‘latest SIB1’ means ‘SIB1 including latest ***si-BroadcastStatus***. A clearer way to express it might be: “The UE supporting OD-SIB1 in RRC\_CONNECTED considers the ***si-BroadcastStatus*** in the stored SIB1 is up-to-date”In addition, such consideration should not be made when the UE is connected to a legacy cell with always-on SIB1. An additional condition, such as ‘if SIB1 is being transmitted in on-demand in this cell’, is needed. |  |
| CATT | OK |  |
| Fujitsu | OK |  |
| Sharp | Generally OK. The meaning of “in cell that does not broadcast SIB1” also needs to be added.  |  |
| Xiaomi | We don’t think it is appropriate to add to the field description of si-BroadcastStatus as OD-SIB1 does not use that parameter. |  |
| Google | If something has to be clarified in the field description, we prefer the clarification from LGE. |  |
| Huawei | Yes, this needs to be captured. |  |
| Apple | Agree with Rapporteur suggested wording. |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# 5 RRC CR

Further comments on the RRC CR.

Please review carefully the field descriptions of the L1 parameters which are in many cases based on the excel input as a starting point.

For example, the *OD-SSB-Config* field descriptions contain terminology like case#1, case#2 and always-on SSB which should be rewritten.

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments RRC CR** | **Rapporteur response** |
| OPPO001 | Within OD-SIB1-Config***carrierFreq***Identifies the carrier frequency for which this configuration is valid.[OPPO] Do I understand it correctly that it should be mapped to the R1 parameter list of “ Indicate the absolute radio frequency channel number (ARFCN) for SSB of the cell the UL WUS configuration would apply”, where the yellow part helps to clarify the targeted frequency, since ‘carrier-frequency’ is unclear.[Huawei] Agree, in our understanding this was clarified with a Note in RAN1: “ARFCN-ValueNR is used to indicate the absolute radio frequency channel number (ARFCN) for SSB of NES cell.”[Apple] We need to added “ Identifies the ~~carrier frequency~~ ARFCN for SSB of NES cell for which this configuration is valid.  |  |
| OPPO002 | sib1-RequestResources-r19 SEQUENCE (SIZE (1..maxSIB1-Message)) OF SIB1-RequestResources-r19,[OPPO] it comes from SI-RequestConfig, si-RequestResources SEQUENCE (SIZE (1..maxSI-Message)) OF SI-RequestResourcesBut there is a single target for **SIB1**, so the sequence is not needed in our understanding.[Samsung]: Agree with OPPO. There is no need for list. Sequence should be removed.[vivo] Agree with OPPO[Huawei] same understanding[Apple] Agree OPPO. |  |
| OPPO003 | RACH-ConfigSIB1-r19 ::= SEQUENCE { prach-ConfigurationIndex-r19 INTEGER (0..255), msg1-FDM-r19 ENUMERATED {one, two, four, eight}, msg1-FrequencyStart-r19 INTEGER (0..maxNrofPhysicalResourceBlocks-1), zeroCorrelationZoneConfig-r19 INTEGER(0..15), preambleReceivedTargetPower-r19 INTEGER (-202..-60), preambleTransMax-r19 ENUMERATED {n3, n4, n5, n6, n7, n8, n10, n20, n50, n100, n200}, powerRampingStep-r19 ENUMERATED {dB0, dB2, dB4, dB6}, ra-ResponseWindow-r19 ENUMERATED {sl1, sl2, sl4, sl8, sl10, sl20, sl40, sl80}}[OPPO] it seems we can directly reuse RACH-ConfigGeneric rather than redefining a new IE.[Huawei] agree[Apple] Agree OPPO. |  |
| OPPO004 | SIB1-RequestResources-r19 ::= SEQUENCE { sib1-ra-PreambleStartIndex-r19 INTEGER (0..63), sib1-ra-AssociationPeriodIndex-r19 INTEGER (0..15) OPTIONAL, -- Need R sib1-ra-ssb-OccasionMaskIndex-r19 INTEGER (0..15) OPTIONAL -- Need R}[OPPO] it seems we can directly reuse SI-RequestResouces rather than redefining a new IE.[Samsung]: Ok to use separate IE as purpose is different.[Huawei] agree[Apple] Agree OPPO. |  |
| OPPO005 |  firstPDCCH-MonitoringOccasionOfPO-r19 CHOICE { sCS15KHZoneT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS30KHZoneT-SCS15KHZhalfT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS60KHZoneT-SCS30KHZhalfT-SCS15KHZquarterT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZoneT-SCS60KHZhalfT-SCS30KHZquarterT-SCS15KHZoneEighthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZhalfT-SCS60KHZquarterT-SCS30KHZoneEighthT-SCS15KHZoneSixteenthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS),  sCS480KHZoneT-SCS120KHZquarterT-SCS60KHZoneEighthT-SCS30KHZoneSixteenthT-SCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZhalfT-SCS120KHZoneEighthT-SCS60KHZoneSixteenthT-SCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZquarterT-SCS120KHZoneSixteenthT-SCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneEighthT-sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneSixteenthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS) } OPTIONAL -- Need R ]] } [[ pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19 CHOICE { sCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS) } OPTIONAL, -- Cond OtherBWP  pagingAdaptationFirstPDCCH-MonitoringOccasionOfPEI-O-r19 CHOICE { sCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS) } OPTIONAL -- Cond InitialBWP-Paging ]] }[OPPO] Compared with the implementation in PDCCH-ConfigCommon, it seems the yellow part is the delta part, Question-1: Do we really need the implementation in PDCCH-ConfigCommon for PO, considering the following conclusion and the condition of “Cond OtherBWP”?* Paging clustering/bundling/adaptation is not supported/applied in RRC\_CONNECTED.

[Samsung]: Its needed for BWP other than InitialDownlinkBWP (e.g.  *initialDownlinkBWP-RedCap)*[OPPO] Thanks for the point from Samsung. After some offline, we reached the consensus that for **non-Redcap** case, the PO location configuration @ *PDCCH-ConfigCommon* is \***not**\* needed. For Redcap, I agree it is feasible to configure PO location @ *PDCCH-ConfigCommon*. Yet we are not sure whether we can easily extend the applicable scenario for NES to (e)Redcap, which should be confirmed by R2 first. E.g., the capability for supporting PO bundling within *initialDownlinkBWP-RedCap* may not be covered by legacy (e)Redcap capability or the new NES capability for non-redcap UE. We are still checking this issue, and may update our view later.Question-2: Just wonder whether we want to remove the yellow part.[Samsung]: This should not be removed as other values of N such T, T/2, T/4, T/8 and T/16 can be configured for paging adaptation.[OPPO] we agree the setting should be aligned with pagingAdaptationNAndPagingFrameOffset-r19, anyway, if we would like to avoid value other than T/32, the corresponding value in pagingAdaptationNAndPagingFrameOffset-r19 has to be removed as well. Or we keep the values other than T/32, and then changes suggested in Samsung003 should be applied.[Apple] We agree with Samsung. The highlighted part should not be removed. We can provide a complete list for Rapporteur reference:firstPDCCH-MonitoringOccasionOfPO-r19 CHOICE { sCS15KHZoneT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..139), sCS30KHZoneT-SCS15KHZhalfT SEQUENCE (SIZE (1.. maxPO-perPF-r19)) OF INTEGER (0..279), sCS60KHZoneT-SCS30KHZhalfT-SCS15KHZquarterT SEQUENCE (SIZE (1.. maxPO-perPF-r19)) OF INTEGER (0..559), sCS120KHZoneT-SCS60KHZhalfT-SCS30KHZquarterT-SCS15KHZoneEighthT SEQUENCE (SIZE (1.. maxPO-perPF-r19)) OF INTEGER (0..1119), sCS120KHZhalfT-SCS60KHZquarterT-SCS30KHZoneEighthT-SCS15KHZoneSixteenthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..2239), sCS120KHZquarterT-SCS60KHZoneEighthT-SCS30KHZoneSixteenthT-SCS15KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..4479), sCS120KHZoneEighthT-SCS60KHZoneSixteenthT-SCS30KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..8959), sCS120KHZoneSixteenthT-SCS60KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..17919), sCS480KHZoneEighthT-sCS120KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..35839), sCS480KHZoneSixteenthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..71679), sCS480KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..143359)} maxPO-perPF-r19 INTEGER ::= 8 -- Maximum number of paging occasion per paging framefirstPDCCH-MonitoringOccasionOfPEI-O-r19 CHOICE { sCS15KHZoneT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..139), sCS30KHZoneT-SCS15KHZhalfT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..279), sCS60KHZoneT-SCS30KHZhalfT-SCS15KHZquarterT SEQUENCE (SIZE (1.. maxPO-perPF-r19)) OF INTEGER (0..559), sCS120KHZoneT-SCS60KHZhalfT-SCS30KHZquarterT-SCS15KHZoneEighthT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..1119), sCS120KHZhalfT-SCS60KHZquarterT-SCS30KHZoneEighthT-SCS15KHZoneSixteenthT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..2239), sCS120KHZquarterT-SCS60KHZoneEighthT-SCS30KHZoneSixteenthT-SCS15KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..4479), sCS120KHZoneEighthT-SCS60KHZoneSixteenthT-SCS30KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..8959), sCS120KHZoneSixteenthT-SCS60KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..17919), sCS480KHZoneEighthT-sCS120KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..35839), sCS480KHZoneSixteenthT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..71679), sCS480KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..143359)} maxPEI-perPF-r19 INTEGER ::= 8 -- Maximum number of PEI occasion per paging frame  |  |
| OPPO006 | [OPPO] In OD-SSB-Config, there are multiple fields od-ssb-absoluteFrequency od-ssb-PositionsInBurst od-ssbSubcarrierSpacingod-ssb-physCellIdod-ss-PBCH-BlockPowerThey are all marked as *For Case #2 (i.e., Always-on SSB is periodically transmitted on the cell), if absent, od-ssb-PositionsInBurst is the same as ssb-PositionsInBurst provided in ServingCellConfigCommon.*Now this restriction however is reflected in different ways for different fields. It is suggested using a unified solution.***od-ssb-absoluteFrequency***Indicates the frequency of the OD-SSB when the frequency is different from *absoluteFrequencySSB* configured in IE *FrequencyInfoDL* for this serving cell. Additional restrictions as described in subclause 4.4. of TS38.213.***od-ssb-PositionsInBurst***Indicates the time domain positions of the transmitted SS-blocks for OD-SSB in a half frame with SS/PBCH blocks as defined in TS 38.213 [13], clause 4.1. For Case #2 (i.e., Always-on SSB is periodically transmitted on the cell), if absent, *od-ssb-PositionsInBurst* is the same as *ssb-PositionsInBurst* provided in *ServingCellConfigCommon*.

|  |  |
| --- | --- |
| *ODssbOnly* | The field is optionally present, Need R, for serving cell that does not have SSB. It is absent otherwise. |

 |  |
| OPPO007 | [OPPO] For OD-SSB-Config, is the following parameter missing?

|  |  |  |  |
| --- | --- | --- | --- |
| od-ssb-physCellId | New | 　 | Indicate physical cell identity of a cell in the cell list, for Case #1, i.e., no always-on SSB on this serving cell |

 |  |
| OPPO008 | ***od-smtc***Primary measurement timing configuration (see clause 5.5.2.10) to be used instead of *smtc1* configured in *servingCellMO* in IE *servingCellConfig* when this OD-SSB is activated.[OPPO] Compared with 130 conclusion, seems the following part is missing* (modified) The UE applies the OD-SSB specific SMTC when the OD-SSB is activated and SCell is activated.
 |  |
| OPPO009 | ***servingCellMO****measObjectId* of the *MeasObjectNR* in *MeasConfig* which is associated to the serving cell when this OD-SSB is activated activated instead of *servingCellMO* in IE *ServingCellConfig.*[OPPO] typo |  |
| OPPO010 | ***valueKforAssociationPatternPeriodsForPRACH***The value of Kmask used for mapping of mask index to association periods per Kmask association pattern periods (See TS 38.213, subclause 8.1) used to identify the subset of the additional PRACH resources applicable at least for adaptation for DCI 1\_0 with P-RNTI. Absence of this field indicates the value *1*.[OPPO] Based on our R1, this is also applicable to C-RNTI case. |  |
| Samsung 001 | 5.2.2.3.3x trigger the lower layer to initiate the Random Access procedure on normal uplink in accordance with TS 38.321 [3] using the PRACH preamble(s) and PRACH resource(s) in *sib1-RequestConfig* included in stored valid version of *od-SIB1-Config* for this cell;[Samsung] We do not have concept of ‘ stored valid version’ for an IE. Stored valid version is used for SIB.Text can be updated as follows:trigger the lower layer to initiate the Random Access procedure on normal uplink in accordance with TS 38.321 [3] using the PRACH preamble(s) and PRACH resource(s) in *sib1-RequestConfig* included in ~~stored valid version of~~ *od-SIB1-Config* for this cell in stored valid version of SIBxx; |  |
| Samsung 002 | 5.2.2.4.2x Actions upon reception of *SIBxx*Upon receiving SIBxx, the UE shall:1. if the UE has reselected to a cell providing OD-SIB1, the UE stores the configuration for SIB1 request for this cell and considers it valid while camping in this cell:

This text is not correct. It seems to suggest that UE continues to use the SIB1 request of Cell X acquired from Cell A after the cell reselection. What we have previously agreed is that SIB1 request of Cell X acquired from Cell A is used only during reselection to Cell X. After reselection UE needs to use SIB1 request configuration acquired from Cell X.[OPPO] Regarding “ After reselection UE needs to use SIB1 request configuration acquired from Cell X”, are we on the same page that if the stored SIBxx is still valid (i.e., based on area ID and valueTag), there is no problem to continue using the stored SIBx, which is business as usual?[Samsung]: After reselection to Cell X, UE uses the SIBxx of Cell X. UE may not explicitly acquire SIBxx of CellX if the SIBxx of Cell X is same (based on valueTag/area id) as that of other cell.[OPPO] thanks for clarifying – then technically we are on the same page. In that case, the following yellow part seems to say that to acquire OD-SIB1 from Cell-X, SIBxx acquisition always has to be done by UE from Cell-X. So we would suggest some clarification (e.g., to reflect the spirit as expressed in the green part by Samsung below), e.g., Upon receiving SIBxx from a cell, the UE shall:1. store the SIBxx;
2. apply the SIB1 request configuration for acquiring OD-SIB1 of this cell;
3. apply the SIB1 request configuration of another cell in this stored SIBxx for acquiring OD-SIB during reselection to that cell, and after reselection to that cell if the stored SIBxx is a valid version for that cell in accordance with clause 5.2.2.2.1;

In our understanding correct text is as follows:Upon receiving SIBxx from a cell, the UE shall:1. store the SIBxx;
2. apply the SIB1 request configuration of another cell in this stored SIBxx for acquiring OD-SIB during reselection to that cell;
3. apply the SIB1 request configuration of this cell (i.e. cell from which SIBxx is acquired) in this stored SIBxx for acquiring OD-SIB1 of this cell

[Google] We also think Samsung’s text for 5.2.2.4.2x aligns better with RAN2 agreements. Besides, to also reflect the following agreement: “*UE considers WUS configuration only valid in directly succeeding cell reselection from cell where UE acquired WUS configuration*”, we suggest adding “**discard the stored SIBxx after reselecting to that cell**” at the end of 2> in Samsung’s text.[Samsung] Do not agree to discard stored SIBxx. SIBxx of cell A can be same as SIBxx of cell B, i.e. area id/value tag is same. After reselection to cell X, UE need SIBxx of cell X. 1. If any of the stored SIBxx have same area id/value tag as the area id/value tag of SIBxx in cell X, UE does not need to explicitly acquire SIBxx, UE uses the stored SIBxx which has the same area id/value tag as the area id/value tag of SIBxx in cell X. Otherwise, UE explicitly acquire SIBxx.

[OPPO] same view as Samsung that ‘discard’ operation is wrong. |  |
| Samsung 003 | pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19 CHOICE { sCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS) } OPTIONAL, -- Cond OtherBWP pagingAdaptationFirstPDCCH-MonitoringOccasionOfPEI-O-r19 CHOICE { sCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS) } OPTIONAL -- Cond InitialBWP-Paging ]]Values for T, T/2, T/4, T/8 and T16 are missing. These can also be configured for paging adaptation and network should be able to configure starting PDCCH monitoring occasion number of POs in this case for paging adaptation. |  |
| vivo001 | ***interFreqODSIB1-ExcludedCellList***List of exclude-listed inter-frequency neighbouring cells for a UE supporting OD-SIB1 as specified in TS 38.304 [20]. If *intraFreqODSIB1-ExcludedCellList* is present, the UE ignores *intraFreqExcludedCellList* (without suffix)[comment] Typo. intra -> inter |  |
| vivo002 | 5.2.2.3.1 Acquisition of *MIB* and *SIB1*2> else if *SIB1* acquisition is required for the UE and *ssb-SubcarrierOffset* indicates that *SIB1* is not scheduled in the cell:3> if the UE has a stored valid version of *od-SIB1-Config* for this cell:4> if the UE is in RRC\_IDLE or in RRC\_INACTIVE; or4> if the UE is in RRC\_CONNECTED while T311 is running:5> perform the actions as specified in clause 5.2.2.3.3x;3> else:4> perform the actions as specified in clause 5.2.2.5.NOTE 1: The UE in RRC\_CONNECTED is only required to acquire broadcasted *SIB1* if the UE can acquire it without disrupting unicast or MBS multicast data reception, i.e., the broadcast and unicast/MBS multicast beams are quasi co-located. The UE in RRC\_INACTIVE state while T319a is running, is only required to acquire broadcasted *SIB1* and *MIB* if the UE can acquire them without disrupting unicast data reception, i.e. the broadcast and unicast beams are quasi co-located.NOTE 2: UE in RRC\_INACTIVE that does not support *inactiveStateNTN-r17* enters RRC\_IDLE upon cell reselection between TN cell and NTN cell, and initiates the NAS signalling connection recovery (see TS 24.501 [23]).NOTE x: It is up to UE’s implementation to check if SIB1 is currently being broadcasted for that cell before triggering OD-SIB1 request procedure of that cell.[comment] During last meeting, at offline session [AT130][104][NES] (Ericsson), P6 in R2-2504037 about the UE behavior after receiving SI change notifcation was discussed. Rapporteur responded that a condition was added to address the issue:5> if SIB1 is not broadcasted 6> perform the actions as specified in clause 5.2.2.3.3x;And therefore, at the Comeback session, it was first agreed that:

|  |
| --- |
| Keep RRC CR as it is for the short message and UE behaviour. |

Then, it is commented that the high-lighted part mandates the UEs to check whether SIB1 is broadcasting before requesting OD-SIB1 (not the case upon receiving SI change notification), which is against the RAN1 agreement that it is up to the UE’s implementation to check if SIB1 is broadcasting. Thus, the high-lighted part was removed, and instead the NOTE x is added.However, RAN2#126 agrees that:

|  |
| --- |
| Once the NES UE camps on the NES cell, if the UE receives SIB change notification, the UE is expected to receive SIB1 from NES cell. |

Therefore, we encourage RAN2 to review the agreement again ‘Keep RRC CR as it is for the short message and UE behaviour.’, whether the NOTE x can cover the above RAN2#126 agreement. The discussion is comprised of the following questions:Q1. For RAN2#126 agreement ‘ Once the NES UE camps on the NES cell, if the UE receives SIB change notification, the UE is expected to receive SIB1 from NES cell.’, does it mean that the UE always assumes the NES cell will turn from transmitting NCD-SSB to transmitting CD-SSB for SIB1 update?Q2. If the answer is ‘NO’ for Q1, i.e. the NES cell can remain transmitting NCD-SSB and at the same time transmit the updated SIB1, how does the UE camping on the NES cell to receive the updated SIB1? Shall we rely on the NOTE x to say it’s up to UE’s implementation to handle this?We think for Q2, if the CORESET#0 in the stored OD-SIB1 request configuration has changed, the UE camping on the NES cell will have no way by implementation to receive the updated SIB1. As a result, all the UEs camping on the NES cell will trigger OD-SIB1 request since SIB1 cannot be received, which is not correct. Therefore, we propose Q1/Q2 to be listed as open issues for further discussion. |  |
| vivo003 | **5.2.2.3.5 Acquisition of SIB(s) or posSIB(s) in RRC\_CONNECTED**1> else if the UE is in RRC\_CONNECTED with an active BWP configured with common search space with the field *searchSpaceOtherSystemInformation* and the UE has not stored a valid version of a SIB or posSIB, in accordance with clause 5.2.2.2.1, of one or several required SIB(s) or posSIB(s) in accordance with clause 5.2.2.1:2> for the SI message(s) that, according to the *si-SchedulingInfo* in the stored SIB1, contain at least one required SIB and for which *si-BroadcastStatus* is set to *broadcasting*:3> acquire the SI message(s) as defined in clause 5.2.2.3.2;<Blahblah....>2> a UE supporting OD-SIB1 considers the *si-BroadcastStatus* in the stored SIB1 as the latest one.**[comment] We think the highlighted part is not correct, although it is the agreement. The UE applies this only when the cell is transmitting NCD-SSB. If the cell is transmitting CD-SSB, the UE should check the broadcast status according to the always on periodically transmitted SIB1. Therefore, we propose to revise as:**1> else if the UE is in RRC\_CONNECTED with an active BWP configured with common search space with the field *searchSpaceOtherSystemInformation* and the UE has not stored a valid version of a SIB or posSIB, in accordance with clause 5.2.2.2.1, of one or several required SIB(s) or posSIB(s) in accordance with clause 5.2.2.1:2> a UE supporting OD-SIB1 considers the si-BroadcastStatus in the stored SIB1 as the latest one, if *ssb-SubcarrierOffset* indicates that *SIB1* is not scheduled in the cell2> for the SI message(s) that, according to the *si-SchedulingInfo* in the stored SIB1, contain at least one required SIB and for which *si-BroadcastStatus* is set to *broadcasting*:3> acquire the SI message(s) as defined in clause 5.2.2.3.2;<Blahblah....>~~2> a UE supporting OD-SIB1 considers the~~ *~~si-BroadcastStatus~~* ~~in the stored SIB1 as the latest one.~~ |  |
| vivo004 | ***physCellIdList***Identifies the physical cell Id(s) for which this configuration is valid.**[Comment] Similar to what Samsung001 points out, ‘valid’ is suggested to be replaced by ‘applied’.** |  |
| vivo005 | – *RandomAccessAdaptationConfig*The IE *RandomAccess AdaptationConfig* is used to configure adaptive random access occasions.**[comment] Typo. There should be no space between ‘ *RandomAccess’ and’ AdaptationConfig’*** |  |
| OPPO011 | ***nterFreqCarrierFreqList***List of neighbouring carrier frequencies and frequency specific cell re-selection information. If *interFreqCarrierFreqList-v1610, interFreqCarrierFreqList-v1700, interFreqCarrierFreqList-v1720*, *interFreqCarrierFreqList-v1730,* *interFreqCarrierFreqList-v1760* or *interFreqCarrierFreqInfo-v1800* are present, they shall contain the same number of entries, listed in the same order as in *interFreqCarrierFreqList* (without suffix).[OPPO] Missing the newly introduced V19xy field. |  |
| LGE001 | 1> if the UE is in RRC\_IDLE or in RRC\_INACTIVE; or1> if the UE is in RRC\_CONNECTED while T311 is running:2> if *ssb-SubcarrierOffset* indicates *SIB1* is transmitted in the cell (TS 38.213 [13]) and if *SIB1* acquisition is required for the UE:3> acquire the *SIB1,* which is scheduled as specified in TS 38.213 [13];3> if the UE is unable to acquire the *SIB1*:4> perform the actions as specified in clause 5.2.2.5;3> else:4> upon acquiring *SIB1*, perform the actions specified in clause 5.2.2.4.2.2> else if *SIB1* acquisition is required for the UE and *ssb-SubcarrierOffset* indicates that *SIB1* is not scheduled in the cell:3> if the UE has a stored valid version of *od-SIB1-Config* for this cell:~~4> if the UE is in RRC\_IDLE or in RRC\_INACTIVE; or~~~~4> if the UE is in RRC\_CONNECTED while T311 is running:~~5> perform the actions as specified in clause 5.2.2.3.3x;3> else:4> perform the actions as specified in clause 5.2.2.5.[LGE] The same conditions are repeatedly specified. |  |
| LGE002 | For the field description of ***od-ssb-ActivationStatus***, we suggest to clarify that OD-SSB pattern activated upon configuration shall be one. RAN2 agreed that there are the only one OD-SSB activated for a given SCell as follows. **7. L3 RRM framework: Case 2b (AO-SSB and OD-SSB in the different frequency)*** RAN2 understands multiple OD-SSBs with the different frequencies for a given SCell is not supported.

According to the current signalling structure, it seems that ***od-ssb-ActivationStatus*** can be signalled into the multiple OD-SSB configurations. Therefore, we suggest two options clarifying the intended behaviour by the agreement.*Option-1: Add a note into the field* ***od-ssb-ActivationStatus.******od-ssb-ActivationStatus***Indicates the activation status of this OD-SSB pattern upon configuration. If this field is present, the other OD-SSB configuration does not have this field.*Option-2: Move* ***od-ssb-ActivationStatus*** *out of the OD-SSB configuration.*Option-2 suggests that put the field into *SCellConfig* but not into the OD-SSB configuration. The field indicates the value of the OD-SSB configuration index to be activated upon configuration. Note that ***od-ssb-ActivationStatus***is absent if there is no OD-SSB activated on the SCell upon configuration.SCellConfig ::= SEQUENCE { sCellIndex SCellIndex, [omitted] ]], [[ od-SSB-ConfigToAddModList-r19 SEQUENCE (SIZE (1.. maxNrofOD-SSB-r19)) OF OD-SSB-Config-r19 OPTIONAL, -- Need N od-SSB-ConfigToReleaseList-r19 SEQUENCE (SIZE (1.. maxNrofOD-SSB-r19)) OF OD-SSB-ConfigId-r19 OPTIONAL, -- Need N od-ssb-ActivationStatus INTEGER (0..maxNrofOD-SSB-r19-1) OPTIONAL, -- Need N ]] } |  |
| LGE003 | *DownlinkConfigCommonSIB*The IE *DownlinkConfigCommonSIB* provides common downlink parameters of a cell.*DownlinkConfigCommonSIB* information element firstPDCCH-MonitoringOccasionOfPO-r19 CHOICE { sCS15KHZoneT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS30KHZoneT-SCS15KHZhalfT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS60KHZoneT-SCS30KHZhalfT-SCS15KHZquarterT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZoneT-SCS60KHZhalfT-SCS30KHZquarterT-SCS15KHZoneEighthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZhalfT-SCS60KHZquarterT-SCS30KHZoneEighthT-SCS15KHZoneSixteenthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS),  sCS480KHZoneT-SCS120KHZquarterT-SCS60KHZoneEighthT-SCS30KHZoneSixteenthT-SCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZhalfT-SCS120KHZoneEighthT-SCS60KHZoneSixteenthT-SCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZquarterT-SCS120KHZoneSixteenthT-SCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneEighthT-sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneSixteenthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS) } OPTIONAL -- Need R ]] *PDCCH-ConfigCommon*The IE *PDCCH-ConfigCommon* is used to configure cell specific PDCCH parameters provided in SIB as well as in dedicated signalling.***PDCCH-ConfigCommon* information element**pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19 CHOICE { sCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..FFS) } OPTIONAL, -- Cond OtherBWP pagingAdaptationFirstPDCCH-MonitoringOccasionOfPEI-O-r19 CHOICE { sCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS), sCS480KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r19)) OF INTEGER (0..FFS) } OPTIONAL -- Cond InitialBWP-Paging ]]}[LGE] Unify the name of the firstPDCCH-MonitoringOccasionOfPO-r19 of *DownlinkConfigCommonSIB* and pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19 of PDCCH-ConfigCommon. sCS480KHZoneThirtySecondT is missing in the firstPDCCH-MonitoringOccasionOfPO-r19 of *DownlinkConfigCommonSIB* information element. Same comment with Samsung 003. Values for T, T/2, T/4, T/8 and T16 are missing in the pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19 and in the pagingAdaptationFirstPDCCH-MonitoringOccasionOfPEI-O-r19. |  |
| LGE004 | maxPO-perPF-r19 INTEGER ::= 8 -- Max number of paging occasions per paging frame for paging adaptationmaxPEI-perPF-r19 INTEGER ::= 8 -- Max number of PEI occasions per paging frame for paging adaptation[LGE] During the offline discussion in the RAN2#130 meetings, R2-2504704, proposal 10 is not supported. 1. The maximum number of PEI occasion per paging frame is extended to 8.

=> The maximum number of PEI occasion per paging frame is not extended to 8.However, in the online session, proposal 10 is reflected as supported.Since proposal 10 was not discussed in the online session, it is recommended to double-check whether Proposal 10 is supported or not. If the proposal 10 is not supported, there is no need to introduce maxPEI-perPF-r19. Also, the signalling structure of pagingAdaptationFirstPDCCH-MonitoringOccasionOfPEI-O-r19 can be changed to the size of maxPEI-perPF-r17. pagingAdaptationFirstPDCCH-MonitoringOccasionOfPEI-O-r19 CHOICE { sCS15KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r17)) OF INTEGER (0..FFS), sCS30KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r17)) OF INTEGER (0..FFS), sCS60KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r17)) OF INTEGER (0..FFS), sCS120KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r17)) OF INTEGER (0..FFS), sCS480KHZoneThirtySecondT SEQUENCE (SIZE (1..maxPEI-perPF-r17)) OF INTEGER (0..FFS) } OPTIONAL -- Cond InitialBWP-Paging ]]} |  |
| CATT001 | Wonder if OD-SSB needs to be introduced in clause 3.1 or in clause 3.2. |  |
| CATT002 | – *CellGroupConfig*od-SSB-ConfigToAddModList-r19 SEQUENCE (SIZE (1.. maxNrofOD-SSB-r19)) OF OD-SSB-Config-r19 OPTIONAL, -- Need N

|  |
| --- |
| ***od-SSB-ConfigToAddModList***List of OD-SSB configurations for this serving cell. Network configures maximum of one OD-SSB configuration which has different SSB frequency than the serving cell SSB frequency. |

The highlighted part is ambiguous, if other parameters, such as od-ssb-Periodicity, have multiple candidate parameters, even if there is only one different frequency, there will be multiple candidate OD-SSB configurations.  |  |
| CATT003 |

|  |
| --- |
| ***od-ssb-nrofBurst***Indicates the number of OD-SSB bursts to be transmitted after OD-SSB is indicated. |

Agreement (RAN1 #121)For a cell supporting on-demand SSB SCell operation, the following combinations are supported.* For OD-SSB transmission activation (OD-Tact) and OD-SSB transmission adaptation (OD-TA),
	+ Case A1: RRC-based OD-Tact without N (i.e., *od-ssb-nrofBurst*) configured + MAC CE-based OD-TA;
		- Subject to UE capability
	+ Case B1: MAC CE-based OD-Tact without N configured + MAC CE-based OD-TA;
	+ Case B2: MAC CE-based OD-Tact with N configured + MAC CE-based OD-TA.
* For OD-SSB transmission deactivation (OD-TD),
	+ Case X1: RRC-based OD-Tact without N configured + MAC CE-based OD-TD;
		- Subject to UE capability
	+ Case Y1: MAC CE-based OD-Tact or OD-TA without N configured + MAC CE-based OD-TD;
	+ Case Y2: MAC CE-based OD-Tact or OD-TA with N configured + implicit OD-TD;
	+ Case Y3: MAC CE-based OD-Tact or OD-TA with N configured + MAC CE-based OD-TD.
* **Conclusion**: There is no RAN1 consensus to support RRC activation of OD-SSB transmission configuring *od-ssb-nrofBurst.*
* Note: “Implicit OD-TD” above implies that the on-demand SSB is deactivated based on the value for *od-ssb-nrofBurst* according to NW indication.

According to the conclusion of RAN1, *od-ssb-nrofBurst* can only be configured by RRC and activated by MAC CE, and RAN2 has not discussed this issue. The *od-ssb-nrofBurst* is configured in parallel with od-ssb-ActivationStatus in OD-SSB-Config, so *od-ssb-nrofBurst* should be able to be configured and activated through RRC? We think we need to make a clarification. |  |
| CATT004 | Mode details are added by yellow part to clearly illustrate that the maximum number of PRACH attempts is from the OD-SIB1 related configuration.5.2.2.3.3x Request for on demand SIB1The UE shall, while SDT procedure is not ongoing:1> trigger the lower layer to initiate the Random Access procedure on normal uplink in accordance with TS 38.321 [3] using the PRACH preamble(s) and PRACH resource(s) in *sib1-RequestConfig* included in stored valid version of *od-SIB1-Config* for this cell;2> if indication that maximum number of PRACH attempts as configured in *sib1-RequestConfig* is reached is received from lower layers as defined in TS 38.321 [3]:3> perform the actions as specified in clause 5.2.2.5. |  |
| CATT005 | Three typos are shown here by yellow part:InterFreqCarrierFreqInfo-v1900 ::= SEQUENCE { interFreqODSIB1-ExcludedCellList-r19 CHOICE { emptyList-r19 NULL, excludedCells~~P~~-19 InterFreqExcludedCellList  } OPTIONAL, -- Need R odsib1-cellReselectionPriority-r19 CellReselectionPriority OPTIONAL, -- Need R odsib1-cellReselectionSubPriority-r19 CellReselectionSubPriority OPTIONAL -- Need R}***interFreqODSIB1-ExcludedCellList***List of exclude-listed inter-frequency neighbouring cells for a UE supporting OD-SIB1 as specified in TS 38.304 [20]. If *~~intra~~interFreqODSIB1-ExcludedCellList* is present, the UE ignores *~~intra~~interFreqExcludedCellList* (without suffix) |  |
| Fujitsu 001 | 5.2.2.3.3x Request for on demand SIB12> if acknowledgement for on demand SIB1 request is received from lower layers:3> acquire the requested SIB1 message as defined in FFS, immediately;3> upon acquiring SIB1, perform the actions specified in clause 5.2.2.4.2;1> if cell reselection occurs while waiting for the acknowledgment for SIB1 request from lower layers:2> reset MAC;[Fujitsu] For terminology alignment, suggest using “on demand SIB1 request” in the text above. |  |
| Fujitsu 002 | – *SIB3* ]] , [[ intraFreqODSIB1-ExcludedCellList-r19 CHOICE { emptyList-r19 NULL, excludedCells-r19 IntraFreqExcludedCellList  } OPTIONAL -- Need R ]]}[Fujitsu] Typo: Remove a space before comma and need an indentation within the CHOICE. |  |
| Fujitsu 003 | – *SIB4* [[ interFreqCarrierFreqList-v1800 InterFreqCarrierFreqList-v1800 OPTIONAL -- Need R ]] , [[ interFreqCarrierFreqList-v1900 InterFreqCarrierFreqList-v1900 OPTIONAL -- Need R ]]}– *DownlinkConfigCommonSIB* ]] , [[ pagingAdaptationPEI-Config-r19 PEI-Config-r17 OPTIONAL -- Need R ]]}…} ]] , [[ pagingAdaptation-NS-r19 ENUMERATED {eight,four, two, one} OPTIONAL, -- Need R– *PDCCH-ConfigCommon* ]] , [[ pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19 CHOICE {– *RACH-ConfigCommon* ]] , [[ addlRACH-Config-Adaptation-r19 RandomAccessAdaptationConfig-r19 OPTIONAL -- Need R ]][Fujitsu] Typo: Remove a space before comma. |  |
| Fujitsu 004 | – *CellGroupConfig* [[ od-SSB-ConfigToAddModList-r19 SEQUENCE (SIZE (1.. maxNrofOD-SSB-r19)) OF OD-SSB-Config-r19 OPTIONAL, -- Need N od-SSB-ConfigToReleaseList-r19 SEQUENCE (SIZE (1.. maxNrofOD-SSB-r19)) OF OD-SSB-ConfigId-r19 OPTIONAL, -- Need N ]] [Fujitsu] Typo: the last comma is not needed. |  |
| Fujitsu 005 | ***od-SSB-ConfigToAddModList***List of OD-SSB configurations for this serving cell. Network configures maximum of one OD-SSB configuration which has different SSB frequency than the serving cell SSB frequency.[Fujitsu] We would like to confirm the following agreement in RAN2#130 allows the OD-SSB in different SSB frequency from serving cell SSB frequency is configured with multiple sets of parameters. i.e., if the serving cell SSB frequency is Freq A, NW can configure OD-SSB in Freq B with 10ms periodicity and OD-SSB in Freq B with 20ms periodicity for this SCell ?* RAN2 understands multiple OD-SSBs with the different frequencies for a given SCell is not supported.

We think it is allowed to configure the multiple parameter sets for the OD-SSB with different SSB frequency. To clarify that, our suggestion is:***od-SSB-ConfigToAddModList***List of OD-SSB configurations for this serving cell. Network configures maximum of one OD-SSB frequency which has different from the SSB frequency of a SCell. |  |
| Fujitsu 006 | – *OD-SSB-Config*

|  |  |
| --- | --- |
| RAN2 confirms the working consumption that when AO-SSB and OD-SSB have different center frequency, introduce a new servingCellMO in ServingCellConfig to indicate MO of OD-SSB, as agreement. | Field *servingCellMO* is introduced in IE *OD-SSB-Config.*  In this way it is possible to keep the same field name an hence all the procedural text intact. |

[Fujitsu] RAN2 agreed to introduce a new servingCellMO in ServingCellConfig in RAN2#130. Although the current CR may work, we think the original agreement is simpler for implementation, because it can keep the same message structure. We also think even if it is introcuded in ServingCellConfig, the current procedural text is not changed (similar to servingCellMO-r17). We would like to add it into open issue list and ask other company’s views. |  |
| Fujitsu 007 | – *OD-SSB-Config*The IE *OD-SSB-Config* is used to configure the OD-SSB activated by a MAC CE see TS 38.321 [3], clause XXX*OD-SSB-Config* information element-- ASN1START-- TAG-OD-SSB-CONFIG-STARTOD-SSB-Config-r19 ::= SEQUENCE {  od-ssb-ConfigId-19 INTEGER (0.. maxNrofOD-SSB-1-r19) OPTIONAL, -- Need R od-ssb-ActivationStatus-r19 ENUMERATED {true} OPTIONAL, -- Need R od-ssb-Periodicity-r19 ENUMERATED { ms5, ms10, ms20, ms40, ms80, ms160, spare2, spare1 } OPTIONAL, -- Need S od-ssb-sfn-Offset-19 INTEGER (0..15) OPTIONAL, -- Need S od-ssb-nrofBurst-r19 INTEGER (0..8) OPTIONAL, -- Need R od-ssb-halfFrameIndex-r19 ENUMERATED {zero, one} OPTIONAL, -- Need S  od-ssb-absoluteFrequency-r19 ARFCN-ValueNR OPTIONAL, -- Need S[Fujitsu] 1) For clear understanding, the value “true” should be changed to “activated”. 2) The value range of IE od-ssb-nrofBurst-r19 should be changed to (1..8). We think if NW does not use implicit od-ssb deactivation, this IE is not configured as in TS 38.213, *“A number of half frames with transmission of the second SS/PBCH blocks is indicated by a MAC CE from values provided by od-ssb-nrofBurst, if provided; otherwise, the transmission of the second SS/PBCH blocks occurs until it is deactivated by od-ssb-config or a MAC CE [11, TS 38.321]”*. Then the value zero is not used. |  |
| Sharp 001 | ***sib1-pdcch-RestrictionToPRACH***Indicates whether the UE can assumes that, in the OD-SIB1 window, PDCCH for an OD-SIB1 message is transmitted in PDCCH monitoring occasions corresponding only to the SSB associated with the PRACH for UL-WUS[Sharp]: There is no definition for “UL-WUS” in 38.331, suggest rewording as “SIB1 request”. |  |
| Sharp 002 | 5.2.2.4.2x Actions upon reception of *SIBxx*Upon receiving SIBxx, the UE shall:1> if the UE has reselected to a cell providing OD-SIB1, the UE stores the configuration for SIB1 request for this cell and considers it valid while camping in this cell:[Sharp]: Considering RRC reestablishment case, “reselected” can be “(re)selected”. |  |
| Sharp 003 | - to ensure that, if a measurement object associated with the MCG has the same *ssbFrequency* as a measurement object associated with the SCG:- for that *ssbFrequency*, the measurement window according to the *smtc1* configured by the MCG includes the measurement window according to the *smtc1* configured by the SCG, or vice-versa, with an accuracy of the maximum receive timing difference specified in TS 38.133 [14].[Sharp]: Now *od-smtc* is introduced and will be used instead of *smtc1* when OD-SSB is activated. Should the above configuration requirement be extended for *od-smtc* also? |  |
| Xiaomi001 | ***od-ssb-ActivationStatus***[Xiaomi] Do we need to clarify for after a SCell is configured, at most one OD-SSB is activated, i.e., at most one of the activation status is set to activated among all the OD-SSB configurations? |  |
| Xiaomi002 | ***od-ssb-absoluteFrequency***[Xiaomi] according to the RAN1 para list, there is no restriction “when the frequency is different from absoluteFrequencySSB configured in IE FrequencyInfoDL for this serving cell” for this parameter.  |  |
| Xiaomi003 | ***od-ssb-nrofBurst***Indicates the number of OD-SSB bursts to be transmitted after OD-SSB is indicated.[Xiaomi] not clear what “indicated” means. Suggest to change to “activated” |  |
| Xiaomi004 | Parameters related to SSB adaptation is not captured |  |
| Fujitsu 008 | – *SIB4*InterFreqCarrierFreqInfo-v1900 ::= SEQUENCE { interFreqODSIB1-ExcludedCellList-r19 CHOICE { emptyList-r19 NULL, excludedCellsP-19 InterFreqExcludedCellList – *OD-SSB-Config*The IE *OD-SSB-Config* is used to configure the OD-SSB activated by a MAC CE see TS 38.321 [3], clause XXX*OD-SSB-Config* information element-- ASN1START-- TAG-OD-SSB-CONFIG-STARTOD-SSB-Config-r19 ::= SEQUENCE {  od-ssb-ConfigId-19 INTEGER (0.. maxNrofOD-SSB-1-r19) OPTIONAL, -- Need R od-ssb-ActivationStatus-r19 ENUMERATED {true} OPTIONAL, -- Need R od-ssb-Periodicity-r19 ENUMERATED { ms5, ms10, ms20, ms40, ms80, ms160, spare2, spare1 } OPTIONAL, -- Need S od-ssb-sfn-Offset-19 INTEGER (0..15) OPTIONAL, -- Need S– Multiplicity and type constraint definitionsmaxNRofODSIB1-19 INTEGER ::= FFS -- Max number of OD-SIB1 configurationsmaxPCI-19 INTEGER ::= FFS -- Max number of PCIs sharing one OD-SIB1 configuration pe[Fujitsu] Typo: Should be “r19”. |  |
| HW001 | On OD-SSB-Config-R19, currently there is a servingCellMO per OD-SSB-Config. However, we only agreed to introduce one servingCellMO for OD-SSB, it should be per SCell, not per OD-SSB config. |  |
| HW002 | Besides, there should be some procedure texts about when the UE uses the new servingCellMO, when the UE uses the legacy servingCellMO:* In L3 measurement in OD-SSB case 1, if MAC-CE/RRC based activation / deactivation:

• The UE starts L3 measurement towards the activated OD-SSB based on configured servingCellMO after reception of the activation • The UE stops L3 measurements after it determines the OD-SSB is deactivated implicitly or explicitly.* Spec impact can be further discussed in running CR preparation.
 |  |
| HW003 | SIB4 field descriptions > typo in description of interFreqODSIB1-ExcludedCellList > “intra” should be “inter” |  |
| HW004 | preambleTransMax-r19 seems to be captured twice (one in SIB1-RequestConfig-r19 and one in RACH-ConfigSIB1-r19) |  |
| HW005 | offsetToPointA-r19 INTEGER (0..2199) OPTIONAL, -- Cond FDDI assume this should be “Cond TDD” based on R1-2503243 |  |
| Samsung 004 |  pagingAdaptation-NS-r19, pagingAdaptationNAndPagingFrameOffset and firstPDCCH-MonitoringOccasionOfPO should be grouped together in one IE. pagingAdaptation-NS-r19, pagingAdaptationNAndPagingFrameOffset should be mandatory inside the IE.pagingAdaptation-r19 ::= SEQUENCE { pagingAdaptation-NS-r19 ENUMERATED {eight,four, two, one}  pagingAdaptationNAndPagingFrameOffset-r19 CHOICE { oneT NULL, halfT INTEGER (0..1), quarterT INTEGER (0..3), oneEighthT INTEGER (0..7), oneSixteenthT INTEGER (0..15), oneThirtySecondT INTEGER (0..31) }  firstPDCCH-MonitoringOccasionOfPO-r19 CHOICE {  } OPTIONAL -- Need R} OPTIONAL -- Need R |  |
| HW006 | ra-SearchSpace-r19 SearchSpaceId > based on R1-2503243, shouldn’t this be of type SearchSpace?In PDCCH-Config of cell A the search space (with ID) is for cell A. If SIBxx includes the search space ID for NES cell, the search space configuration if the NES cell also needs to be provided in SIBxx, it cannot be a SearchSpaceId from Cell A. |  |
| HW007 | od-ssb-ConfigId-r19 > This should be defined as separate IE. Otherwise, there is no IE to refer to in the release:od-SSB-ConfigToReleaseList-r19 SEQUENCE (SIZE (1.. maxNrofOD-SSB-r19)) OF OD-SSB-ConfigId-r19 |  |
| Sharp 004 | ***od-ss-PBCH-BlockPower*** Indicates average EPRE of the resources elements that carry secondary synchronization signals in dBm that the NW used for OD-SSB transmission, see TS 38.213 [13], clause 7, for Case #1, i.e., no always-on SSB on this serving cell.[Sharp]: For the highlighted description, there is no definition on “always-on SSB”, suggest to describe it based on whether *absoluteFrequencySSB* is absent. For example, “for the case that *absoluteFrequencySSB* is absent on this serving cell”. The similar comment on Case #2 description. |  |
| Sharp 005 | ***absoluteFrequencySSB***Frequency of the SSB to be used for this serving cell. SSB related parameters (e.g. SSB index) provided for a serving cell refer to this SSB frequency unless mentioned otherwise. The CD-SSB of the PCell is always on the sync raster. Frequencies are considered to be on the sync raster if they are also identifiable with a GSCN value (see TS 38.101-1 [15] or TS 38.101-5 [75]). If the field is absent, the SSB related parameters should be absent, e.g. *ssb-PositionsInBurst*, *ssb-periodicityServingCell* and *subcarrierSpacing* in *ServingCellConfigCommon* IE. If the field is absent, the UE obtains timing reference from the intra-band SpCell or intra-band SCell if applicable as described in TS 38.213 [13], clause 4.1, or from the SpCell or an SCell indicated by *referenceCell,* or from the reference serving cell defined in TS 38.133 [14].[Sharp]: In legacy, if absoluteFrequencySSB is absent, the SCell is considered as SSB-less SCell and UE obtains timing reference as highlighted part. For OD-SSB Case#1, absoluteFrequencySSB also should be absent, then whether UE considers the SCell as SSB-less SCell and how to obtain timing reference should be discussed.  |  |

# 4 Remaining open issues from R2-2504704 P7, P12, P13, P14

Q13a. Please comment on whether the maximum offset value for *pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19* field parameter is extended to 32 radio frames:

1. at symbol level
2. at slot level
3. by restricting the maximum value range of *pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19* field parameter for different SCS corresponding to *pagingAdaptationNAndPagingFrameOffset-r19* (i.e. N)
4. by restricting the configuration to evenly distributed POs, i.e., the first PO position among 8 POs and the interval between them.
5. other

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| OPPO | iii seems to be the option without losing flexibility, considering paging adaptation was used to restrict PO location to be within smaller time range. |  |
| Samsung | First, FirstPDCCH-MonitoringOccasionOfPO is not really an offset. It also does not indicate the starting symbol number. Its basically PDCCH monitoring occasion number where physical location of PDCCH monitoring occasion for paging is configured by paging search space and these are monitoring occasions are sequentially numbered. So i), ii) and iv) does not seems to work with legacy approach.Prefer no optimization at this stage as FirstPDCCH-MonitoringOccasionOfPO is anyways optional. |  |
| vivo | iii |  |
| LGE | As the FirstPDCCH-MonitoringOccasionOfPO can be configured optionally, the network can simply choose not to configure it when signaling overhead is a concern or when the configuration is unnecessary. Prefer to configure pagingAdaptationFirstPDCCH-MonitoringOccasionOfPO-r19 as in the legacy firstPDCCH-MonitoringOccasionOfPO. Prefer option i, symbol level offset. |  |
| Fujitsu | Support option iii |  |
| Apple | Same view as Samsung. Prefer no optimization (i.e. option i - symbol level as legacy). |  |
| Huawei, HiSilicon | Option i, same view as LGE. |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Q13b: Please comment on which values should be adopted, i.e., x

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| Apple | We provide a complete list for Rapporteur reference:firstPDCCH-MonitoringOccasionOfPO-r19 CHOICE { sCS15KHZoneT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..139), sCS30KHZoneT-SCS15KHZhalfT SEQUENCE (SIZE (1.. maxPO-perPF-r19)) OF INTEGER (0..279), sCS60KHZoneT-SCS30KHZhalfT-SCS15KHZquarterT SEQUENCE (SIZE (1.. maxPO-perPF-r19)) OF INTEGER (0..559), sCS120KHZoneT-SCS60KHZhalfT-SCS30KHZquarterT-SCS15KHZoneEighthT SEQUENCE (SIZE (1.. maxPO-perPF-r19)) OF INTEGER (0..1119), sCS120KHZhalfT-SCS60KHZquarterT-SCS30KHZoneEighthT-SCS15KHZoneSixteenthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..2239), sCS120KHZquarterT-SCS60KHZoneEighthT-SCS30KHZoneSixteenthT-SCS15KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..4479), sCS120KHZoneEighthT-SCS60KHZoneSixteenthT-SCS30KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..8959), sCS120KHZoneSixteenthT-SCS60KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..17919), sCS480KHZoneEighthT-sCS120KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..35839), sCS480KHZoneSixteenthT SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..71679), sCS480KHZone32T SEQUENCE (SIZE (1..maxPO-perPF-r19)) OF INTEGER (0..143359)} maxPO-perPF-r19 INTEGER ::= 8 -- Maximum number of paging occasion per paging frame |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Q14a. Please comment on whether the maximum offset value for *pagingAdaptationFirstPDCCH-MonitoringOccasionOfPEI-O-r19* field parameter is extended to 32 radio frames:

1. at symbol level
2. at slot level
3. by restricting the maximum value range of Rel-19 *pagingAdaptationFirstPDCCH-MonitoringOccasionOfPEI-O-r19* field parameter for different SCS corresponding to *pagingAdaptationNAndPagingFrameOffset-r19* (i.e. N)
4. by restricting the configuration to evenly distributed POs, i.e., the first PO position among 8 POs and the interval between them.
5. other

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| OPPO | iii seems to be the option without losing flexibility, considering c was used to restrict PO location to be within smaller time range. |  |
| vivo | iii |  |
| Fujitsu | Support option iii |  |
| Apple | It should be treated the same way as paging adaptation IE. We prefer no optimization (i.e. option i - symbol level as legacy). |  |
| Huawei, HiSilicon | The legacy FirstPDCCH-MonitoringOccasionOfPEI-O is symbol level, we don’t see the motivation to deviate from this. |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Q14b: Please comment on which values should be adopted, i.e., x

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| Apple | We provide a complete list for Rapporteur reference:firstPDCCH-MonitoringOccasionOfPEI-O-r19 CHOICE { sCS15KHZoneT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..139), sCS30KHZoneT-SCS15KHZhalfT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..279), sCS60KHZoneT-SCS30KHZhalfT-SCS15KHZquarterT SEQUENCE (SIZE (1.. maxPO-perPF-r19)) OF INTEGER (0..559), sCS120KHZoneT-SCS60KHZhalfT-SCS30KHZquarterT-SCS15KHZoneEighthT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..1119), sCS120KHZhalfT-SCS60KHZquarterT-SCS30KHZoneEighthT-SCS15KHZoneSixteenthT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..2239), sCS120KHZquarterT-SCS60KHZoneEighthT-SCS30KHZoneSixteenthT-SCS15KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..4479), sCS120KHZoneEighthT-SCS60KHZoneSixteenthT-SCS30KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..8959), sCS120KHZoneSixteenthT-SCS60KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..17919), sCS480KHZoneEighthT-sCS120KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..35839), sCS480KHZoneSixteenthT SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..71679), sCS480KHZone32T SEQUENCE (SIZE (1.. maxPEI-perPF-r19)) OF INTEGER (0..143359)} maxPEI-perPF-r19 INTEGER ::= 8 -- Maximum number of PEI occasion per paging frame |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Q15a: Please comment on whether the following parameters should be introduced for Rel-19 PEI configuration:

1. po-NumPerPEI-r19
2. payloadSizeDCI-2-7-r19
3. pei-FrameOffset-r19
4. subgroupsNumPerPO-r19
5. subgroupsNumForUEID-r19

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
| OPPO | We do not see clearer benefit of doing so, since1) for i, extending the value would lead to smaller number of sub-group for each PO, and will increase false alarm rate and thus hurt the original intention of introducing PEI, i.e., for UE power saving2) for ii, iv, v, it is restricted by R1 design, so we should not touch it3) for iii, it is not clear what is the reason for extending the value range |  |
| Samsung | Same view as OPPO |  |
| vivo | Same view as OPPO |  |
| LGE | Same view with OPPO. |  |
| Apple | Same view as OPPO |  |
| Huawei, HiSilicon | i. po-NumPerPEI-r19Extend POnumPerPEI to 16 to maintain the same principle as R17 that PEI can be associated with 2 PFs.Otherwise, if we follow the existing maximum POnumPerPEI of 8, R19 PEI can only be associated to one PF, the average PEI overhead per PF is quite high and more power will be consumed to transmit PEI. |  |
|  |   |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Q15b: Please comment on whether the same value ranges as for legacy PEI should be used for the following parameters (if agreed to be introduced per Q15a above) for Rel-19 PEI configuration:

1. po-NumPerPEI-r19
2. payloadSizeDCI-2-7-r19
3. pei-FrameOffset-r19
4. subgroupsNumPerPO-r19
5. subgroupsNumForUEID-r19

|  |  |  |
| --- | --- | --- |
| **Company** | **Detailed comments on FFSs** | **Rapporteur response** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# 6 Conclusion