3GPP TSG-RAN WG1 Meeting #110-e R2-200xxxx

Electronic Meeting, 1st – 12th June 2020

Agenda: 6.21

Source: Ericsson

Title: [AT110-e][607][OdSIB] Proposals for on-demand SI in connected

Document for: Discussion, Decision

# 1 Introduction

This document is to kick off the following email discussion:

\* **[AT110-e][607][OdSIB] Proposals for on-demand SI in connected (Ericsson)**

      Scope: Condense the proposals from documents under agenda item 6.21, and identify any easy agreements

      Intended outcome: Summary of issues and agreements, in R2-2005883

      Deadline:  Comments Wednesday 2020-06-03 1000 UTC; report Thursday 2020-06-04 1000 UTC

# 2 Summary of remaining issues

This document is to summarize the contributions submitted to AI 6.21. Please not that contributions that were already captured in the RRC CR submitted in R2-2005172. Further, no proposal regarding the positioning WI will be treated in this email discussion.

## 2.1 Handling of prohibit timer and its values

The following proposals have an impact on the handling of the prohibit timer and with what values this can be configured:

* Starting of timer T350 and checking of timer T350 are performed in section 5.2.2.3.5 instead of 5.2.2.4.2. Adopt the TP in annexure 1.[1]
* Stopping of T350 is removed from section 5.3.13.2[1]
* Upon reception of reconfiguration message which includes reconfigurationWithSync in spCellConfig of MCG, UE stops T350, if running. Adopt the TP in annexure 2.[1]
* Specify a single prohibit timer that is applied for any SIB(s) which can be requested on-demand in RRC\_CONNECTED.[2]
* Specify prohibit timer T350 with 4-bits and value range {s0, s0dot5, s1, s2, s3, s4, s5, s6, s7, s8, s9, s10, s20, s30, spare2, spare1} in seconds.[2]
* Move the procedure of checking prohibit timer T350 from sub-clause 5.2.2.4.2 to 5.2.2.3.5 in TS 38.331.[5]

One of the issues proposed by companies is whether to move the checking on if the timer T350 is running from section 5.2.2.4.2 (action related to acquisition of SIB1) to section 5.2.2.3.5 (triggering of on-demand request in CONNECTED). Main motivation of this proposal is because the UE does not trigger the on-demand procedure only upon reception of SIB1 but also in other cases (e.g., request from upper layers). According to current specification, the UE will skip section 5.2.2.4.2 and will trigger section 5.2.2.3.5 without checking if the timer T350 is running.

**Question 1: Do companies agree to move the checking of the timer T350 from section 5.2.2.4.2 to section 5.2.2.3.5 of TS 38.331?**

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The second issue on the prohibit timer regards with which values this can be configured. On proposal is to assign 4-bits and value range {s0, s0dot5, s1, s2, s3, s4, s5, s6, s7, s8, s9, s10, s20, s30, spare2, spare1} for T350.

**Question 2: Do companies agree to assign 4-bits and value range {s0, s0dot5, s1, s2, s3, s4, s5, s6, s7, s8, s9, s10, s20, s30, spare2, spare1} for T350? In not, please state in the comment section your proposal.**

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The third issue regarding the prohibit timer is when this should be stopped by the UE. According to this, we have two proposals that are independent to each other. One proposal is, indeed, to stop T350 when the UE triggers the RRC resume procedure and the motivation for doing it is that during RRC\_IDLE or RRC\_INACTIVE the timer T350 is never running. This is in a way true because the timer T350 is also stopped in section 5.3.8.3 when the RRC release procedure is triggered.

**Question 3: Do companies agree to remove the stopping of timer T350 from section 5.3.13.2?**

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A further issue is, instead, the handling of the timer T350 with receiving a reconfiguration with sync associated with the MCG. The motivation for this is because in case of handover, the UE should send the on-demand request eventually to the target node and thus the timer T350 configured by the source will not be valid anymore. However, one drawback of doing this is that the UE, in case of handover failure, when falling back to the source node will have to start again autonomously timer T350 and this may cause some wrong UE/NW behaviour (since the UE may receive an on-demand request by the UE that is not expecting).

**Question 4: Do companies agree that the UE should stop timer T350 upon the reception of reconfiguration message which includes *reconfigurationWithSync* in *spCellConfig* of MCG?**

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## 2.2 Capability for the on-demand SIB in CONNECTED

The following proposals have been submitted regarding the need of UE capability for on-demand SIB in RRC\_CONNECTED:

* It’s mandatory to support on-demand SI in RRC\_CONNECTED by UEs capable of features, where the corresponding SIB(s) is on-demand SI in RRC\_CONNECTED, i.e. no UE capability for on-demand SI in RRC\_CONNECTED is introduced.[3]
* Proposal 1: define a non-mandatory capacity for on-demand SI in RRC\_CONNECTED in TS 38.306. [14]
* Proposal 2: UE needs to report its capability of on-demand SI in RRC\_CONNECTED to networks. [14]

So far, the understanding about this feature was that no UE capabilities were needed to be signalled by the UE regarding the on-demand SIB feature in CONNECTED. One reason is that, even if the network decides to signal the *onDemandSIB-RequestConfig*, since the triggering of this feature is UE-based, if the UE does not support it will just skip this configuration and will never trigger the procedure. On the other side, even the UE supports this feature and the network set the prohibit timer, the UE by implementation may decide to never trigger the on-demand message. Therefore, our assumption is that no capabilities are needed. However, in case this feature is not mandatory for the UE, having a one-bit capability will avoid the network to configure something that the UE cannot support.

**Question 5: Do companies agree that no L2 capabilities are needed for the on-demand SIB feature in CONNECTED? If the answer is not, please state your proposal in the comment section.**

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## 2.3 SIBs to be requested on-demand while in CONNECTED

The following proposals have been formulated regarding new SIBs to be requested on-demand while in CONNECTED:

* SIB10 can’t be requested on-demand by UEs in RRC\_CONNECTED.[3]
* Allow the UE in RRC\_CONNECTED to request SIB9, irrespective of the relation to IIoT.[4]
* Introduce a reference SFN as an optional field in SIB9, which is only included when the SIB is delivered via unicast.[4]
* SIB10 can be requested on-demand by UEs in RRC\_CONNECTED.[8]

Regarding the request of SIB10, as Vivo pointed out in [3], it looks like that this SIB may not essential to be received by the UE while in RRC\_CONNECTED because the UE The UE may use local release of RRC connection to perform manual search if it is not possible to perform the search while RRC connected.

**Question 6: Do companies agree that SIB10 should not be requested on-demand by UEs in CONNECTED?**

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A second proposal is, instead, to allow the UE to request SIB9 on-demand while in CONNECTED (irrespectively of the relation with IIoT). Even if this it may be, of course, possible, our understanding is that the request of the UTC time reference has been already widely discussed in the IIoT session. According to this, after a long and painful discussion, it was agreed that there was no benefit to request the UTC time on-demand and that is also one of the reasons why the on-demand SIB framework was not adopted at the end. Further, allowing this now, it poses two problematic that is quite difficult to solve at the last meeting of this release. On problem is that will create double handling of SIB9 for IIoT and the general framework and network and UE restriction need to be specified to avoid any collision in the handling of this SIB. This is something to be avoided at this late stage of the release. The second problem is that the request on-demand of UTC time of SIB9 may have implication in RAN3 for the CU-DU split and therefore, we should consult RAN3 is this is okay. If this is the case, it would be impossible to sort out this problem during this meeting. Therefore, our suggestion would be to not support the SIB9 on-demand, while in CONNECTED, in Rel-16.

**Question 7: Do companies agree that SIB9 (regardless of the relation with IIoT) should not be requested on-demand by UEs in CONNECTED?**

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## 2.4 Comments on the on-demand SIB CR (38.330 and 38.331)

### 2.4.1 ASN1 comment on the RRC CR

Companies are invited to provide their comments on the submitted RRC CR in R2-2005172

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### 2.4.2 Comments on stage2 CR

Companies are invited to provide their comments on the submitted RRC CR in R2-2005173

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# 3 Conclusion

Based on the discussions in Section 2, the following proposals are formulated:

# 3 References

1. [R2-2004530](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2004530.zip), Corrections for onDemandSIB-RequestProhibitTimer operation, Samsung Electronics Co., Ltd, RAN2#110e, Electronic meeting, June 2020

1. [R2-2004604](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2004604.zip), Open issues on Prohibit timer, Lenovo, Motorola Mobility, RAN2#110e, Electronic meeting, June 2020

1. [R2-2004641](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2004641.zip), Remaining issues of on-demand SI in RRC\_CONNECTED, vivo, RAN2#110e, Electronic meeting, June 2020

1. [R2-2004706](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2004706.zip), On-demand request for SIB9 (for reasons beyond IIoT) [M118], MediaTek Inc., RAN2#110e, Electronic meeting, June 2020

1. [R2-2004795](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2004795.zip), [C701]Prohibit Timer for on Demand SIB Request in RRC\_CONNECTED, CATT, RAN2#110e, Electronic meeting, June 2020

1. [R2-2004986](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2004986.zip), [H780] Text Proposal on PDCCH monitoring for SI request in RRC\_CONNECTED, Huawei, HiSilicon, RAN2#110e, Electronic meeting, June 2020

1. [R2-2004987](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2004987.zip), [H781-783] Correction on OnDemandSIB-Request, Huawei, HiSilicon, RAN2#110e, Electronic meeting, June 2020

1. [R2-2005102](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2005102.zip), Discussion on the remaining issue of on-demand SI in RRC\_CONNECTED, Huawei, HiSilicon, RAN2#110e, Electronic meeting, June 2020

1. [R2-2005172](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2005172.zip), Introduction of on-demand SIB(s) procedure in CONNECTED, Ericsson (Rapporteur), RAN2#110e, Electronic meeting, June 2020

1. [R2-2005173](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2005173.zip), Introduction of on-demand SIB(s) procedure in CONNECTED, Ericsson (Rapporteur), RAN2#110e, Electronic meeting, June 2020

1. [R2-2005174](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2005174.zip), [E243] ASN.1 remaining issues on on-demand SIBs in CONNECTED, Ericsson, RAN2#110e, Electronic meeting, June 2020

1. [R2-2005597](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2005597.zip), [Z113] [Z117] Text proposal for accepted RIL issues, ZTE Corporation, Sanechips, RAN2#110e, Electronic meeting, June 2020

1. [R2-2005696](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs//R2-2005696.zip), Condition for T350 stop, LG Electronics Inc., RAN2#110e, Electronic meeting, June 2020

1. [R2-2005460](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_110-e/Docs/R2-2005460.zip), Discussion on UE capability for OdSIB, Huawei, HiSilicon, RAN2#110e, Electronic meeting, June 2020