**3GPP TSG-RAN WG2 #111-e R2-2008627**

Online, August 17th - 28th, 2020

**Agenda Item: 6.1.3**

**Source: CMCC**

**Title: [AT111-e][022][NR16] Summary for Early Implementation**

**Document for: Discussion and decision**

# 1 Introduction

This document is for the following offline discussion, particularly for topics in 6.1.3:

* [AT111-e][022][NR16] Early Implementation (CMCC)

 Scope: Treat R2-2008102, R2-2008103, R2-2006716, R2-2007231

 Expected Outcome: Agreed CR 38331

 Deadline: CR Agreed by EOM, Deadline for comments 1 day earlier, or as set by rapporteur

This contribution is a summary of 6.1.3 TS 38.331 for early implementation. There are 5 contributions [1-5], including proposals of early implementation in NR and corresponding CRs. This summary is aimed to provide conclusion and agreed 38.331 CR. And please find and review the draft CR in the box (022).

# 2 Discussion

## 2.0 Contact list of delegates

To make it easier to find the correct contact delegate in each company for potential follow-up questions, the rapporteur encourages the delegates who provide input to provide their contact information in this table:

|  |  |
| --- | --- |
| Company | Delegate contact |
| CMCC | Li Chai (chaili@chinamobile.com) |
| Huawei, HiSilicon | Yang Zhao (zhaoyang@huawei.com) |
| Telecom Italia | Damiano Rapone (damiano.rapone@telecomitalia.it) |

|  |  |
| --- | --- |
| Nokia | amaanat.ali@nokia.com |
| Ericsson | Mattias Bergström (mattias.a.bergstrom@ericsson.com) |

|  |  |
| --- | --- |
| CATT | Erlin Zeng (erlin.zeng@catt.cn) |
| Futurewei | Hao Bi (hao.bi@futurewei.com) |
| OPPO | duzhongda@oppo.com |
| vivo | kimba@vivo.com |
| Qualcomm Incorporated | Masato Kitazoe (mkitazoe [at]qti.qualcomm.com) |
| ZTE | YuanGao (gao.yuan66@zte.com.cn) |
| Samsung | Himke van der Velde (himke.vandervelde@samsung.com) |
| Intel | richard.c.burbidge@intel.com |
| China Telecom | zhangt77@chinatelecom.cn |
| Lenovo | Hyung-Nam Choi (hchoi5@lenovo.com) |
| MediaTek | Nathan Tenny (nathan.tenny@mediatek.com) |
| BT | Salva Diaz (salva.diazsendra@bt.com) |

## 2.1 Potential Agreements

The following agreements are proposed based on the contributions [1-5]:

**Proposal 1: Considering to apply the existing rule to realize early release UE implementation of R16 enhanced features, adding the candidate features after the approval into the Annex G is regarded as a preferred way. The evaluation of whether a feature is to be early implementable is to be decided on a case-by-case basis, e.g. where there is a strong industry demand.**

**Question 1: Do you agree with Proposal 1?**

|  |  |  |
| --- | --- | --- |
| Company | YES/NO | Comment / alternative proposal |
| CMCC | YES |  |
| Huawei, HiSilicon | Yes |  |
| Telecom Italia | Yes | The CR coversheet should always contain the ‘magic sentence’ for a feature which has been decided to be early implementable (this is in line with P3 in R2-2006716) |
| Nokia | Yes |  |
| Ericsson | Yes |  |
| CATT | Yes |  |
| Futurewei | Yes |  |
| vivo | Yes |  |
| Qualcomm Incorporated | Yes |  |
| ZTE | Yes |  |
| Samsung | Yes |  |
| Intel | Yes | While agreeing with the proposal we would like to stress the final point relating to strong industry demand. For new features, we should only include the early implementation sentence on the CR coversheet and add an entry 38.331 Annex C in exceptional circumstances based on strong industry demand. We would like to avoid a situation where RAN2 (and possibly RAN) have to routinely discuss this question for every new feature.Note that the new Annex as proposed in question 2 and 3 (equivalent to 36.331 Annex F plus the clarification from question 3) provides a framework where, in principle, it is possible to implement any feature in an earlier release and the decision to do so can be made by discussions between vendors and operators outside of 3GPP.Finally, a minor point on the wording of the proposal. Given this discussion is about NR, it would be better to refer to 38.331 Annex C instead of referring to Annex G. |
| China Telecom | Yes |  |
| Lenovo | Yes | We agree with the comments from TI and Intel. That means there is no stringent need to add every early implementable feature in Annex C of 38.331. |
| MediaTek | Yes |  |
| BT | Yes | We consider that a feature that has been categorized as early implement should be captured in 36.331 annex G and 38.331 Annex C. We don’t see the point to skip features that has been already agreed as “early implementation”. That will result in a more difficult to identify them but it won’t modify the fact that it is early implementation.Apart, we agree with TIM with the need to capture an early implementation feature in its CR coversheet. |

**All participants agree the proposal 1.**

**Proposal 2: it is proposed to introduce the description of the UE requirements regarding how the ASN.1 definitions can be comprehended by the UE in the TS 38.331 as well, which is similar to that in Annex F of TS 36.331.**

**Question 2: Do you agree with Proposal 2 ?**

|  |  |  |
| --- | --- | --- |
| Company | YES/NO | Comment / alternative proposal |
| CMCC | YES |  |
| Huawei, HiSilicon | Yes |  |
| Telecom Italia  | Yes |  |
| Nokia | Yes |  |
| Ericsson | Yes |  |
| CATT | Yes |  |
| Futurewei | Yes |  |
| vivo | Yes |  |
| Qualcomm Incorporated | Yes |  |
| ZTE | Yes |  |
| Samsung | Yes |  |
| Intel | Yes |  |
| China Telecom | Yes |  |
| Lenovo | Yes |  |
| MediaTek | Yes |  |
| BT | Neutral |  |

**One company’s position is neutral and the other participants agree the proposal 2.**

**Proposal 3: it is proposed the clarification on the inconsistent description on the UE requirements on transfer syntax (ASN.1) comprehension between broadcast signalling and dedicated signalling is required.**

**Question 3: Do you agree with Proposal 3?**

|  |  |  |
| --- | --- | --- |
| Company | YES/NO | Comment / alternative proposal |
| CMCC | Yes |  |
| Huawei, HiSilicon | Yes |  |
| Telecom Italia | Yes |  |
| Nokia | Yes | Correct, UE requirements regarding the ASN.1 to be comprehended are needed to be clarified, covering both broadcast and decicated signalling. |
| Ericsson | Yes |  |
| CATT | Yes |  |
| Futurewei | Yes |  |
| vivo | Yes |  |
| Qualcomm Incorporated | Yes |  |
| ZTE | Yes |  |
| Samsung | Yes | We agree both types of signalling should be covered and are largely fine with the draft CR but have some minor suggestions regarding detailed wording. |
| Intel | Yes |  |
| China Telecom  | Yes |  |
| Lenovo | Yes | On the CR in R2-2008103 we have following comments:* In the ASN.1 example the Need codes need to be corrected to NR style.
* In the description to “Non-critical extensions (dedicated and broadcast signaling)”:
	+ Typos need to be corrected and redundancies can be removed, e.g. broadcast signalling description can be merged.
	+ We wonder of the highlighted phrase in the broadcast signaling description. We think it should better to either remove it or say instead “the UE **may** indicate early support of”. Reason: there may be early implementable features which require only broadcast signaling w/o any UE capability signalling.

*If the early implemented feature involves one or more non-critical extensions (i.e. case of broadcast signalling),the SIB(s) containing the release X+ N fields related to the early implemented features may also include other extensions introduced after the release X that are not the parts related to the feature which the UE indicates early support of in UE capabilities. The UE shall comprehend such intermediate fields (but again is not required to support the functionality associated with these intermediate fields, in case this concerns optional features not supported by the UE).* |
| MediaTek | Yes | The draft CR is mainly OK but we have some comments on the wording. |
| BT | Yes |  |

**All participants agree the proposal 3.**

## 2.1 Potential Agreements (de-prioritized)

In this section, companies are invited to propose your preferred features for the early release implementation in NR. However, since this item is predicted to be controversial and RAN plenary is possible to be involved for the last conclusion, we just do our best to achieve an agreement on allowed features for the early release implementation in NR. If it was too controversial, this part would not be reflected in the agreed CR.

**Question 4: what’s your preferred features?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Preferred features for the early release implementation in NR** | **Comment / alternative proposal from other participants** |
| CMCC | * Inter-band CA with unaligned frame boundary,
* UL TX switching,
* L3 CSI-RS measurement Result Reporting
 |  |
| Huawei, HiSilicon | We understand we should first capture what have already been agreed to allow early implementation, [R2-2007960](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_111-e%5CDocs%5CR2-2007960.zip) has proposed to capture this according to P1 and we suggest to agree this CR at this meeting.For new features which would potentially be early implemented, we need more time to think about it and we also think this is better to be contribution driven and thus we can understand better the motivation. |  |
| Telecom Italia | --- | It should be discussed on a case-by-case basis (as indicated in Q1, mainly considering strong market requirements from operators). We share the view of Huawei on the need to discuss based on contributions provided by interested companies. |
| Nokia |  | Agree with Telecom Italia that this is a small subset and case by case basis discussion. Of course, final decision rests with RAN plenary. |
| CATT | We tend to agree with Huawei comments. The previous discussions focus more on general principle that is along the line of LTE so no problem. Regarding exactly which feature we apply these more time is needed to check. |  |
| Futurewei |  | This email discussion can focus on the general principle of supporting early implementation of later release’s feature.The actual feature in question should be proposed in corresponding contribution and discussed case-by-case. |
| OPPO | We also think this email intends to discuss general principle rather detail features for early implementation. |  |
| vivo |  | Agree with Futurewei |
| Qualcomm Incorporated |  | We are concerned that more and more features are solicited for early implementation this lightly. We suggest careful considerations be given on this. |
| ZTE | We prefer to agree on the general principle of supporting early implementation first. The content of the white list can be discussed case by case based on contributions and we need more time to think about it. |  |
| Samsung |  | We think that for now we should just agree the general principle. We also agree with others that early implementation should be discussed on a case by case basis i.e. based on individual input/ proposals and that it should be agreed only after careful evaluation. |
| Intel |  | We have similar view to Qualcomm's comment above. So again we would like to stress that this approach is taken in exceptional cases when there is strong industry demand (as also commented to question 1) |
| China Telecom | We also think the feature list for early release implementation should be decided case by case based on contributions provided by interested companies.  |  |
| Lenovo |  | We agree with other that for this email discussion we should focus on the general principle. |
| MediaTek |  | We also think that features should be discussed case by case, driven by contributions in the usual RAN2 working mode. This discussion can focus on capturing the principles. |
| BT |  | As many other companies, we consider that case-by-case is the right way to move forward on this.In our understanding, the fact that a feature is identified as “early implementation” is a matter of several factors and therefore, it is difficult to find a specific rule or methodology for it. |

# **3 Conclusion**

During the email discussion, all participants agree the proposal 1 and proposal3. Regarding proposal 2, one company’s position is neutral and the other participants are positive. Considering preferred features for the early release implementation in NR, all companies prefer to agree on the general principle of supporting early implementation first. And the content of the white list can be discussed case by case based on contributions afterwards. Meanwhile, no company object to the proposal of capturing the feature listed in R2-2007960 in this corresponding CR, which has already been agreed to allow early implementation.

Agreed proposals during email discussion:

**Proposal 1: Considering to apply the existing rule to realize early release UE implementation of R16 enhanced features, adding the candidate features after the approval into the Annex G is regarded as a preferred way. The evaluation of whether a feature is to be early implementable is to be decided on a case-by-case basis, e.g. where there is a strong industry demand.**

**Proposal 2: it is proposed to introduce the description of the UE requirements regarding how the ASN.1 definitions can be comprehended by the UE in the TS 38.331 as well, which is similar to that in Annex F of TS 36.331.**

**Proposal 3: it is proposed the clarification on the inconsistent description on the UE requirements on transfer syntax (ASN.1) comprehension between broadcast signalling and dedicated signalling is required.**

**Proposal 4: it is proposed to capture the feature proposed in** [**R2-2007960**](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_111-e%5CDocs%5CR2-2007960.zip)**, which has already been agreed to allow early implementation in the TS 38.331 according to P1.**

# 4 References

1. R2-2001627 Impact of CG/SPS with periodicities non dividing HF length Sequans CommunicationsR2-2008102 Early Release Support of Features in NR CMCC, ZTE, Huawei, CATT, Ericsson discussion Rel-17 TEI16
2. R2-2008103 CR for Early Implementation in NR CMCC, ZTE, Huawei, CATT, Ericsson CR Rel-17 38.331 16.1.0 1961 2 B TEI16
3. [R2-2006716](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_111-e%5CDocs%5CR2-2006716.zip) Handling of early implementable features in NR Intel Corporation discussion Rel-16 TEI16
4. [R2-2007231](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_111-e%5CDocs%5CR2-2007231.zip) UE requirements on ASN.1 comprehension covering early implementation Samsung Telecommunications CR Rel-16 38.331 16.1.0 1807 - F TEI16
5. [R2-2007960](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_111-e%5CDocs%5CR2-2007960.zip) Introduction of CR containing early implementable feature Huawei, HiSilicon CR Rel-16 38.331 16.1.0 1949 - F TEI16