3GPP TSG-RAN WG2 #117-e R2-220xxxx

Electronic meeting, 21st February – 3rd March 2022

Agenda Item: 9.13

Source: Ericsson

Title: Report of [Offline-207] [LTE] TEI17 UE height reporting (Ericsson)

Document for: Discussion

#  Introduction

This contribution treats the following offline discussion during RAN2#117 meeting.

**[AT117-e][207][LTE] TEI17 UE height reporting (Ericsson)**

        Scope: Collect comments UE height reporting CRs marked for this discussion.

        Intended outcome: Agreeable CRs.

        Deadline: Deadline 1

**Deadline 1 (discussions for Thu online)**

* **Comment deadline, 1st phase:** Wednesday W1, 1000 UTC (for collecting views)
* **Rapporteur proposals, 1st phase:** Wednesday W1, 1400 UTC (proposed outcome)
* **Document deadline, 1st phase:** Thursday W1, 0430 UTC (discussion report)
* Discussion may continue to 2nd phase (using Deadline 3) based on online decisions

To aid the discussion amongst the delegates, please include the company name and the corresponding delegate name and email address in the table below.

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| **Company name** | **Delegate name** | **Email address** |
| Qualcomm | Umesh Phuyal | Uphuyal@qti.qualcomm.com |
| Ericsson | Pradeepa Ramachandra | pradeepa.ramachandra@ericsson.com |
| Huawei, HiSilicon |  |  |
| KDDI | Taisei Watabe | ti-watabe@kddi.com |
| Nokia, Nokia Shanghai Bell | Malgorzata Tomala | malgorzata.tomala@nokia.com |
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# Discussion

During RAN2#116 meeting, the following was agreed.

[R2-2111260](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_116-e/Docs/R2-2111260.zip) UE’s height location measurement for LTE MDT KDDI Corporation, Ericsson, China Unicom, Samsung, Qualcomm Inc., Telecom Italia discussion

*Proposal 1: RAN2 agree to develop a solution to indicate UE’s height to eNB for MDT purpose, at least for immediate MDT and logged MDT.*

- Nokia wonders what the intention is? Do we continue discussing how to do it in the next meeting? KDDI explains alt.2 would be the way to go, same as in NR. Would like to discuss details over email.

- QC is fine with P1, P2 is not so clear as it could make the work larger and this can be done in Rel-18. For P3, both can work. Ericsson agrees for P1/2 but thinks Alt.2 is better in P3. Huawei agrees with QC and prefers alt.2 for P3.

* There is support to do UE height indication only for immediate/logged MDT (using *uncompensatedBarometricPressure* as standardized in NR) in TEI17. Proponents should submit CRs to next meeting for final decision.

Based on this agreement, three CRs were submitted to the RAN2#117 meeting.

1. Changes to TS 36.331 in R2-2202290 [1].
2. Changes to TS 36.306 in R2-2202292 [2].
3. Changes to TS 37.320 in R2-2202291 [3].

## Changes to TS 36.331 in R2-2202290

During an unofficial offline discussion in the preparation to RAN2#117 meeting, there were discussions on whether to follow the same configuration framework as in NR. In the current implementation, the barometric sensor reporting request is in the *sensor-NameConfig* IE of *otherConfig* or *LoggedMeasurementConfiguration*. Some companies have indicated that they would prefer to have the barometric sensor reporting request in *otherConfig* directly. The advantage of the previous configuration method is that it is aligned with NR configuration, thus helping in having common implementation whereas the latter is simpler in terms of number of IEs associated to the configuration.

Based on this, rapporteur would like to ask the following question.

Question-1: Which of the following implementation is preferred for configuring barometric sensor reporting request?

Option-A (as in NR): (*otherConfig* or *LoggedMeasurementConfiguration*) 🡪 *sensor-NameConfig* 🡪 *measUncomBarPre*

Option-B: (*otherConfig* or *LoggedMeasurementConfiguration*) 🡪 *measUncomBarPre*

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| **Company name** | **Preferred option (A / B / any of A and B)** | **Comment** |
| Qualcomm | B | As the objective is only to introduce uncompensated barometric pressure reporting, this approach is simpler and within the scope of the TEI, i.e. no need to establish a framework for something for future given that LTE is not expected to keep evolving for too long. |
| Ericsson | A | To align the implementation of NR MDT with LTE MDT (which also affects RAN3 and SA5), it is always good to align the configuration possibilties. Having a common framework makes it simpler for RAN2, RAN3 and SA5.  |
| Huawei, HiSilicon | B | We think both option-A and B can work. For option-A, the latest CR captures the following:Sensor-NameConfig-r17 ::= SEQUENCE { measUncomBarPre-r16 ENUMERATED {true} OPTIONAL, ...}On one hand, it is not exactly the same as the preivous agreement (as Qualcomm mentioned). On the other hand, the above design has some benefits for future extensions, e.g. if later some companies would like to add more sensor measurements, Option-A is better. In NR, sensor measurements include 3 fields:* Uncompensated barometeric pressure
* UE speed
* UE orientation

So far, LTE operators seem only interested in the 1st field, so we understand that the other fields may not be so interesting for operators. In this case, we slightly prefer option-B. |
| KDDI | A | We share the view with Ericsson and prefer A. |
| Nokia, Nokia Shanghai Bell | B | Sensor-NameConfig is a generic name, while using the actual (name of the) configuration paramater that is a target here, i.e. measUncomBarPre is more appriopriate (self-explanatory). |
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**Rapporteur’s summary:**

To be added later

In the same email discussion, several further corrections to the CR were proposed by Lenovo. They are listed here.

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| Correction#1 | *LoggedMeasurementConfiguration-v17xy-IEs*: Need code for *sensor-NameConfig-r17* needs to be changed from Need OR to Need ON due to the SetupRelease structure.LoggedMeasurementConfiguration-v17xy-IEs ::= SEQUENCE {       sensor-NameConfig-r17               SetupRelease {Sensor-NameConfig-r17}       OPTIONAL,      --Need OR       nonCriticalExtension                SEQUENCE {}                                       OPTIONAL} |
| Correction #2 | *ReportConfigEUTRA*: remove comma after OPTIONAL[[     includeSensor-Meas-r17                     SetupRelease {Sensor-NameConfig-r17}                    OPTIONAL,      -- Need ON       ]] |
| Correction #3 | IE Sensor-NameConfig: Suffix of the field should be “-r17” and need code for the optional field is missing. Need OR should be ok.Sensor-NameConfig-r17 ::=           SEQUENCE {       measUncomBarPre-r16                 ENUMERATED {true}                   OPTIONAL,       ...} |
| Correction #4 | OtherConfig: remove comma after OPTIONAL.[[     sensor-NameConfig-r17        SetupRelease {Sensor-NameConfig-r17}   OPTIONAL,      --Need ON       ]] |
| Correction #5 | UE-EUTRA-Capability field descriptions: in the description of barometerMeasReport the word “measurement” should be added.“…uncompensated barometric pressure measurement reporting …” |
| Correction #6 | EUTRA-UE-Variables: The IE of sensor-NameConfig-r17 needs to be imported and not the field. |
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Of these corrections, rapporteur believes correction#2, parts of correction#3 (“-r17” instead of “-r16”), correction#4, correction#5 and correction#6 are straight forward changes. Rapporteur would like to ask if companies have any concern in updating the CR with these changes.

Question-2: Do you agree the following ‘straight forward’ corrections to R2-2202290?

1. Removal of comma after OPTIONAL in ReprotConfigEUTRA (Correction#2)
2. Suffix of “measUncomBarPre“ should be changed to “-r17” (Part of Correction#3)
3. Removal of comma after OPTIONAL in otherConfig. (Correction#4)
4. The word ’measurement’ is added in the description of barometerMeasReport (Correction#5)
5. The IE of sensor-NameConfig-r17 needs to be imported in EUTRA-UE-Variables instead of the corresponding field (Correction#6)

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| **Company name** | **Yes/No** **(to all or to specific corrections)** | **Comment** |
| Qualcomm | See comment | Suggested revisions to the RRC CR according to approach B is uploaded to the drafts folder. Based on that, many of these comments become obselete while others are valid. See the suggested revisions.[Ericsson-Rapporteur] Thanks for the revised CRs but we can decide on the exact contents of the CR based on the outcome of Question-1 from this first phase of email discussion. I agree with you that some of these changes are not required if option-B is chosen in Question-1. |
| Ericsson | Yes | All these are necessary changes but more of editorial in nature. |
| Huawei, HiSilicon | Yes |  |
| KDDI | Yes |  |
| Nokia, Nokia Shanghai Bell | See comment | Supportive to Qualcomm‘s suggestion |
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**Rapporteur’s summary:**

To be added later

On Correction#1, the proposal is to change the need code from Need OR to Need ON as the SetupRelease structure is used for sensor-NameConfig-r17.

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| Need ON(Used in downlink only) | *Optionally present, No action*A field that is optional to signal. If the message is received by the UE, and in case the field is absent, the UE takes no action and where applicable shall continue to use the existing value (and/ or the associated functionality). |
| Need OR(Used in downlink only) | *Optionally present, Release*A field that is optional to signal. If the message is received by the UE, and in case the field is absent, the UE shall discontinue/ stop using/ delete any existing value (and/ or the associated functionality). |

The Need OR structure was included in R2-2202290 along the same lines of includeBT-Meas-r15 and includeWLAN-Meas-r15 which were introduced in Rel-15. However, considering generic SetUpRelease structure guidelines have been establishment since then, the change to Need ON follows this guideline. Rapporteur believes that there would be no impact on the logged MDT feature with such a change as the reception of logged MDT configuration always replaces the entire stored logged MDT configuration as per section 5.6.6.3 and section 5.6.7.2.

#### 5.6.6.3 Reception of the *LoggedMeasurementConfiguration* by the UE

Upon receiving the *LoggedMeasurementConfiguration* message the UE shall:

1> discard the logged measurement configuration as well as the logged measurement information as specified in 5.6.7;

####  5.6.7.2 Initiation

The UE shall initiate the procedure upon receiving a logged measurement configuration in another RAT. The UE shall also initiate the procedure upon power off or detach.

The UE shall:

1> stop timer T330, if running;

1> if stored, discard the logged measurement configuration as well as the logged measurement information, i.e. release the UE variables *VarLogMeasConfig* and *VarLogMeasReport*;

 Based on this, rapporteur would like to ask the following.

Question-3: Do you agree to change the Need code from Need OR to Need ON for *sensor-NameConfig-r17* in *LoggedMeasurementConfiguration-v17xy-IEs*?

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| **Company name** | **Yes/No**  | **Comment** |
| Qualcomm | - | See proposed revisions in the drafts folder |
| Ericsson | Yes |  |
| Huawei, HiSilicon | Yes |  |
| KDDI | Yes |  |
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**Rapporteur’s summary:**

In the proposed CR (R2-2202290), the Need code is missing for the OPTIONAL field *measUncomBarPre* in *Sensor-NameConfig*. The proposed Need code is Need OR.

Question-4: Do you agree to add Need code Need OR for measUncomBarPre field in Sensor-NameConfig IE?

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| **Company name** | **Yes/No**  | **Comment** |
| Qualcomm | - | See proposed revisions in the drafts folder |
| Ericsson | Yes |  |
| Huawei, HiSilicon | Yes |  |
| KDDI | Yes |  |
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**Rapporteur’s summary:**

To be added later

Rapporteur would like to check with companies if they have found any other issue to be resolved.

Question-5: Other than the issues mentioned above, do you have any further correction proposal to R2-2202290?

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| **Company name** | **Identified issues** |
| Qualcomm | See proposed revisions in the drafts folder |
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**Rapporteur’s summary:**

To be added later

## Changes to TS 36.306 in R2-2202292

During the unofficial offline discussion in the preparation to RAN2#117 meeting, Lenovo brought up the correction regarding missing word ‘measurement’ in the description of the newly added UE capability. Rapporteur believes this to be a straightforward change.

“…uncompensated barometric pressure measurement reporting …”

Question-6: Do you agree to add the word ’measurement’ in the description of barometerMeasReport?

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| **Company name** | **Yes/No**  | **Comment** |
| Qualcomm | Yes | Also see suggested revisions in the drafts folder. |
| Ericsson | Yes |  |
| Huawei, HiSilicon | Yes |  |
| KDDI | Yes |  |
| Nokia | Yes |  |
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**Rapporteur’s summary:**

To be added later

Rapporteur would like to check with companies if they have found any other issue to be resolved.

Question-7: Other than the issue mentioned above, do you have any further correction proposal to R2-2202292?

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| **Company name** | **Identified issues** |
| Qualcomm | Similar to BT, WLAN, etc. we think two separate capabilities would be preferable for this also (for logged and immediate MDT). See RRC revision for suggested field names.See suggested revisions in the drafts folder. |
| Ericsson | We agree with Qualcomm’s view on having two separate capability bits. |
| Huawei, HiSilicon | Agree with Qualcomm. |
| KDDI | Agree with Qualcomm. |
| Nokia | Agree with Qualcomm. |
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**Rapporteur’s summary:**

To be added later

## Changes to TS 37.320 in R2-2202291

No correction proposals have been received for the CR in R2-2202291. Rapporteur would like to check with companies if they have found any other issue to be resolved.

Question-8: Do you have any further correction proposal to R2-2202291?

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| **Company name** | **Identified issues** |
| Qualcomm | Please check the uploaded revised version for suggestions. |
| Ericsson | We propose to wait for the outcome of Question-1 before deciding on the changes as suggested by Qualcomm |
| Huawei, HiSilicon | Q1 may impact the changes for TS 37.320. |
| KDDI | Share the view with Qualcomm and others. |
| Nokia | Agree with Qualcomm. |
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**Rapporteur’s summary:**

To be added later

# Conclusion

Based on the discussion in the previous sections we propose the following:

To be added later

# References

1. R2-2202290, On introducing height information reporting in MDT reports [LTE-Height-MDT], KDDI Corporation, Ericsson, CR,  Rel-17, 36.331, RAN2#117 meeting, February 2022.
2. R2-2202292, On introducing height information reporting in MDT reports [LTE-Height-MDT], KDDI Corporation, Ericsson,  CR,  Rel-17,  36.306, RAN2#117 meeting, February 2022.
3. R2-2202291, On introducing height information reporting in MDT reports [LTE-Height-MDT],  KDDI Corporation, Ericsson,  CR,  Rel-17,  37.320, RAN2#117 meeting, February 2022.