**3GPP TSG-RAN WG2 Meeting #116 R2-21xxxxx**

**Online, 01 – 12 November 2021**

**Agenda item:** 5.5

**Source:** vivo

**Title:** Summary of [AT116-e][614][POS] AI 5.5 CRs

**Document for:**  Discussion

# 1. Introduction

This document summarizes the following email discussion:

* [AT116-e][614][POS] AI 5.5 CRs (vivo)

      Scope: Evaluate and conclude on the CRs in R2-2111126 and R2-2111127.

      Intended outcome: Agreed CRs

      Deadline:  Thursday 2021-11-11 0200 UTC

## 1.1 References

[1] R2-2111126, "Correction on LPP message delivery", vivo, CR Rel-15 37.355 15.2.0 - F

[2] R2-2111127, "Correction on LPP message delivery", vivo, CR Rel-16 37.355 16.6.0 - A

## 1.2 Contact Points

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

|  |  |  |
| --- | --- | --- |
| Company | Name | Email Address |
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# 2. Discussion

## 2.1 Background

Both CRs [1][2] would correct the following description in the current stage 3 specification:

**Correction 1**

For periodic Assistance Data Transfer procedure in sections 5.2.1a and 5.2.2a, the text description for periodic assistance data parameter is “*a duration for ending the assistance data delivery*”. While in section 6.5.2.13, the corresponding parameter is not “*duration*”, but “*deliveryAmount*”. The description and ASN.1 are not aligned.

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| 1. The target sends a *RequestAssistanceData* message to the server using some available *transactionID* T1. The message contains a *periodicSessionID* S (different to any other *periodicSessionID* currently in use between the target and server) in the IE *CommonIEsRequestAssistanceData.* The message also includes a positioning method specific assistance data request element (e.g., IE *A-GNSS-RequestAssistanceData*) identifying the type of assistance data being requested together with desired periodicity conditions for sending it and a duration for ending the assistance data transfer (e.g., in IE *GNSS-PeriodicAssistDataReq*). |

#### – *GNSS-PeriodicControlParam*

The IE *GNSS-PeriodicControlParam* is used to specify control parameters for a periodic assistance data delivery.

-- ASN1START

GNSS-PeriodicControlParam-r15 ::= SEQUENCE {

deliveryAmount-r15 INTEGER (1..32),

deliveryInterval-r15 INTEGER (1..64),

...

}

-- ASN1STOP

Therefore, the CRs propose to rephrase the description as follows:

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| 1. The target sends a *RequestAssistanceData* message to the server using some available *transactionID* T1. The message contains a *periodicSessionID* S (different to any other *periodicSessionID* currently in use between the target and server) in the IE *CommonIEsRequestAssistanceData.* The message also includes a positioning method specific assistance data request element (e.g., IE *A-GNSS-RequestAssistanceData*) identifying the type of assistance data being requested together with desired periodicity conditions and delivery number for sending it (e.g., in IE *GNSS-PeriodicAssistDataReq*). |

**Correction 2**

For the LPP procedures in sections 5.2.3 and 5.3.3, the action of delivering the message to lower layers for transmission is missing.

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| 5.2.3 Transmission of LPP Request Assistance Data  When triggered to transmit a *RequestAssistanceData* message, the target device shall:  1> set the IEs for the positioning-method-specific request for assistance data to request the data indicated by upper layers. |

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| 5.3.3 Reception of Request Location Information  Upon receiving a *RequestLocationInformation* message, the target device shall:  1> if the requested information is compatible with the target device capabilities and configuration:  2> include the requested information in a *ProvideLocationInformation* message;  2> set the IE *LPP-TransactionID* in the response to the same value as the IE *LPP-TransactionID* in the received message;  2> deliver the *ProvideLocationInformation* message to lower layers for transmission.  1> otherwise:  2> if one or more positioning methods are included that the target device does not support:  3> continue to process the message as if it contained only information for the supported positioning methods;  3> handle the signaling content of the unsupported positioning methods by LPP error detection as in 5.4.3. |

Therefore, the CRs propose to add the missing action as follows:

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| 5.2.3 Transmission of LPP Request Assistance Data  When triggered to transmit a *RequestAssistanceData* message, the target device shall:  1> set the IEs for the positioning-method-specific request for assistance data to request the data indicated by upper layers.  1> deliver the message to lower layers for transmission. |

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| 5.3.3 Reception of Request Location Information  Upon receiving a *RequestLocationInformation* message, the target device shall:  1> if the requested information is compatible with the target device capabilities and configuration:  2> include the requested information in a *ProvideLocationInformation* message;  2> set the IE *LPP-TransactionID* in the response to the same value as the IE *LPP-TransactionID* in the received message;  2> deliver the *ProvideLocationInformation* message to lower layers for transmission.  1> otherwise:  2> if one or more positioning methods are included that the target device does not support:  3> continue to process the message as if it contained only information for the supported positioning methods;  3> handle the signaling content of the unsupported positioning methods by LPP error detection as in 5.4.3.  3> deliver the *ProvideLocationInformation* message to lower layers for transmission. |

## 2.2 Discussion

**Question 1:** Do you agree with **Correction 1** to rephrase the "duration for ending the assistance data transfer" to "delivery number"?

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| Company | Yes/No | Comments |
| Intel | No | DO not see the problem since the deliveryAmount is also used to indicate the duration. |
| Huawei, HiSIlicon | No | Agree that it is not totally accuate, but we don’t think there is any ambiguity |
| Nokia | No | This change is not essential since the delivery amount for a periodically transferred assistance data, along with periodicity, dictates the duration for ending the assistance data transfer. So, the current text is fine. |
| ZTE | No | deliveryAmount-r15 and deliveryInterval-r15 are both used to describe a duration for ending the assistance data transfer. So the current wording is correct |
| CATT | No | The current text is not wrong. The duration can be deduced from the periodic control parameters. |
| vivo | Yes | Agree with the above that the duration can be derived with the deliveryAmount and deliveryInterval.  However, it’s not that exact. Take logged MDT as example, the loggininterval can be {ms320, ms640, ms1280, ms2560, ms5120, ms10240, ms20480, ms30720, ms40960, ms61440 , infinity} and the the LoggingDuration can be {min10, min20, min40, min60, min90, min120, spare2, spare1}. In this case, the duration is not equal to amount\*interval.  The procedure text states that there is a “duration” element, but there is no “duration” element in the ASN.1. Obviously, the procedure text is not in line with the ASN.1, which will cause confusion more or less. |
| Qualcomm | No | We can not see anything wrong with the current text. |
| Apple | Yes | Agree that the current text is not ideal |
| Xiaomi | Yes | The proposed text is more aligned with the ASN.1. |
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**Question 2:** Do you agree with **Correction 2** to add the action "deliver the message to lower layers for transmission"?

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| Company | Yes/No | Comments |
| Intel |  | Agree it is missing, But not essential. |
| Huawei, HiSIlicon |  | Not that essential |
| Nokia | No | Stage 2 has all the details of the underlying transport layer protocols and interfaces to support transmission of messages for a UE-terminated protocol i.e., LPP. “Signalling between LMF and UE” section in stage 2 explains well how the underlying transport is used to transfer LPP PDU. We do not see any ambiguity in the specification. So, not an essential correction. |
| ZTE |  | Not essential |
| CATT | No | The correction is correct, but not essential. There are also many other places lack of the sentence. |
| vivo | Yes | We suppose it’s a consensus that delivery action is missing somewhere. If so, delivery actions should be consistent, especially in the same section, i.e., either delete it in each procedure or add it if missing. Otherwise, it will confuse that, for some cases, the LPP message is not to be sent out. |
| Qualcomm | No | Not essential. This text is there since Rel-9 and we are not aware of any problems/confusion. |
| Apple | No | Not essential |
| Xiaomi |  | Not essential |
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# 4. Proposed Conclusion

TBD