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

Online Meeting, 21st February– 3rd March, 2022

**Agenda item: 8.11.6**

**Source: CATT**

**Title: [AT117-e][601][POS] BDS running CRs (CATT)**

**WID/SID: NR\_pos\_enh-Core - Release 17**

**Document for: Discussion and Agreement**

# 1 Introduction

This document is to kick off the following email discussion:

* [AT117-e][601][POS] BDS running CRs (CATT)

      Scope: Review the following CRs, collect comments, and update if necessary:

       R2-2202402 (BDS introduction to 37.355)

       R2-2202403 (BDS introduction to 36.305)

       R2-2202404 (BDS introduction to 38.305)

      Intended outcome: Endorsable CRs

      Deadline:  Friday 2022-02-25 1000 UTC

In this email discussion the following contributions related with A-GNSS enhancements, i.e., including support of BDS B2a signal and BDS B3I signal are discussed to decide if these contributions can be agreed.

1. [R2-2202402](ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_117-e/Docs/R2-2202402.zip) Introduction of B2a and B3I signal in BDS system in A-GNSS CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, HiSilicon, Intel Corporation, ZTE Corporation, CBN, vivo, OPPO, Lenovo, MediaTek Inc, Spreadtrum Communications, Xiaomi. CR Rel-17 37.355 16.7.0 B NR\_pos\_enh-Core
2. [R2-2202403](ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_117-e/Docs/R2-2202403.zip) Introduction of B2a and B3I signal in BDS system in A-GNSS CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, HiSilicon, Intel Corporation, ZTE Corporation, CBN, vivo, OPPO, Lenovo, MediaTek Inc, Spreadtrum Communications, Xiaomi. CR Rel-17 36.305 16.4.0 B NR\_pos\_enh-Core
3. [R2-2202404](ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_117-e/Docs/R2-2202404.zip) Introduction of B2a and B3I signal in BDS system in A-GNSS CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, HiSilicon, Intel Corporation, ZTE Corporation, CBN, vivo, OPPO, Lenovo, MediaTek Inc, Spreadtrum Communications, Xiaomi. CR Rel-17 38.305 16.7.0 B NR\_pos\_enh-Core

# 2 Contact Information

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

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| --- | --- |
| Company | Contact: Name (E-mail) |
| CATT | Jianxiang Li (lijianxiang@catt.cn) |
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# 3 Discussion

## 3.1 Impacts of BDS B2a signal and B3I signal in TS 37.355

[R2-2202402](ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_117-e/Docs/R2-2202402.zip) introduces the global B2a signal and B3I signal in the network-assisted BDS System, as part of A-GNSS positioning methods in LTE and NR to support higher accuracy multiple-frequency global positioning service. At the RAN2#116 meeting, R2-2109487 which introduced B2a signal in BDS system in A-GNSS, and R2-2109488 which introduced B3I signal in BDS system in A-GNSS were both endorsed.

R[2-2111504](file:///E:\WORK\1%203GPP\Meeting\RAN2%20116-e\2%20During\Docs\R2-2111504.zip) Introduction of B2a signal in BDS system in A-GNSS CATT, CAICT draftCR Rel-17 37.355 16.6.0 B NR\_pos\_enh-Core R2-2107140

* Endorsed

R[2-2109488](file:///E:\WORK\1%203GPP\Meeting\RAN2%20116-e\2%20During\Docs\R2-2109488.zip) Introduction of B3I signal in BDS system in A-GNSS CATT, CAICT draftCR Rel-17 37.355 16.6.0 B NR\_pos\_enh-Core R2-2107141

* Endorsed

At the RAN2#116bis meeting, [R2-2200298](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_114-e/Docs/R2-2105143.zip) merged the changes affected by introduction of B3I signal and B2a signal based on the latest version of spec TS 37.355 was endorsed.

R2-2200298 Introduction of B2a and B3I signal in BDS system in A-GNSS CATT, CAICT draftCR Rel-17 37.355 16.7.0 B NR\_pos\_enh-Core

 Endorsed (email discussion [AT116bis-e][613])

Additional update on CR R2-2202402:

Some offline comments for CR R2-2202402 are received, and we will update the CR during this meeting as follow:

Change #1: Since the IE BDS-ClockModel2-r16 is signalled in the DL ProvideAssistanceData message, the need codes “Need ON” should be added for both fields.

– *BDS-ClockModel2*

The IE *BDS-ClockModel2* is used for BDS B1C defined in [39] and BDS B2a defined in [X1].

-- ASN1START

BDS-ClockModel2-r16 ::= SEQUENCE {

bdsToc-r16 INTEGER (0..2047),

bdsA0-r16 INTEGER (-16777216..16777215),

bdsA1-r16 INTEGER (-2097152..2097151),

bdsA2-r16 INTEGER (-1024..1023),

bdsTgdB1Cp-r16 INTEGER (-2048..2047),

bdsIscB1Cd-r16 INTEGER (-2048..2047),

...,

[[ bdsTgdB2ap-r17 INTEGER (-2048..2047) OPTIONAL, -- Need ON

bdsIscB2ad-r17 INTEGER (-2048..2047) OPTIONAL -- Need ON

]]

}

-- ASN1STOP

Change#2: Correct the typo: e-Meeting, 21st February– 3rd March, 2022

**Rapporteur’s comments**: This is an essential correction for the introduction of BDS B2a and B3I signal in the TS 37.355. Network-assisted BDS positioning method provides assistant data to support a higher accuracy multiple-frequency global positioning service.

**Question 1**: Please provide comments below regarding the merged changes affected by introduction of B3I signal and B2a signal.

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| Company | Comments |
| CATT | Agree with the changes in the CR. |
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**Summary:**

## 3.2 Impacts of BDS B2a signal and B3I signal in TS 38.305

[R2-2202404](ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_117-e/Docs/R2-2202404.zip) introduces the global B2a signal and B3I signal in the network-assisted BDS System, as part of A-GNSS positioning methods in LTE and NR to support higher accuracy multiple-frequency global positioning service. At the RAN2#116 meeting, R2-2109486 which introduced B2a signal in BDS system in A-GNSS was endorsed.

R2-2109486 Introduction of B2a and B3I signal in BDS system in A-GNSS CATT, CAICT draftCR Rel-17 38.305 16.6.0 B NR\_pos\_enh-Core R2-2107139

 Endorsed

During the off-line discussion, we receive some comments for CR R2-2202404, and we will update the CR during this meeting as follow:

Change#1: Correct the Work item codes from ‘NR\_pos\_enh’ to ‘NR\_pos\_enh-Core’.

Change#2: Correct the typo: 3GPP TSG-RAN WG2 Meeting #117 electronic e-Meeting, 21st February– 3rd March, 2022

**Rapporteur’s comments**: This is an essential correction for the introduction of BDS B2a and B3I signal in the TS 38.305. Network-assisted BDS positioning method provides assistant data to support a higher accuracy multiple-frequency global positioning service.

**Question 2**: Please provide your views on adding the above BDS impacted corrections in TS 38.305.

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| Company | Comments |
| CATT | Agree with the changes in the CR. |
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**Summary:**

## 3.3 Impacts of BDS B2a signal and B3I signal in TS 36.305

[R2-2202403](ftp://ftp.3gpp.org/tsg_ran/WG2_RL2/TSGR2_117-e/Docs/R2-2202403.zip) introduces the global B2a signal and B3I signal in the network-assisted BDS System, as part of A-GNSS positioning methods in LTE and NR to support higher accuracy multiple-frequency global positioning service. At the RAN2#116 meeting, R2-2109485 which introduced B2a signal in BDS system in A-GNSS was endorsed.

R2-2109485 Introduction of B2a and B3I signal in BDS system in A-GNSS CATT, CAICT draftCR Rel-17 36.305 16.4.0 B NR\_pos\_enh-Core R2-2107138

 Endorsed

During the off-line discussion, we receive some comments for CR R2-2202403, and we will update the CR during this meeting as follow:

Change#1: Correct the Work item codes from ‘NR\_pos\_enh’ to ‘NR\_pos\_enh-Core’.

Change#2: Correct the typo: 21st February– 3rd March, 2022

**Rapporteur’s comments**:This is an essential correction for the introduction of BDS B2a and B3I signal in the TS 36.305. Network-assisted BDS positioning method provides assistant data to support a higher accuracy multiple-frequency global positioning service.

**Question 3**: Please provide your views on adding the above BDS impacted corrections in TS 36.305.

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| Company | Comments |
| CATT | Agree |
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**Summary:**

## 3.4 Any other comments

**Question 4**: please provide any additional comment; e.g. any additional impacts foreseen

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**Summary:**

# 4 Conclusion