3GPP TSG-RAN WG2 #111-e DRAFT R2-20xxxxx

Electronic Meeting, August 17 - 28, 2020

Agenda Item: 8.11.3.1

Source: Swift Navigation

Title: [AT111-e][607][POS] Integrity definitions, KPIs, and use cases (Swift)

Document for: Discussion, Decision

# 1 Introduction

This document provides templates and summaries for the following email discussion:

* [AT111-e][607][POS] Integrity definitions, KPIs, and use cases (Swift)

Scope: Discuss proposals and attempt to reach consensus on definitions, KPIs, and use cases for positioning integrity.

Intended outcome: Summary with potential agreeable TP

Deadline:  Thursday 2020-08-20 1100 UTC

The intention is to reach consensus on the initial principles of integrity as an input to the remaining Study objectives. Best attempts have been made to accurately capture and represent all submissions that contained proposals relating to one or more of the individual topics. Please let the email Rapporteur know of any accidental oversights as part of the initial review phase.

# 2 Integrity Definitions

The submissions containing integrity definitions are listed below. To assist the review process, they have been grouped according to those which included a broader suite of integrity definitions (including KPIs) (Table 1) and those which only proposed KPI definitions (Table 2).

|  |  |
| --- | --- |
| Tdoc [Reference] | Source |
| [R2-2006541](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2006541.zip) [1] | Swift Navigation, Deutsche Telekom, u-blox, Ericsson, Mitsubishi Electric, Intel Corporation, CATT, UIC |
| [R2-2007646](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2007646.zip) [2] | ESA |
| [R2-2007937](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2007937.zip) [3] | ZTE Corporation, Sanechips |

**Table 1.** Submissions containing general integrity definitions (including KPIs)

|  |  |
| --- | --- |
| Tdoc [Reference] | Source |
| [R2-2006954](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2006954.zip) [4] | Ericsson |
| [R2-2007050](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2007050.zip) [5] | Spreadtrum Communications |
| [R2-2007102](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2007102.zip) [6] | Apple |
| [R2-2007158](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2007158.zip) [7] | OPPO |
| [R2-2006564](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2006564.zip) [8] | Vivo |
| [R2-2006673](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2006673.zip) [9] | CATT |
| [R2-2006754](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2006754.zip) [10] | Intel Corporation |
| [R2-2007936](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2007936.zip) [11] | ZTE Corporation, Sanechips |
| [R2-2006579](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2006579.zip) [12] | Huawei, HiSilicon |
| [R2-2007073](http://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_111-e/Docs/R2-2007073.zip) [13] | Sumitomo Electric |

**Table 2.** Submissions containing specific KPI definitions

* Please comment on the following:
1. Which of the definitions do you agree should be included in the Study?
2. Which of the definitions do you feel should be modified?

|  |  |
| --- | --- |
| Company | Comments |
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# 3 Integrity KPIs

There was strong consensus in submissions [1, 3, 4, 5, 6, 7, 8, 9, 10, 12] to agree on the four KPIs below (the definitions for which will be determined in Section 2):

* **Target Integrity Risk (TIR)**
* **Alert Limit (AL)**
* **Protection Level (PL)**
* **Time-to-Alert (TTA)**

While there were minor variations on the naming of some terms (e.g. Alarm versus Alert [9, 11]; Error Limit versus Alert Limit [6]; freshness of the positioning [13]), the names presented above represent the majority view. One proposal [4] also introduced the case for adding Continuity and Availability to the stated KPIs.

* Please comment if you agree with the list of four KPIs or think it should be modified:

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| Company | Comments |
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# 4 Integrity Use Cases

A number of use cases were proposed in submissions [1, 2, 4, 8, 9, 12, 13] with respect to 3GPP.

Please indicate the use cases which you feel should be considered for integrity.

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| Company | Comments |
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# 5 References

1. R2-2006541 TP for Study on Positioning Integrity and Reliability, Swift Navigation, Deutsche

Telekom, u-blox, Ericsson, Mitsubishi Electric, Intel Corporation, CATT, UIC.

1. R2-2007646 Discussion on use cases and KPIs for position integrity, ESA.
2. R2-2007937 Discussion of the integrity events and integrity failure, ZTE Corporation, Sanechips.
3. R2-2006954 Positioning integrity KPIs and support for RAT dependent use cases, Ericsson
4. R2-2007050 Discussion on positioning integrity KPIs and use cases, Spreadtrum Communications
5. R2-2007102 Discussion on Positioning Integrity, Apple
6. R2-2007158 Discussion on the KPIs of integrity, OPPO
7. R2-2006564 Identify positioning integrity use case and KPIs, Vivo
8. R2-2006673 Discussion on integrity KPIs and use cases, CATT
9. R2-2006754 Consideration on positioning integrity, Intel Corporation
10. R2-2007936 Discussion of the positioning integrity definition, ZTE Corporation, Sanechips
11. R2-2006579 Discussion on positioning integrity KPIs and relevant use cases, Huawei, HiSilicon
12. R2-2007073 Discussion on integrity and reliability for positioning based on an IIoT use case,

Sumitomo Electric