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

**Electronic meeting, 1th November - 12th November 2021**

Title: LS to RTCM on GNSS integrity assistance data

Release: Release 17

Work Item: NR\_pos\_enh

Source: RAN2

To: RTCM SC134

Cc: RTCM, RTCM SC104

**Contact Person:**

Name: Florin Grec

E-mail Address: florin-catalin.grec@esa.int

**Send any reply LS to: 3GPP Liaisons Coordinator,** [**mailto:3GPPLiaison@etsi.org**](mailto:3GPPLiaison@etsi.org)

Attachments: TBC (pending agreement)

**1. Overall Description:**

3GPP RAN2 thanks RTCM for its liaison note sent on 3rd of September in reply to R2-2106596. RTCM asked RAN2 to clarify several points related to the scope of work on integrity of position estimation:

*Comment #1: Are the presented use cases (Automotive, Rail, Industrial IoT) the only ones addressed by the Work Item?*

*A: Yes, we confirm that automotive, rail, and industrial IoT are the only use cases described in the technical report of the Release 17 study item on GNSS Position integrity and reliability. However, the work item representation is not limited to a set of use cases, and can be applied in a wider set of use cases if deemed relevant.*

*Comment #2: It could be useful to know if the scope of the 3GPP Work-Item is intended to cover integrity of A-GNSS techniques (GNSS navigation message and SBAS message rebroadcasting) and SSR technologies (e.g. PPP, PPP-AR and PPP-RTK) only, or if other HA approaches and technique are part of the analysis.*

*A: The scope of GNSS integrity work in 3GPP Release 17 for New Radio and LTE covers a generic integrity framework and specific attributes in the assistance data with a priority on SSR assistance data. The structure is generally introduced to allow generalization in later releases. Note, the positioning protocol used in LTE and NR supports SBAS ranging but not SBAS message reboardcasting as suggested by RTCM SC134.*

*Comment #3: It is important to know how the 5G PRS and GNSS integration will be explicitly taken into account within TR 38.857 for indoor and harsh environment navigation solution.*

*A: For Release 17 of 3GPP it was decided to focus only on GNSS integrity therefore, 5G PRS and GNSS integration is not in scope of current release. 3GPP may consider a wider integrity scope with support for additional positioning methods in future releases.*

Through its LS, RTCM clarified the scope and timeline adopted by SC134 for its first release of an integrity standard. At the moment, the work on GNSS integrity in RAN2 is expected to last until Q1 2022 and this is before RTCM target release date for the integrity standard. This time misalignments represents a challenge to our common goal of aligning views, at least for the near future. Furthermore, RTCM included the following statement in the LS: *“Bylaws limits the distribution of Special Committee documents and draft standards to official members. Documents may be exchanged with participating liaison organizations. After a liaison is established, a mutual participation of members in relevant organization meetings is foreseen and documents are available and can be shared for the scope of the liaison activity.”* It was not explained what are the steps to establish a liaison activity with RTCM.

On organizational aspects, RAN2 would like to learn from RTCM (Radio Technical Commission for Maritime Services):

* **Question 1: Will its initial draft specifications include integrity assistance data for SSR support, and if not when can this be expected?**
* **Question 2: RTCM SC134 is kindly asked to clarify how a “liaison activity” with RTCM can be established, which seems the only way RAN2 could access future meetings and documents prepared by SC134.**
* **Question 3: Assuming this liaison conditions is established, when exactly is it possible for RTCM to share their draft specifications?**

RAN2 has discussed in the last months GNSS error sources that need to be accounted in integrity of position estimated based on GNSS. Given that error sources are not Gaussian, overbounding techniques are essentials. RAN2 has discussed non-zero mean overbouding (mean, and standard deviation) and zero-mean overbouding (standard deviation only) and would benefit from feedback from RTCM SC134.

On technical aspects, RAN2 would like to learn from RTCM:

* **Question 4: RAN2 would like to ask RTCM SC134 which information/assistance data is needed in order to determine the integrity of a location estimated based on GNSS?**
* **Question 5: RAN2 would like to ask RTCM SC134 to express its preference between non-zero mean bounding and zero-mean bounding of GNSS errors.**
* **Question X: (pending other technical details brought during online)**

**Actions:**

**To RTCM SC134.**

**ACTION:** RAN2 respectfully asks RTCM SC134 to provide feedback on the above questions.

**3. Date of Next RAN2 Meetings:**

RAN2#116-bis-e 17th – 25th January 2022 Electronic meeting

RAN2#117-e 21st February – 3rd March 2022 Electronic meeting