**3GPP TSG RAN WG1 #107-e R1-2112882**

**e-Meeting, November 11th – 19th, 2021**

**Title: [DRAFT]** Draft LS on the condition of PRS measurement outside the MG

**Response to:**

**Release:** Rel-17

**Work Item:** NR\_pos\_enh

**Source:** Moderator (Huawei) [to be RAN1]

**To:** RAN4

**Cc:**

**Contact Person:**

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

**Attachments:**

**1. Overall Description:**

RAN1 discussed the condition of PRS measurement without MG and reached the following agreement in RAN1#106bis-e.

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| Agreement:For PRS measurement outside MG, support the following Alt. 2 in the working assumption made in RAN1#106-e with the following update of the PRS cell condition.* Alt. 2: Applicable to all PRS (serving and/or non-serving cell) under conditions to PRS of non-serving cell.
	+ The conditions at least include that the Rx timing difference between PRS from the non-serving cell and that from the serving cell is within a threshold
		- The UE is not expected to determine whether the above condition is satisfied by performing measurements and instead can be determined using assistance data
			* FFS: Rx timing difference between PRS from the non-serving cell and that from the serving cell is determined by the expected RSTD and expected RSTD uncertainty.
	+ Further discuss the necessity on the following additional conditions
		- When the PRS is higher priority than other channels/signals, for capability 1A and 1B, the PRS from the non-serving cell have to be inside the PRS prioritization window.
		- When the PRS is higher priority than other channels/signals, for capability 2, the PRS from the non-serving cell have to be in the same symbols as the PRS of the serving cell since the serving cell does not know the symbol position of neighbour cell PRS.
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On the above-mentioned condition that the Rx timing difference between PRS from the non-serving cell and that from the serving cell is within a threshold, RAN1 further reached the following agreement in RAN1#107-e.

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| **Agreement**For the purpose of determining conditions for measuring the PRS outside of a MG, the expected Rx timing difference between the PRS from the non-serving cell and that from the serving cell is determined by expected RSTD and expected RSTD uncertainty in the assistance data.Send an LS to request RAN4 study and determine the threshold, which is used to be compared against with the Rx timing difference to determine whether the PRS from the non-serving cell satisfy the condition of PRS measurement outside MG.* + Examples for the threshold: CP length, 50% of the OFDM symbol, 1ms
	+ Other options can also be considered by RAN4
	+ Note: the requirement on whether UE needs to calculate the expected Rx time difference and/or compare against the threshold is also a part of the study request
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**2. Actions:**

**To RAN4**

**ACTION:** RAN1 respectfully requests RAN4 to take above agreements into account in their future work, and to study and determine the threshold as well as the requirement on whether UE needs to calculate the expected Rx time difference and/or compare it against the threshold.

**3. Date of Next TSG-RAN WG1 Meetings:**

TSG-RAN WG1 Meeting #107bis-e 17 – 25 January 2022 E-Meeting

TSG-RAN WG1 Meeting #108-e 21 February – 03 March 2022 E-Meeting