**3GPP TSG RAN WG1 #106-e R1-21xxxxx**

**e-Meeting, August 16th – 27th, 2021**

**Title: [DRAFT]** LS on PRS measurement outside the measurement gap

**Response to:**

**Release:** Rel-17

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

**Source:** Huawei [to be RAN1]

**To:** RAN2, RAN3, 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#106-e reached the following working assumption regarding PRS measurement outside the measurement gap for the purpose of latency reduction for DL and DL+UL positioning methods.

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| Working assumption:Subject to UE capability, support PRS measurement outside the MG, within a PRS processing window, and UE measurement inside the active DL BWP with PRS having the same numerology as the active DL BWP.* Inside the PRS processing window, subject to the UE determining that DL PRS to be higher priority, support the following UE capabilities:
	+ Capability 1: PRS prioritization over all other DL signals/channels in all symbols inside the window.
		- Cap. 1A: The DL signals/channels from all DL CCs (per UE) are affected.
		- Cap. 1B: Only the DL signals/channels from a certain band/CC are affected.
			* FFS: band or CC
	+ Capability 2: PRS prioritization over other DL signals/channels only in the PRS symbols inside the window
	+ A UE shall be able to declare a PRS processing capability outside MG.
		- FFS: Details of capability signalling (e.g., per UE or per band, etc.)
* For the purpose of this feature, PRS-related conditions are expected to be specified, with the following to be down-selected:
	+ Alt. 1: Applicable to serving cell PRS only
	+ Alt. 2: Applicable to all PRS under conditions to PRS of non-serving cell.
* Note: When the UE determines higher priority for other DL signals/channels over the PRS measurement/processing, the UE is not expected to measure/process DL PRS which is applicable to all of the above capability options.
* Further study
	+ Further details of which other DL signals/channels to be prioritized
	+ How the UE determines DL PRS’s priority based on one or more of the following:
		- Opt. 1: Based on indication/configuration from serving gNB
		- Opt. 2: Other options (e.g., implicit, signalling from LMF, etc)
	+ Whether UE can do the measurement for both inside MG (if MG is configured) and outside MG in a measurement period
	+ How to do the PRS measurement when the conditions cannot be satisfied, e.g. when BWP switching happens
	+ Prioritization conditions of processing PRS over other DL channels/signals or vice versa.
* Send an LS to RAN2, RAN3 and RAN4 informing them of this working assumption and requesting feedback in case they have concerns.
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**2. Actions:**

**To RAN2, RAN3, RAN4**

**ACTION:** RAN1 respectfully requests RAN2, RAN3, and RAN4 to take above working assumption into account in their future work and to feedback in case they have concerns.

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

TSG-RAN WG1 Meeting #106bis-e 11 – 19 October 2021 E-Meeting

TSG-RAN WG1 Meeting #107-e 11 – 19 November 2021 E-Meeting