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Title: Answer LS on issues related to UE timing

Source: TSG RAN WG4

To: TSG RAN WG1

CC: TSG RAN WG3, TSG RAN WG2

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RAN WG4 thanks RAN WG1 for pointing out some issues related to UE timing in their LS R1-00-1163. Based on the discussions on these issues during their 13th meeting, RAN WG4 came to the following conclusions:

1. First significant path

RAN WG4 confirms that RAN WG1's clarification of the term "first significant path" and the replacement of that term with the term "first detected path (in time)" is in line with RAN WG4's understanding. RAN WG4 will include this replacement in the applicable RAN WG4 specifications.

2. Rx-Tx time difference

RAN WG4 confirms that the introduction of "Type 1" and "Type 2" classes for the measurement "Rx-Tx time difference" is acceptable and feasible. It is RAN WG4's understanding that the "Type 1" measurement of "Rx-Tx time difference" is used for initial DL timing selection and that it is mandatory. Furthermore it is RAN WG4's understanding the "Type 2" measurement of "Rx-Tx time difference" is used for positioning and that it is optional.

3. "Valid" range

RAN WG4 confirms that it shares RAN WG1's understanding of the possibility of not meeting the one slot power control loop delay if the DL cell timing is out of the range 876 … 1172 chips. Furthermore, RAN WG4 confirms that the current reporting range for the measurement "Rx-Tx time difference" is too small. The reporting range will be extended to 768…1280 chips in RAN WG4's documents. RAN WG4 would like to ask the other RAN working groups to update their specifications accordingly.

4. PC combining

RAN WG4 confirms that it shares RAN WG1's understanding of a potential increase of UL and/or DL power control loop delay in the UE if the network will momentarily not be able ensure that every cell in the active set is received within the 876…1172 chip Rx-Tx range. RAN WG4 does not expect that this possibility requires any changes of the procedures to derive UL power control corrections or DL power control commands in the UE.

5. Timing adjustment

RAN WG4 does not expect any issues resulting from a scenario in which the UE is constantly adjusting its Tx timing. RAN WG4 would like to ask RAN WG1 to be informed if RAN WG1 should decide to change the required UE behaviour with respect to the Tx timing.