3GPP TSG RAN#99
Rotterdam, Netherlands,
March 20th – 23rd 2023

RP-230564

Agenda Item 9.3.2.6

Xiaomi

Revised WID: NR Support for UAV (Uncrewed Aerial Vehicles) - refined support for PC5

RAN#98e

- RAN Approved a revised WID [1] for NR support of UAV for the open objective bullet 3. The revision included potential for further clarification on support of SA2 solution supporting U2X BRID functionality using PC5.

  3. Study and specify, if needed, enhancements to NR PC5 and LTE PC5 to support UAV identification broadcast [RAN2]. Check at RAN#99 for further elaboration of this objective, based on RAN2 discussions and SA2 development. Note: This objective is not intended to introduce new band(s) with support for the PC5 interface. UAV use of LTE PC5 or NR PC5 is not addressing any operator licensed band.

- SA2 solution supporting BRID over PC5 was confirmed as solution #5 in [2], and identifies as leveraging a U2X solution as a common solution for delivery of both BRID and DAA functionality.

RAN2#121 Agreements

[3] Agreements:

- PC5-U is used to support BRID for UAV
- Support both in-coverage and out-of-coverage scenarios
- Mode 2 will be supported. FFS whether further mode 1 will be supported.
- FFS whether separate pools are needed
- FFS whether current configurations can support UAV requirements

Observations

- RAN2 Confirms BRID is supported by PC5-U messaging
- Current RAN work does not address the need to support DAA as included in SA2 Study conclusion for Key Issue #3 [2].
- DAA message is similar to BRID and from a RAN PC5 point of view can be handled in the same way as BRID. E.g. as a PC5-U message i.e. no direct impact in RAN2
- Hence DAA can be initiated in the same way as BRID, any impact to the LTE PC5 and NR PC5 interfaces will be minimal.
- RAN2 can focus on handling of these messages within the existing LTE/NR PC5 frameworks.

- **Proposal:** For REL18 WID both BRID and DAA can be handled as PC5-U signalling from a RAN point of view.

Proposed WID (RP-223545 [3]) update

3. Study and specify, if needed, enhancements to NR PC5 and LTE PC5 to support UAV identification broadcast (BRID) and Detect And Avoid (DAA) message transmission.[RAN2]. ~~Check at RAN#99 for further elaboration of this objective, based on RAN2 discussions and SA2 development.~~

Any changes RAN specifications should avoid impact to the PC5 interface and focus on existing control plane configuration aspects to support BRID and DAA solution as captured in the SA2 Study conclusions [TR23.700-058].

Note: This objective is not intended to introduce new band(s) with support for the PC5 interface. UAV use of LTE PC5 or NR PC5 is not addressing any operator licensed band.

References

[1] RP-223545 Revised WID: NR Support for UAV (Uncrewed Aerial Vehicles) - Current WID for REL18 NR_UAV

[2] TR 23.700 – 058 - SA2 Conclusion to TR23.007-058

[3] RP-230258 Status report for WI Core part: NR Support for UAV (Uncrewed Aerial Vehicles) - as presented to RAN#99