



10900-B Stonelake Boulevard, Suite 126 • Austin, Texas 78759 U.S.A.
Phone: +1-512-498-9434 (WIFI) • Fax: +1-512-498-9435
www.wi-fi.org

Date: 21 November 2017

To: Liaison Coordinator, 3GPP

From: Wi-Fi Alliance

RE: Follow-up on 3GPP Response LS R4-164972

Attached please find a liaison statement from Wi-Fi Alliance regarding 3GPP liaison statement R4-164972.

Wi-Fi Alliance requests that this communication be distributed to the leadership of the following 3GPP groups:

3GPP TSG RAN

3GPP TSG RAN4

3GPP TSG RAN1

Best Regards,
Wi-Fi Alliance

Title: Follow-up on 3GPP Response LS (R4-164972)

Response to: Reply LS (RP-171558), LS (R4-164972) on LS (R4-164704): "Wi-Fi Alliance comments on RAN4 Coexistence tests for LTE-LAA"

Source: Wi-Fi Alliance

To: Balazs Bertenyi, 3GPP TSG RAN Chair, balazs.bertenyi@nokia.com
Joern Krause, Secretary of RAN, Joern.Krause@ETSI.ORG

Cc: Xutao Zhou, 3GPP TSG RAN4 Chair, xutao.zhou@samsung.com
Kyoungseok Oh, 3GPP RAN4 Secretary, Kyoungseok.Oh@etsi.org
Wanshi Chen, 3GPPRAN1 chair, wnashic@qti.qualcomm.com
Patrick Merias, 3GPP RAN1 Secretary, patrick.merias@etsi.org
Adrian Stephens, IEEE 802.11 WG Chair, adrian.p.stephens@ieee.org
Stephen McCann, IEEE 802.11 WG Secretary, stephen.mccann@ieee.org

3GPP Contact Persons:

Dorin Viorel, d.viorel@cablelabs.com
Jennifer Andreoli-Fang, j.fang@cablelabs.com
Marco Papaleo, mpapaleo@qti.qualcomm.com
Imadur Rahman, imadur.rahman@ericsson.com

Attachments: None

Dear Balazs,

Wi-Fi Alliance kindly requested the RAN Plenary (RP-171558) [13] and RAN4 to provide comments on the RAN4 coexistence tests following up on a previous LS issued by the Wi-Fi Alliance (R4-164972) seeking clarifications on important aspects of the multi-node Wi-Fi and LAA LTE coexistence testing. While we respectfully look for the RAN Plenary and RAN4 to provide comments on these issues Wi-Fi Alliance considers of high priority, unfortunately WFA has received no response to our previous LS letters [11], [12], [13], on the multi-node coexistence topic. Wi-Fi Alliance would like to continue the collaboration with 3GPP RAN groups in order to clarify issues of potential interest for both organizations. Therefore, we would like to bring this topic back to your attention.

Wi-Fi Alliance received from 3GPP TSG-RAN WG 4 their initial response (R4-164972) [2] to our liaison statement (R4-164704) [1]. The "*Way forward on multi-node tests for LAA*" provided in the response, indicated that:

1. LBT core requirements are captured in TS 36.104 and the LBT tests will be defined in 3GPP TS 36.141
2. Multi-node tests are cross technology coexistence tests and that these tests will be captured in a Technical Report (TR)

Wi-Fi Alliance notes that RAN4 has since completed the LBT performance requirements in 3GPP TS 36.104 [4] and 3GPP TS 36.141 [5] for the E-UTRA BS and in 3GPP TS 36.101 [6] for the E-UTRA UE. Wi-Fi Alliance would like to thank 3GPP for defining the LBT tests as normative requirements in these 3GPP technical specifications.

Wi-Fi Alliance also notes that RAN4 has completed the technical report on multi-node tests for LAA in 3GPP TR 36.789 [3]. Wi-Fi Alliance would also like to thank 3GPP for making this 3GPP technical report publicly available.

It is Wi-Fi Alliance's understanding the multi-node tests provided in 3GPP TR 36.789:

1. provide recommendations, but do not specify normative requirements
2. recommend all identified signal level configurations, but do not mandate specific configurations to be tested or how to interpret their significance
3. describe an evaluation methodology, but do not specify pass/fail criteria

Wi-Fi Alliance further notes that, in its recent response to IEEE (RP-171482), 3GPP RAN confirms that the "*execution of the test plan will be determined by the manufacturers of LAA equipment and/or their customers*" [7].

Wi-Fi Alliance is concerned that, without mandatory multi-node coexistence tests, specified normative requirements, required test configurations, or precise pass/fail criteria, it may not be possible to ensure fair coexistence. Wi-Fi Alliance requests clarification on how 3GPP believes that these multi-node test will be used to enable 3GPP to ensure fair coexistence of LAA and Wi-Fi as previously communicated in various documents [8, 9, 10, 11, 12].

For example, Wi-Fi Alliance understands that in [12] RAN1 stated that the multi-nodes tests would be used to ensure fair coexistence between LAA and IEEE 802.11 devices:

RAN1 would also like to highlight that RAN4 has decided on the development of a set of coexistence test cases including multi-node tests to verify the coexistence between LAA and IEEE 802.11 devices in various scenarios including testing above and below an ED threshold of -72dBm for LAA devices. While the coexistence mechanisms defined in LAA are based on energy detection, the implementation of other mechanisms by a device is not precluded. LAA equipment would be tested to ensure fair coexistence between LAA and 802.11 systems.

As it appears that RAN4 has concluded its current study item on multi-node system tests, Wi-Fi Alliance seeks further clarifications from 3GPP RAN Plenary and RAN4 on:

1. Whether it could provide a summary status related to the development of coexistence testing for new features of LAA developed in Release 14 and not covered by the current 3GPP TR 36.789 technical recommendation.
2. Whether it could provide a summary status related to the development of pass/fail criteria concerning the multi-node coexistence testing.

Sincerely,

Wi-Fi Alliance

References:

- [1] "Wi-Fi Alliance comments on RAN4 Coexistence tests for LTE-LAA ", [R4-164704](#)
- [2] "Response to Wi-Fi Alliance comments on "Way forward on coexistence tests for LAA"", [R4-164972](#)
- [3] "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Multi-node tests for Licensed-Assisted Access (LAA)", [3GPP TR 36.789 V13.0.0](#)
- [4] "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception (Release 14), [3GPP TS 36.104 V14.3.0](#), 2017-03
- [5] "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) conformance testing (Release 14), [3GPP TS 36.141 V14.3.0](#), 2017-03
- [6] "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception (Release 14), [3GPP TS 36.101 V14.4.0](#), 2017-06
- [7] "Response to IEEE LS to 3GPP RAN/RAN1/RAN4 related to PD and ED issues", [3GPP RP-171482](#), RAN#76, 5-8 June 2017
- [8] "Study on Licensed Assisted Access Using LTE", [3GPP RP-141664](#), RAN #65, 9-12 Sept 2014
- [9] "Study on Licensed-Assisted Access to Unlicensed Spectrum" [3GPP TR 36.889 v1.0.1](#), 2015-06
- [10] "Study Item on Multi-Node Tests for LAA", [3GPP RP-161197](#), RAN #72, 13-16 June 2016
- [11] "Response Liaison Statement from 3GPP R1 to IEEE 802.11 Regarding LAA", [3GPP R1-166040](#), 3GPP RAN1 #85, 23-27 May 2016
- [12] "Response LS to IEEE 802.11 Regarding LAA", [3GPP R1-1613770](#), 3GPP RAN1 #87, 14-18 November 2016
- [13] "Response to 3GPP Response LS (R4-164972)", [3GPP RP-171558](#) 3GPP RAN #77, 11-14 September 2017