IEEE P802.11  
Wireless LANs

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| Draft LS from 802.11 to 3GPP RAN and SA on IMT-2020 | | | | |
| Date: 2016-09-01 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Joseph Levy | InterDigital Communications, Inc. | 2 Huntington Quadrangle  4th floor, South Wing Melville, NY 11747 | +1.631.622.4139 | jslevy@ieee.org |
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Abstract

This document contains draft text for a possible liaison by IEEE 802.11 to 3GPP RAN and SA in relation to the inclusion of 802.11 radio interfaces in the 3GPP proposal to IMT-2020.

Rev 1 – Target this LS to be at the 802.11 level. Remove all references to the 802.11 air interface. Clarify that 802.11 would be using unlicensed spectrum. State that 802.11 would like to work with 3GPP to improve how WLAN and LTE/NR can work together to provide an improved wireless networking experience for IMT-2020. Request 3GPP RAN’s thoughts on how 802.11 and 3GPP RAN can work together.

Rev 2 – Add additional relevant use cases. Add references to WLAN integration with 3GPP core network (in addition to RAN aggregation). Request response from SA (in addition to RAN). Typo fixes. Provided by Thomas Derharm (Broadcom),   
*Note by Joseph Levy: The comments and edits provided in Rev 2 are greatly appreciated. The Rev 2 version was provided in parallel with the generation of Rev 3, in the author’s opinion most of the suggested changes are implemented in version Rev 3 and hence the exact changes made in Rev 2 proposed were not implementing in Rev3.*

Rev 3 – As updated based on discussions during the September 1 AANI SC teleconference and on the email reflector.

Rev 4 – Propagate some edits from Rev 2 into Rev 3; fix typos; propose wording for 5G use case applicability. Provided by Thomas Derharm (Broadcom),

Rev 5 – All changes made in Rev 3 have been accepted and some additional editorial changes to clean up the document have been made, as well as some additional alignment with the suggestions provided in Rev 2 and Rev 4. All changes from Rev 3 are shown as red lines.

To: 3GPP RAN, 3GPP SA

[3GPPliaison@etsi.org](mailto:3GPPliaison@etsi.org)

[susanna.kooistra@3gpp.org](mailto:susanna.kooistra@3gpp.org) – Liaison Coordinator

[Joern.Krause@etsi.org](mailto:Joern.Krause@etsi.org) – RAN Secretary

[Maurice.Pope@etsi.org](mailto:Maurice.Pope@etsi.org) – SA Secretary

CC: 802 EC, 802.1

Subject: IEEE 802.11 Working Group Liaison on the role of WLAN in IMT-2020

Date: 2016-09-16

**Discussion:**

The IEEE 802.11 Working Group (WG) invites 3GPP RAN and SA to consider that 802.11 WLAN in unlicensed spectrum may provide a practical low cost means of meeting the performance requirements for some IMT-2020 use cases. IMT-2020 use cases that may benefit from the use of WLAN are: the high data rate hotspot use case and potentially other high data rate use cases.

<*suggested in Rev 4 as a replacement for the above paragraph – to be discussed:  
The IEEE 802.11 Working Group (WG) invites 3GPP RAN and SA to consider that 802.11 WLAN in unlicensed spectrum may provide a practical low cost means of meeting the performance requirements for some IMT-2020 use cases. IMT-2020 use cases that may benefit from the use of WLAN are Enhanced Mobile Broadband (very high traffic capacity hotspots) and some aspects of Ultra-Reliable and Low Latency Communication (e.g. low latency uplink transmission) and Massive Machine Type Communications (e.g. high device density with low-volume traffic)*.>

802.11 WLAN currently provides 3GPP users with high data rate offload capability in many existing 3GPP networks. Recently completed 3GPP RAN WIs on LWA and LWIP and the currently active eLWA WI will provide improvements in the way WLAN (802.11) resources can be aggregated with the 3GPP radio interface resources in the 3GPP network. IEEE 802.11 believes that it is possible to further improve on the way WLAN and 3GPP LTE and NR can be aggregated to meet the performance goals of IMT-2020 and we believe that improving the aggregation of WLAN will be mutually beneficial to both 3GPP and IEEE 802.11.

In addition to considering improvements in WLAN aggregation anchored in the RAT, IEEE 802.11 would also like to explore the possibility of improvements in WLAN integration in the existing and new Core Networks. The recently completed 3GPP SA WI on NBIFOM will provide improvements in the way WLAN integrates with the EPC core network. IEEE 802.11 believes that it is possible to further improve on the way WLAN is integrated into the 3GPP EPC and the Next Generation core networks. We also believe that improving the way WLAN integrates with the core network will be mutually beneficial to both 3GPP and IEEE 802.11.

Some areas of possible improvement include: Data Radio Bearer over WLAN, improved metrics for discovery and selection of WLAN, improvements in mobility, and improvements in security.

Hence, the IEEE 802.11 WG would like to investigate ways that the IEEE 802.11 WG and 3GPP RAN and SA can work together towards these goals. The IEEE 802.11 WG is hopeful that 3GPP RAN and SA will also see the benefit in working with the IEEE 802.11 WG towards improving the aggregation and integration of WLAN in the 3GPP network, thus enabling WLAN in unlicensed spectrum to provide a practical low cost means of supporting some of the IMT-2020 use cases. IEEE 802.11 WG invites 3GPP RAN and SA to respond to this liaison with their opinions on the desirability of improving WLAN aggregation and integration and suggestions on how 3GPP RAN, 3GPP SA, and the 802.11 WG can work together to make these improvements.

**Actions:**

To 3GPP RAN:

The 802.11 WG respectfully asks 3GPP RAN to:

* Provide the 3GPP RAN opinion on the desirability of improving WLAN aggregation to assist 3GPP in providing complimentary ways of meeting some IMT-2020 use case requirements.
* Provide suggestion on how 3GPP RAN and the 802.11 WG can work together to improve WLAN aggregation and improving overall network performance.

To 3GPP SA:

The 802.11 WG respectfully asks 3GPP SA to:

* Provide the 3GPP SA opinion on the desirability of improving WLAN integration in the existing and Next Generation core networks to assist 3GPP in providing complimentary ways of meeting some IMT-2020 use case requirements and improving overall network performance.
* Provide suggestion on how 3GPP SA and the 802.11 WG can work together to improve WLAN integration.

**Date of Next IEEE 802.11 WG Meetings:**

802 Plenary - November 6-11 2016 in San Antonio, TX, USA

802 Interim - January 15-20 2017 in Atlanta, GA, USA

Sincerely,

Adrian Stephens  
IEEE 802.11 Working Group Chair

**References:**

1. **Recommendation ITU-R M.2083-0 (09/2015), “IMT Vision – Framework and overall objectives of the future development of IMT for 2020 and beyond”, M Series, Mobile, radiodetermination, amateur and related satellite services**