IEEE P802.11
Wireless LANs

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| Proposed comment resolution regarding CID 96, 104, 91, 19, 98, 8, 75, 10, 105, 11, 12 in comment collection sheet(11-20-1262r2) |
| Date: 2020-09-30 |
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Abstract

This contribution is a proposed comment resolution on technical report on WLAN interworking to 3GPP 5G network. It describes the revised text and notes on CID 96, 104, 91, 19, 98, 8, 5, 10, 105, 11, 12 to resolve comments.

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| **CID** | 96 |
| **Name** | Maximilian Riegel |
| **Subclause** | 3.1 |
| **Comment** | Nor "Tightly coupled interworking" nor "loosely coupled interworking" are specified models. AANI Report should describe what is defined and required by 3GPP. It shouldn't invent new 3GPP concepts that are nowhere specified. |
| **Proposed Change** | Remove notation of tightly coupled vs. loosely coupled from the report. Introduce therefore the trusted and untrusted concepts as defined by 3GPP in TS 23.501. Change 'tightly coupled' to 'trusted' and 'loosely coupled' to 'untrusted' throughout the whole section 3.1 |
| **Duplicate of CID** | 8, 92 |
| **Comment** | I don't think it is relevant to this report to discuss trusted or untrusted. This is a 3GPP concept and does not exist within IEEE 802.11The specifications talk about 'tightly' and 'loosely' coupled models, but effectively shows the trusted and untrusted 3GPP cases. Furthermore, 'tightly' in the scope of the document means 'WLAN access and 3GPP access under a common control, which not necessarily maps to the trusted and untrusted models defined by the 3GPP. Another aspect not well matching is the consideration of WLAN-only terminals connected to 5G core network. |
| **Proposed Change** | 20-08-31 WLAN access networks to interwork with 3GPP 5G core network services are discussed for both the trusted as well as untrusted case as defined in TS 23.501 comprising integrated or stand-alone implementations of WLAN and 3GPP 5G access networks and terminals. |
| **Resolution** | Revise |
| **Notes** | Trusted or untrusted WLAN interworking model in loosely coupled interworking type is considered. |
| Proposed resolution |
| **Section**  |  2.2 line 22 |
| **Text** | WLAN access networks to interwork with 3GPP 5G core network services are discussed for both the trusted as well as untrusted case as defined in TS 23.501 comprising integrated or stand-alone implementations of WLAN and 3GPP 5G access networks and terminals. |

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| **CID** | 104 |
| **Name** | Maximilian Riegel |
| **Subclause** | 4.2.2 |
| **Comment** | 3GPP TS 23.501 Y2 interface is more than just IEEE 802.3, as it comprises the whole transport of NWu including IP. There are now message procedures defined for Y2.Remove bullet item Y2 interface together with Fig 6 |
| **Proposed Change** | Remove bullet item Y2 interface together with Fig 6 |
| **Duplicate of CID** | 1 |
| **Comment** | Change "Y2 interface is PHY/MAC data communication protocol between ANC of WLAN access network and N3IWF of 3GPP 5G core network. Y2 follows IEEE 802.3 standard." to "Y2 interface is an IEEE 802.11 Distribution System that connects an ANC incorporated in an Access Point Portal or Mesh Gate to a N3IWF, and provides the following services in addition to those provided by the IEEE 802.11 DS:" |
| **Proposed Change** | 20-08-31 R3 interface is an IEEE 802.11 Distribution System that connects an ANC incorporated in an Access Point Portal or Mesh Gate to a N3IWF, and provides the following services in addition to those provided by the IEEE 802.11 DS |
| **Resolution** | Revise |
| **Notes** | Y2 interface is mapped into R3 according to the WLAN reference model. |
| Proposed resolution |
| **Section**  | 4.2.2 |
| **Text** | R3 interface is an IEEE 802.11 Distribution System that connects an ANC incorporated in an Access Point Portal or Mesh Gate to a N3IWF, and provides the following services in addition to those provided by the IEEE 802.11 DS |

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| **CID** | 91 |
| **Name** | Maximilian Riegel |
| **Subclause** | 1.1 |
| **Comment** | Y4 is defined by 3GPP for another kind of interface than presented in the report (highly misleading). |
| **Proposed Change** | Remove definition of Y4. |
| **Duplicate of CID** | 75 |
| **Comment** | There is no Y3, Y4 interface between WLAN Access Network and N3IWF in 3GPP specification and hard to enhance it, because it is assumed the WLAN Access Network in untrusted non-3GPP is purely relay function. |
| **Proposed Change** | 20-08-31 R9 Reference point for control and management interface between the untrusted non-3GPP access network (e.g. WLAN) and the N3IWF for the transport of NWu traffic which refers 3GPP TS 23.502. This is in the domain of WLAN access network. |
| **Resolution** | Revise |
| **Notes** | Y4 interface is mapped into R9 according to the WLAN reference model. |
| Proposed resolution |
| **Section**  |  1.1 |
| **Text** | R9 Reference point for control and management interface between access network and access router [18]. |

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| **CID** | 19 |
| **Name** | Graham Smith |
| **Subclause** | 2.2 |
| **Comment** | Add an article before "server" i.e. "a server" |
| **Proposed Change** | add "a" before "server" |
| **Duplicate of CID** |  |
| **Comment** |  |
| **Proposed Change** | 20-08-31 3GPP 5G core network and a data network as shown in Figure 1. |
| **Resolution** | Revise |
| **Notes** | server is changed into data network |
| Proposed resolution |
| **Section**  |  2.2  |
| **Text** | The interworking reference model consists of terminal part (a UE and a STA), access networks (3GPP and WLAN), 3GPP 5G core network and a data network as shown in Figure 1. |

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| **CID** | 98 |
| **Name** | Maximilian Riegel |
| **Subclause** | 3.1 |
| **Comment** | Interworking concepts of 4G systems are not in scope of a report on 5GS - WLAN interworking |
| **Proposed Change** | Remove sentence starting “3GPP LTE-based” |
| **Duplicate of CID** | 8 |
| **Comment** | I don't think it is relevant to this report to discuss trusted or untrusted. This is a 3GPP concept and does not exist within IEEE 802.11 |
| **Proposed Change** | 20-08-31 3GPP cellular system has specified |
| **Resolution** | Revise |
| **Notes** | 4G term deleted |
| Proposed resolution |
| **Section**  |  3.1 |
| **Text** | 3GPP cellular system has specified both RAN level (layer 2) interworking and CN level (layer 3 and above) interworking [2-4]. |

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| **CID** | 8 |
| **Name** | Stephen McCann |
| **Subclause** | 3.1 |
| **Comment** | I don't think it is relevant to this report to discuss trusted or untrusted. This is a 3GPP concept and does not exist within IEEE 802.11 |
| **Proposed Change** | Remove the terms "trusted" and "untrusted" from the text. |
| **Duplicate of CID** | 98 |
| **Comment** | Interworking concepts of 4G systems are not in scope of a report on 5GS - WLAN interworking |
| **Proposed Change** | 20-08-31 whether the WLAN is trusted or untrusted [8]. |
| **Resolution** | Revise |
| **Notes** | Trusted or untrusted WLAN interworking model in loosely coupled interworking type is considered. |
| Proposed resolution |
| **Section**  |  3.1 |
| **Text** | However, 3GPP 5G system has allowed WLAN access as a non-3GPP Radio Access Technologies (RAT) that can be directly connected to 5G Core Network (CN) via the N3IWF (Non-3GPP Interworking Function) or the TNGF (Trusted Non-3GPP Gateway Function) depending on whether the WLAN is trusted or untrusted [8]. |

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| **CID** | 75 |
| **Name** | JIAYIN ZHANG |
| **Subclause** | 3.2 |
| **Comment** | There is no Y3, Y4 interface between WLAN Access Network and N3IWF in 3GPP specification and hard to enhance it, because it is assumed the WLAN Access Network in untrusted non-3GPP is purely relay function |
| **Proposed Change** | Remove the Y3, Y4 interface from the figure and considering the new interface only for trusted non-3GPP access. |
| **Duplicate of CID** | 7 |
| **Comment** | It may help to explain RAN level and CN level a little more |
| **Proposed Change** | 20-08-31 we propose R8 and R9 interfaces which are control and management interfaces to provide QoS mapping and MAC scheduling. |
| **Resolution** | Revise |
| **Notes** | Replace Y3 to R8, Y4 to R9 |
| Proposed resolution |
| **Section**  |  3.2 |
| **Text** | We propose R8 and R9 interfaces which are control and management interfaces to provide QoS mapping and MAC scheduling. |

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| **CID** | 10 |
| **Name** | Stephen McCann |
| **Subclause** | 4.4 |
| **Comment** | ATSSS function support completely unclear; there is no reference to 3GPP 5GS specifications, nor sufficient information in clause 4.4 |
| **Proposed Change** | Remove clause 4.4 from report |
| **Duplicate of CID** |  |
| **Comment** |  |
| **Proposed Change** | 20-08-31 refer to submissionTable of contents are re-organized in clause 5 and 6. |
| **Resolution** | Revise |
| **Notes** | Clause 5 5GS QoS management and Clause 6 gap analysis are updated |
| Proposed resolution |
| **Section**  | 5.2 ATSSS function support 6.1 Gap Analysis |
| **Text** |  |

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| **CID** | 105 |
| **Name** | Maximilian Riegel |
| **Subclause** | 4.4 |
| **Comment** | ATSSS function support completely unclear; there is no reference to 3GPP 5GS specifications, nor sufficient information in clause 4.4 |
| **Proposed Change** | Remove clause 4.4 from report |
| **Duplicate of CID** |  |
| **Comment** |  |
| **Proposed Change** | 20-08-31 refer to submission:Table of contents are re-organized in clause 5 and 6. |
| **Resolution** | Revise |
| **Notes** | Clause 5 5GS QoS management and Clause 6 gap analysis are updated |
| Proposed resolution |
| **Section**  | 5.2 ATSSS function support 6.1 Gap Analysis |
| **Text** |  |

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| **CID** | 11 |
| **Name** | Stephen McCann |
| **Subclause** | 5.1 |
| **Comment** | The Gap analysis should be more detailed as to which interfaces need to be defined within IEEE 802.11. For example, "NWu" appears to be IP related (IETF), whereas Y1 falls within the scope of IEEE 802.11. |
| **Proposed Change** | Add an extra column to Table 2 to specify which standard (or SDO) could define these interfaces. |
| **Duplicate of CID** | 108 |
| **Comment** | Gap analysis should provide a comparison between the requirements of 5GS - WLAN interworking and current capabilities of IEEE 802.11. Text on page 16 line 6 - 41 does not provide any comparison of 3GPP requirements with IEEE 802.11 capabilitiesRemove text on page 16 line 6 - 41. |
| **Proposed Change** | 20-08-31 refer to submission |
| **Resolution** | Revise |
| **Notes** | Clause 6 gap analysis are updated |
| Proposed resolution |
| **Section**  | 6.1 Gap Analysis |
| **Text** | In the view of higher layer control and protocol to interwork with 3GPP 5G core network, IKEv2, EAP-5G, IPsec and GRE protocol are referred to IETF specification and modified for interworking. And these protocols can be implemented in the STA TEC and WLAN ANC. |

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| **CID** | 12 |
| **Name** | Stephen McCann |
| **Subclause** | 5.1 |
| **Comment** | Several of these items are not within the scope of "WLAN Specifications". |
| **Proposed Change** | In Table 3, change the title of the column from "Related WLAN Specification" to "Protocol". Add a new column to the table to specify which standard (or SDO) could define these protocols. |
| **Duplicate of CID** | 108 |
| **Comment** | Gap analysis should provide a comparison between the requirements of 5GS - WLAN interworking and current capabilities of IEEE 802.11. Text on page 16 line 6 - 41 does not provide any comparison of 3GPP requirements with IEEE 802.11 capabilitiesRemove text on page 16 line 6 - 41. |
| **Proposed Change** | 20-08-31 refer to submission |
| **Resolution** | Revise |
| **Notes** | Clause 6 gap analysis are updated |
| Proposed resolution |
| **Section**  |  6.1 Gap Analysis |
| **Text** | NAS signaling to AMF and packet session control to SMF are referred to 3GPP specification and can be implemented in STA TEC and WLAN ANC. And WLAN QoS management is referred to IEEE 802.11e and should be adapted to support fine granularity of QoS levels. |