

IEEE 802 Executive Committee OmniRAN Study Group

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To: 3GPP SA2

Subject: Interpretations of assumptions in chapter 16 of 3GPP TS 23.402 V11.6.0 (2013-03) on the behavior of a Trusted WLAN Access Network

Dear Colleague:

On 16 November 2012, the IEEE 802 Executive Committee chartered the OmniRAN Study Group (SG) to consider the specification of an Open Mobile Network Interface for Omni-Range Area Networks based on IEEE 802 access technologies. The SG is chartered to deliver a project proposal until 19 July 2013 to the IEEE 802 Executive Committee. For further information regarding the Study Group, I refer you to document [<omniran-13-0011-01-ecsg>](mailto:omniran-13-0011-01-ecsg), which contains an introduction to the scope and approach of the study group.

The study group is currently reviewing potential use cases of an OmniRAN network specification. One of the many proposals addresses the ‘GTP and PMIPv6 based S2a over Trusted WLAN Access’ as defined in TS 23.402 V11.6.0. To investigate the proposal, we hope to learn about the expectations and requirements for the interface of the WLAN Access Network towards Trusted WLAN AAA Proxy and Trusted WLAN Access Gateway inside the Trusted WLAN Access Network. As noted in TS23.402, “The detailed functional split within a Trusted WLAN Access Network (TWAN) is not in the scope of 3GPP.” We assume that one of the applications of the reference points R2 and R3 of our OmniRAN architecture might be the interconnection of the functional blocks inside the Trusted WLAN Access Network.

Going through the specification in chapter 16 we found rich information on the expected functions of the interfaces internal to the TWAN, however we had difficulties to understand the desired behavior for three statements:

Chapter 16.1.2 High Level Functions:

- *A Trusted WLAN Access Gateway (TWAG). This function terminates S2a. It also acts as the default router for the UE on its access link, and as a DHCP server for the UE. When the TWAN provides access to EPC for an UE, it forwards packets between the UE-TWAG point-to-point link and the S2a tunnel for that UE. The association in the TWAN between UE-TWAG point-to-point link and S2a tunnel is based on the UE MAC address.*

This statement defines that the default router resides in the TWAG, however packet forwarding between UE and EPC is performed on the base of the UE MAC address, which indicates L2 forwarding behavior, not routing based on IP addresses.

Furthermore we wonder whether there is need to locate the default router for the Non-Seamless WLAN Offload case inside the TWAG. To our understanding the default router for NSWO may reside either in the WLAN Access Network or in the TWAG when point-to-point connectivity between UE and TWAG is provided for access to the EPC.

- *A Trusted WLAN AAA Proxy (TWAP). This function terminates STa. It relays the AAA information between the WLAN Access Network and the 3GPP AAA Server or Proxy in case of roaming. It establishes the binding of UE subscription data (including IMSI) with UE MAC address on the WLAN Access Network. If L2 attach...*

We wonder about the reasons to request to perform the binding between the UE subscription data and the UE MAC address in the TWAP. To our understanding this can preferably happen by the AAA client in the WLAN AP inside the WLAN Access Network.

16.2.1 Initial Attach in WLAN on GTP S2a, Step 2:

- *The TWAN may provide to the 3GPP AAA server via STa the SSID selected by the UE to access the TWAN and an indication whether it supports S2a, non-seamless offload, or both. The HSS/AAA may indicate via STa whether access to EPC via S2a or the use of NSWO or both are allowed for this subscriber. The HSS/AAA decision to allow EPC access or NSWO or both could be based on information elements such as subscriber profile, access network, and/or SSID selected.*

We wonder how the TWAN would decide when both, EPC access and NSWO, are supported by the TWAN, and the HSS/AAA server indicates that both, EPC access and NSWO, are allowed for the subscriber.

We would kindly ask for your interpretations to allow us to evaluate the ‘GTP and PMIPv6 based S2a over Trusted WLAN Access’ as defined in TS 23.402 V11.6.0 as potential use case for an OmniRAN specification. This would progress us towards the specification of a generic network interface between access networks based on IEEE 802 technologies and a variety of core networks, including EPC.

Sincerely,

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cc: Paul Nikolic, Chair, IEEE 802 LAN/MAN Standards Committee
3GPP SA, 3GPP Liaisons Coordinator