

3GPP TSG RAN Meeting #73**RP-161537****New Orleans, USA, September 19 - 22, 2016****Title: Motivation for new work item on enhanced LTE
WLAN radio level integration with IPsec tunnel (eLWIP)****Source: Nokia, Alcatel-Lucent Shanghai Bell****Document for: Discussion****Agenda Item: 10.1.3**

Rel-14 enhanced LWIP

RAN3 led - New Nokia WI proposal(s) to RAN#73

- Rel-13 LWIP was standardized to meet the requirement of allowing eNB-controlled WLAN aggregation without impact to legacy APs
- SA3 has requested that RAN3 would investigate how to standardize the interface between eNB and SecGW
 - RAN3 should find a suitable way forward to accommodate the request
- While the performance of the Rel-13 LWIP is reasonable, it could be enhanced to allow aggregation and allow flexibility for network operation
 - E.g. using LTE UL instead of WLAN UL, allowing for wider range of feedback from the WLAN APs and allowing flow control.

Rel-14 eLWIP aims to provide improved performance and address use cases not allowed by the basic functionality, similarly as eLWA WID does.

Rel-14 enhanced LWIP

Objectives of the WID

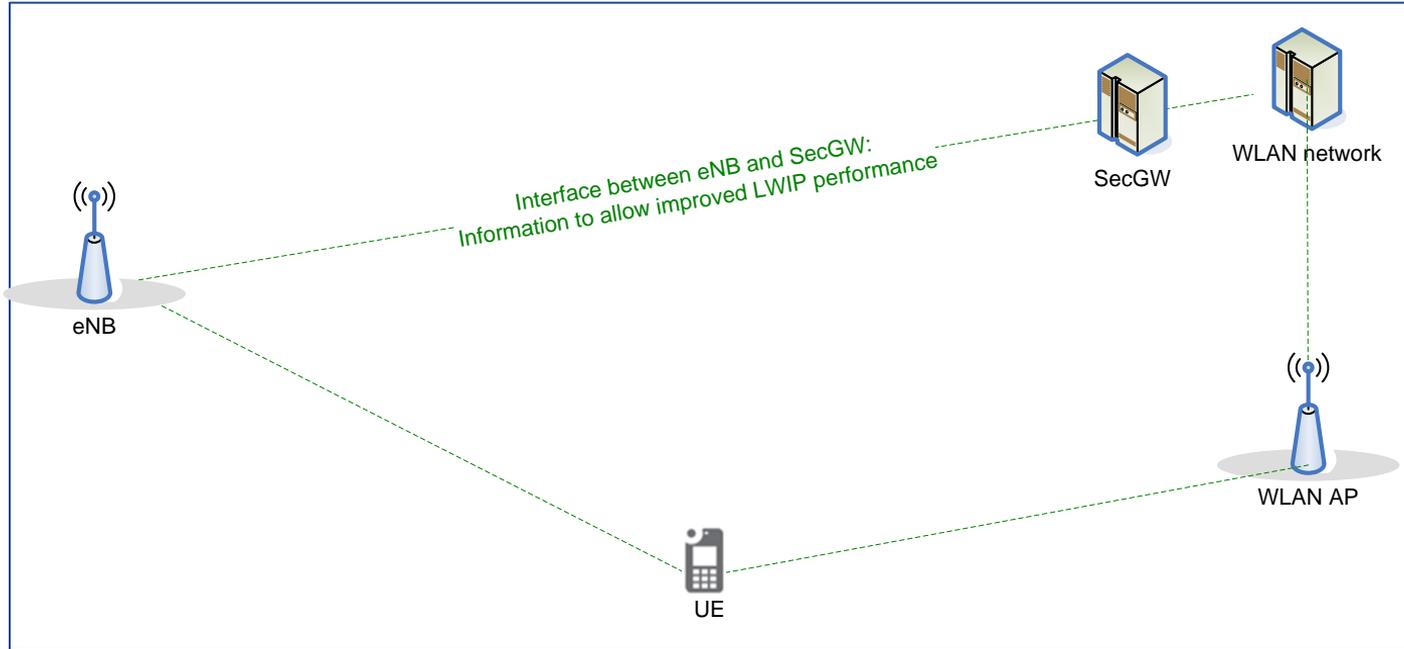
Objectives of the WID:

1. Support for using LTE access to utilize services located in WLAN network, by allowing WLAN UL transmissions to be sent via LTE UL (RAN3)
2. Investigate the information to be exchanged and if the Xw can be enhanced to support the connection between eNB and SecGW for LWIP operation as per SA3 request (RAN3); this in particular should address:
 - a) Support LWIP flow control via reuse of the LWA framework. e.g. Xw (RAN3)
 - b) Support improvements to WLAN measurement framework as defined within eLWA WID (RAN3)

Rel-14 enhanced LWIP

Overview picture of the WID objectives

Rel-14 eLWIP



Rel-14 enhanced LWIP

Local access to WLAN services via LTE UL

- Currently, for accessing enterprise apps in WLAN network, UL IP packets are sent over Wi-Fi access using Wi-Fi core assigned IP addresses.
- To allow WLAN-anchored services also for the case when WLAN UL is sent over LTE, packets belonging to the service should be routed towards the WLAN network instead of LTE core
 - This allows use of LTE UL for enterprise Apps, while not requiring any change to Wi-Fi infrastructure
- RAN3 should consider how to convey the information towards WLAN network via network interfaces

Rel-14 enhanced LWIP

Optimizing LWIP performance

- SA3 has requested that the interface between eNB and SecGW should be considered in Rel-14
 - This requires that RAN3 considers the information needed to be exchanged and how best capture this in relevant specifications (which may require new specifications to be created)
- No flow control was specified in Rel-13 due to limited time.
 - For example, Xw interface was standardized in Rel-13 for LWA and allows for flow control feedback – it might be suitable also for LWIP
 - LWIP performance could also be further optimized via better access to WLAN measurements, e.g. throughput indication

Time budget proposal

RAN #73										Q4/2016										RAN #74			
R1L	R1U	R2L	R2U	R2J	R3	R4R F Core	R4RD Core	R4R F Perf	R4RD Perf	R1L	R1U	R2L	R2U	R2J	R3	R4R F Core	R4RD Core	R4R F Perf	R4RD Perf				
86bis	86bis	95bis	95bis	95bis	93bis	80bis	80bis	80bis	80bis	87	87	96	96	96	94	81	81	81	81				
					1										1								

RAN #74					Q1/2017					RAN#75				
R1L	R1U	R2L	R2U	R2J	R3	R4R F Core	R4RD Core	R4R F Perf	R4RD Perf					
88	88	97	97	97	95	82	82	82	82					
					1									

L: LTE, U: UMTS, J: Joint, RD: RRM/demodulation