

3GPP TSG SA#63

RAN/SA JOINT MEETING



SP-140059 Way Forward on WLAN IW

RAN2#85

▪ **When to offload**

- Agreements on
 - 3GPP RAN Assistance Information, for both RAN rules and ANDSF
 - OPI (Offload Preference Indicator i.e. Operator Indication to Offload, format TBD by SA2) for ANDSF
 - WLAN related parameters (**WAN metrics** + identifiers):
 - WLAN Identifiers: SSID/BSSID/HESSIDs are broadcast in a new SIB
 - Channel Utilisation in the BSS load element indicated by the WiFi AP
 - Available DL and UL backhaul data rate indicated by WiFi AP
 - For WLAN RSSI, RCPI, RSNi there were no consensus and they were left FFS.

▪ **What to offload**

- RAN solution without ANDSF supports APN level offload granularity only
- RAN2 has proposed two approaches (RRC vs. NAS messaging)
- To realize the RRC based approach, RAN needs to know
 - Which APN can be offloaded to WLAN
 - Which APN each E-RAB/RAB belongs to

▪ **How to offload**

- FFS: RAN rules

- **Recommended WLAN baseline operation**
 - 802.11 + WFA operation used as is
- **WAN metrics for network selection and traffic steering agreed at RAN2#85**
- **No WLAN radio measurements parameters in 3GPP**
 - WLAN AP (re)selection, channel selection out of scope of 3GPP
 - No conformance testing exists
 - Diversity of WLAN deployments
- **Introduce achievable WLAN throughput**
 - Device to determine/get hold of achievable WLAN throughput (DL/UL) for network selection and traffic steering

What SA2#102 should do

■ **ANDSF related updates**

- Enhance ANDSF with network selection and traffic routing policies that take into account RAN signal strength and quality metrics.
 - However, enhancing the ANDSF does not create an “eANDSF”
- Enhance ANDSF to include the OPI for both network selection and traffic steering
 - Unambiguous definition of OPI.
 - How to provide OPI value to the UE through ANDSF
 - Discuss what a OPI threshold is and whether it makes sense to have a “default value”

■ **Identify the granularity at which the RAN-based proposal may allow traffic offload to WLAN with no changes or in the worst case minimal changes on the EPC.**

- Several scenarios must also be evaluated:
 - Does the solution support both trusted and untrusted connectivity?
 - For trusted access scenario is the solution going to support Rel-11 or Rel-12 SaMOG? If Rel-12 SaMOG is in place both single PDN as well as multiple PDN support should be considered.
 - NSW0: if connected to an AP that provides only NSW0, do you reconnect to a different device?
 - Roaming and Home PLMN access

What RAN2 (#85bis, #86) should do

- **First target:** introduction of Stage 2 level description in TS36.300
- **Define the RAN Rule and relation to**
 - Connection management and different RRC states. Effect of state transitions.
 - Effect of 3GPP mobility on RAN rules
 - Avoid traffic routing ping-pong decisions resulting from mobility in 3GPP and WLAN coverage area
- **Conclude on the overall set of WLAN Parameters for both network selection and traffic steering**
- **Define a mechanism for providing RAN assistance information to the UE**
- **Decide the interaction between ANDSF (with and without RAN enhancements) and RAN rules**
- **Roaming scenarios should have a lower priority in Rel-12 timeframe**
- **Requirement for eNB to broadcast the OPI to UEs in networks with ANDSF support**

CONCLUSIONS



- **Proposed way forward as a baseline for guidance to RAN2 and SA2**
- **CT work required to reflect changes to ANDSF MO as a result of this work in Rel-12**



Thank You!