3GPP TSG-RAN WG1 Meeting #101-e R1-200xxxx

e-Meeting, May 25th – June 5th, 2020

Agenda Item: 6.2.2.1

Source: Ericsson

Title: Feature lead summary #1 of Group WUS for NB-IoT

Document for: Discussion, Decision

# Introduction

The summary presents one presented issue regarding Group WUS for NB-IoT. Two contributions have been presented, [1],[2], addressing the alignment of the *commonSequence* between TS 36.211 and TS 36.331.

# Discussion

## Alignment of non-group WUS between specifications

In [3], the common WUS sequence is determined as follows:

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| 10.2.6B.1 Sequence generation…For a UE not configured with group NWUS, $g=0$. For a UE configured with group NWUS, $g=14\left(N\_{group}^{WUS}+1\right)$ for $0\leq N\_{group}^{WUS}\leq 7$, where $N\_{group}^{WUS}$ is determined by the UE group to which the UE is associated as determined by higher layers [10]. The common NWUS sequence shall be determined by $ g=126$ unless the resource is shared with non-group NWUS and common NWUS is configured to be non-group NWUS in which case $g=0$. |

The present GWUS IE from the most recent running CR [3] is presented below:

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| ***GWUS-Config-NB information element***-- ASN1STARTGWUS-Config-NB-r16 ::= SEQUENCE {  … commonSequence-r16 ENUMERATED {g0, g126} OPTIONAL, -- Need OR … |

It is identified in [1] that “*the terminology is not aligned, i.e., TS 36.211 uses “non-group NWUS”, and TS 36.331 uses “g0*”” whereas [2] identifies that “*since RAN2 changed the previous terminology, there is no misalignment issue between specifications.*”

Based on the above, there are two different proposals on how to proceed:

**Alt. 1:**Agree to the following TP:

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| 10.2.6B.1 Sequence generation…For a UE not configured with group NWUS, $g=0$. For a UE configured with group NWUS, $g=14\left(N\_{group}^{WUS}+1\right)$ for $0\leq N\_{group}^{WUS}\leq 7$, where $N\_{group}^{WUS}$ is determined by the UE group to which the UE is associated as determined by higher layers [10]. In resource that is not shared with non-group NWUS, the common NWUS sequence shall be determined by$ g=126$. In resource that is shared with non-group NWUS, the common NWUS sequence is determined by higher layers [9]. |

**Alt. 2:**

Maintain existing description of common NWUS sequence in TS 36.211.

## Companies’ preparatory comments

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| **Company** | **Does the above inconsistency need discussion in RAN1?** | **Comments** |
| Huawei/HiSilicon | Yes | Support Alt1. As explained in our Tdoc, the current spec has the following problems:* The terminology is not aligned, i.e., TS 36.211 uses “non-group NWUS”, and TS 36.331 uses “g0”.
* And it seems the field description in TS 36.331, i.e., “value *g126* indicates common WUS sequence for the shared WUS resource is g=126” is duplicated with TS 36.211. According to current TS 36.211, if the configured value is not “g0”, the common WUS sequence will be g=126.

Alt1 can solve the issues above, and can avoid referencing HL parameter name directly.Ok to have a joint discussion with eMTC. |

# References

1. R1-2004164, “Corrections on UE-group wake-up signal,” Huawei, HiSilicon, RAN1 #101-e, May 2020.
2. R1-2004673 (rev. of R1-2003795), “Discussion on group WUS for NB-IoT,” ZTE, RAN1 #101-e, May 2020.
3. TS 36.211, “Physical channels and modulation,” 3GPP, V16.1.0, March 2020.
4. R2-2004040, “Miscellaneous corrections to 36.331 for Rel-16 NB-IoT,” Huawei, HiSilicon, RAN2 #109bis-e, April 2020.