**3GPP TSG-RAN WG1 Meeting #120bis R1-25xxxxx**

**Wuhan, China, April 7-11, 2025**

**Agenda Item: 9.4**

**Source: Moderator (Huawei)**

**Title: Summary of email discussion [Post-120bis-Rel-19-38.291-Ambient\_IoT\_Solutions]**

**Document for: Discussion and Decision**

# Introduction

This document summarizes the discussions on the draft of TS 38.291 on [Post-120bis-Rel-19-38.291-Ambient\_IoT\_Solutions], and aims to endorse a first version 0.1.0 of the TS.

[Post-120bis-Rel-19-38.291-Ambient\_IoT\_Solutions] Email discussion on endorsement of initial Rel-19 draft TS38.291 – Matthew (Huawei)

* Editor to prepare draft TS by April 25
* Endorsement by May 7

## Editor’s responses to online discussion in RAN1#120bis

Thanks to all for the online feedback provided during RAN1#120bis, in Wuhan. I have considered them, and give or reiterate some replies here:

* To Qualcomm re. meaning of “chip”. I have made improvements to terminology and notation.

On the variable use of [square brackets], I have removed all, and used either embedded temporary notes where there are incomplete parts, or will always (re-)introduce an affected [clause] when agreements transpire. Companies may refer to the discussion document R1-2502662 from Wuhan if they’d like to see what other clauses might re-appear.

* To CATT re. definitions of OFDM. I have reviewed your suggestion to cross-refer TS 38.211 for defining REs, PRBs and time, rather than specifying in-place in TS 38.291.

However, TS 38.211 defines PRBs by reference to scalable SCS, common RBs (CRBs), point A, and within BWPs. That whole structure is inadmissible for A-IoT. I would have to include so many “disregarding <this> or <that>” statements, and “except for…” statements that I believe nothing would be gained and clarity would be lost. There could be more issues in future maintenance and enhancement CRs. I have so much as practicable used the same wording as found in the legacy 211 TSes when writing the OFDM sections. It turns out somewhat similar to LTE’s TS 36.211 as a result. I hope you will find the definitions correct.

On the definition of time reusing TS 38.211, this is also built on many legacy concepts of slot, subframe, radio frame and (in RAN2) SFN and hyperframes that do not exist in A-IoT. As written, this TS 38.291 includes only those things agreed (i.e. OFDM symbols and chips) for A-IoT and results in simple specification. The common timing point between NR and A-IoT – applicable only in-band while A-IoT is also supported standalone – is specified in clause “4.xr.3.x Resource grid”:

*For in-band deployment, the device expects the start of chip χ=0 is aligned in time with the start of an NR OFDM symbol as defined in clause 4.3.2 of [TS 38.211].*

and this gives you a reference and temporal anchor to TS 38.211 that you sought.

There is currently no agreement for a common frequency point with NR for A-IoT in-band deployment, so A-IoT subcarrier $k\_{RE}=0$ is ‘floating’. RAN1 may choose, or not, to clarify on this point.

* To Nokia on whether to copy or refer to TS 36/38.212 for FEC and CRC. I have considered again which is the better method, and I believe the copy method is more desirable if we are to have this standalone TS. It only needs to be carefully checked once, and then is convenient in case of enhancements in future releases making additions or changes to A-IoT that are (certainly) not suitable for adding to TS 36/38.212.
* To Panasonic on general structure. I find it more convenient to retain this ‘single flow’ model compared to the ‘section-per-spec’ option, and would prefer not to restructure. I actually see it as a simplicity advantage of the choice by RAN to combine the traditional specs into one for A-IoT.

# First round discussions

Companies are encouraged to provide the first round views by 29 April, 23.59 UTC.

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| *Company* | *View* |
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# Second round discussions

TBD