3GPP TSG-RAN WG2 #116 electronic R2-210xxxx

Electronic meeting, November 01 – 12, 2021

Agenda Item: 8.0

Source: Ericsson

Title: Summary of offline 048 Rel-17 RRC SetModifyRelease

Document for: Discussion, Decision

# 1 Introduction

This contribution summarizes the following discussion:

* [AT116-e][048][NR17] RRC SetModifyRelease (Ericsson)

 Scope: Review R2-2110778, R2-2110779, collect comments.

 Intended outcome: Report

 Deadline: EOM

Companies are invited to fill in contact details.

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| **Company** | **Contact details** |
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# 2 Discussion

The paper in [1] discusses the use of SetModifyRelease structure for Rel-17, to overcome the current limitations on SetupRelease structure, especially when it comes to its use for delta configuration, as explained in the paper. To further illustrate this issue some general aspects are outlined below.

Considering a source RRCConfiguration and a target RRCConfiguration, one needs to know whether the latter can be signaled as a delta from the former. Each configuration is a tree of fields. For each of those fields RRC specifies whether it is mandatory or optional; and if optional whether it is M, N, R or S.

To determine the delta between source and target RRCRecofiguration, one has to traverse both trees of configurations in parallel:

1. Fields which are mandatory must always be kept in the target tree.
2. Fields which are optional Need R and present in the target tree must be kept.
3. Fields which are optional Need M, and
	1. present in the target tree can be removed from the target tree if the source tree contains the same element with the same value.
	2. present in the target tree must be kept if the value is different from the value in the source tree
	3. absent in the target tree but present in the source tree
		1. must be set to Release (if they are a SetupRelease Structure)
		2. else, require releasing the parent field (e.g. by absence if the parent field is Need R)

The problem occurs if case 3)a and case 3)c-ii occur in the same IE. The IE and the affected value must be present due to 3) but must be absent due to 3)c-ii. This may imply on the need to e.g. send a first message where the field is set to "release" and a subsequent message where it is set to "setup" again, which may anyway not be possible for mutiple IEs (e.g. the UE would not be able to have pdcch-Config simply released while no configuration is added in the same message).

**Q1 Do companies have any comments on the aspects above?**

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| **Company** | **Comments** |
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To address this issue above, [1] discusses a SetModifyRelease structure for Rel-17, defined as:

SetModifyRelease { ElementTypeParam } ::= CHOICE {

 release NULL,

 set ElementTypeParam // sets or replaces the previous values

 delta ElementTypeParam // a delta to a previous configuration

}

The possible options and comparison with the current SetupRelease structure can also be summarized as below:

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| SetupRelease |  | SetModifyRelease |
| Contained field is… | Config branch |  | Contained field is… | Config branch |
| Setup | Release |  | Set | Modify | Release |
| Not configured | Full config | No action |  | Not configured | Full config | N/A | No action |
| Configured | Delta config | Release |  | Configured | Full config | Delta config | Release |

Note that essentially the behavior for the SetModifyRelease structure is alreadu present for SCG configuration, where we have a SetupRelease structure and *mrdc-ReleaseAndAdd* flag one level up. Essentially, an IE defined with SetModifyRelease allows to further perform a full configuration of this IE even when this IE is already configured.

**Q2 Do companies have any comments on the structure?**

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| **Company** | **Comments** |
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A draft CR was also submitted to capture this in 38.331 [2].

**Q3 Do companies have any comments on the draft CR?**

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| **Company** | **Comments** |
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# 3 Conclusion

- To be updated after discussion -

# 4 References

1. R2-2110778 Set Modify Release structure, Ericsson, RAN2 #116-e, November 01 – 12, 2021
2. R2-2110779 Draft CR for Setup Modify Release structure (38.331), Ericsson, RAN2 #116-e, November 01 – 12, 2021