**3GPP TSG-RAN WG3 Meeting #115-eR3-222464**

**Online, February 21st – March 3rd 2022**

Agenda Item: 13.3.1

Source: Ericsson (moderator)

Title: CB: # 1305\_IAB\_Con\_Mit - Summary of email discussion

Document for: Approval

# Introduction

The deadline for providing replies to Phase 1 is **Thursday, February 24th at 23.59 UTC.**

**Relevant papers:**

**[Eri1684]** (TP for IAB BL CR for TS 38.473) Congestion Mitigation in IAB Networks (Ericsson)

**[Hua2129]** (TP for BL CR for TS 38.473) Further discussion on congestion mitigation (Huawei)

A TP for QoE BL CR for TS 38.473 will be drafted based on the outcome of this round.

# For the Chairman notes

**Proposal 1: RAN3 defines F1AP signalling for configuring the buffer size threshold at the IAB-DU for the purpose of local rerouting.**

**Proposal 2: The format of the threshold is aligned with the RAN2 decision on the format of congestedThreshold-r17 in the running CR for TS 38.340.**

**Proposal 3: Agree the TP for IAB BL CR for TS 38.473 in R3-222502.**

# Discussion

## Implementation of WAs confirmed in RAN3#114bis-e

The F1AP TP in R3-221684 proposes to implement the confirmed WAs from RAN3#114bis-e and will be included in the TP assembled in the second round. The confirmed WAs are:

**Turn the following WAs into agreements:**

* **WA: per-BAP routing ID congestion indication will not be pursued in this release.**
* **WA: the presence of Child Node Identifier IE is Mandatory.**

**For inter-donor topology redundancy, the non-F1-terminating CU can initiate the revocation to handle the congestion at the upstream of boundary node in its topology.**

## Buffer size threshold configuration

**[Hua2129]** proposes to include in the F1AP BAP MAPPING CONFIGURATION message an IE for configuring the buffer level threshold at the IAB-DU. **The following RAN2#115-e agreement is referenced:**

*A configured threshold of available buffer size based on flow control feedback is used to determine the congestion, for the purpose of local re-routing.*

**Q1: Should RAN3 define F1AP signalling for configuring the buffer size threshold at the IAB-DU?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Answer** | **Comment** |
| **Ericsson** | **No** | In previous RAN3 IAB discussions on congestion/flow control it was concluded that specifying signalling for setting thresholds related to flow control is not preferred. |
| Lenovo | Yes, but | Based on the BL CR of TS 38.340.  For a link, the BAP entity at the IAB-DU or IAB-donor-DU may:  - if the available buffer size as indicated by the received BAP Control PDU for flow control feedback per BAP routing ID is less than the [*congestedThreshold-r17*], if configured:  - consider the BH link as congested for this BAP routing ID (for rerouting purpose defined in accordance with clause 5.2.1.3).  A configured threshold of available buffer size needs to be configured to the parent IAB-node to determine the congestion based on the received HbH flow control. However, the threshold should be configured per BAP routing ID because the buffer size for each BAP routing ID may be different. |
| Nokia | No | OAM can be used to configure the IAB-DU. |
| Fujitsu | Yes | RAN2 agreement need to be respected. It is better to use F1AP signalling. |
| Samsung | Yes | This is RAN2 agreement, and such buffer size threshold should be BAP routing ID specific. |
| ZTE | Yes | Agree with the TP given in [Hua2129]. |
| Huawei | Yes | Use F1AP signalling to provide the configuration is more flexible than OAM based solution, and CU can determine the threshold for each BH link according to the link status by proper implementation. We think the per BAP routing ID is reasonable, but will result in more signaling overhead, so we suggest the threshold is configured per IAB node. |
| QCOM | Yes | This threshold applies to hop-by-hop flow control feedback and is used to trigger local rerouting. Indeed, the threshold should be configured via F1AP. RAN2 forgot to send an LS on this topic.  We disagree with Nokia. RAN2’s agreement implies that it is “configurable” and not “up to implementation.  We disagree with Lenovo and Samsung that this threshold should be specific to BAP routing ID. This was never agreed by RAN2! We agree with HW that it should be configured per IAB-node.  On Ericsson’s reply: RAN3 agreed:  The trigger for sending the CP-based congestion indication is up to implementation.  This agreement refers to RAN3’s effort on congestion indication, it does not refer to RAN2’s effort on local-rerouting based on hop-by-hop flow control feedback. |

**Summary:**

6 companies think that this should be specified, 2 are against. Out of the 6 supporting companies, two think that the threshold is per BRID. Given that the RAN2 agreement does not specify the granularity, the Moderator assumes that the threshold level is for the entire IAB-node, rather than per BRID. Note that the RAN2 agreement mentions “A configured threshold of available buffer size” (i.e., singular). The format of the threshold IE should be aligned with RAN2’s decision.