3GPP TSG-RAN WG3 #125 R3-244699

Maastricht, NL, 19th – 23th Aug, 2024

Agenda Item: 11.4

Source: Ericsson (Moderator)

Title: SoD on CB: # AIRAN3\_EC

Document for: Approval

# 1 Introduction

This SoD is to discuss the following CB:

**CB: # AIRAN3\_EC**

**- Get convergence on the options above on finer granularity of EC**

**- Draw the conclusion**

(moderator - E///)

Summary of offline disc [R3-244699](Inbox\R3-244699.zip)

# 1 Summary for chairman notes

**- RAN3 agrees that enhancements to the node level EC granularity to a scope finer than a whole gNB could be beneficial, assuming that such enhancements enable network level energy saving.**

**- There is no consensus on how to move forward with a potential solution for the issue**

**It is proposed to ask online whether, on the basis of the above, RAN3 should treat the topic during normative work.**

A TP based on the above will be provided

# 2 Discussion

## 2.1 Energy Cost Granularity Enhancements

### 2.2.1 Measured Energy Cost

During online discussions the topic of enhanced granularity for the EC was discussed. Legacy Energy Cost represents a measured energy consumption for an entire gNB. The intention in the AI/ML for NG-RAN SI is to explore ways to improve the granularity of the per gNB EC.

In order to guide the discussion and reach progress, a number of questions are formulated below.

1. **Does RAN3 agree that enhancing the granularity of the Energy Cost to something finer than a whole gNB would benefit the Rel18 AI/ML based energy saving solution?**

**Discussion outcome:**

**RAN3 agrees that enhancements to the node level EC granularity to a scope finer than a whole gNB could be beneficial, assuming that such enhancements enable effective energy saving actions.**

1. **Should any new metric introduced over F1/Xn to improve the EC granularity for Rel19 consist of measurements or could it consist also of estimations?**

**Discussion outcome:**

Nokia: there could be benefits to consider estimations of finer granularity over measurements that provide course granularity.

Huawei: Solutions should be based on measurements

BT: Do we need to go into the details of whether the finer granularity EC is measured or estimated? Wouldn´t this only be about providing sufficiently good accuracy?

E///: how to we regulate how accuracy is determined?

DT: training for an AI/ML model should be based on measurements.

CATT: In Rel17 we decided that the EC is per node, not per cell. It is not feasible to measure a per cell level EC.

Lenovo: how can we measure today the amount of energy saved with cell switch off?

DT: We have per node measurements, revealing the delta in energy consumption

TIM: The main point is whether inter vendor estimations are trustable.

Nokia: a good estimation on cell level is better than an irrelevant measurement such as a per node EC

Huawei: How can we derive that the estimation is good?

**A finer granularity EC should be based on measurements. Whether an estimation can be considered to be a measurement is FFS.**

1. **At RAN3-125 the following options were proposed to improve the EC granularity:**
   1. **Measured EC per group of Cells**
   2. **EC per Cell**
   3. **EC per one or more HO event**

**Which of the option above reflects the conclusion of the discussion above and could be proposed for further normative work in Rel19?**

**Discussion outcome:**