**3GPP TSG-SA2 Meeting #170 *S2-2506242***

**Goteborg, Sweden, August 25-29 2025**

**Source: Nokia**

**Title: KI#3: proposed agreement of principles**

**Document for: Approval**

**Agenda Item: 20.4.1**

**Work Item / Release: FS\_EnergySys\_Ph2 / Rel-20**

*Abstract: This document proposes to agree principles for KI#3*

# 1. Introduction

The topic of NF selection has been discussed quite extensively already in rel-19 and now in rel-20 EnergySys studies. There has been at SA2#169 convergence on a Solution that seems to cover the needs that most companies agree on. It is therefore suggested that the solution principles of NF selection can be agreed at this meeting based on solution 20 principles. Also for AMF selection nothing special is required if we consider no RAN impacting approach, in that the AMF is selected by NG-RAN as per current specifications and then the AMF itself can consider the energy related parameter if supported in selecting alternative AMFs when triggers for AMF selection/reselection at AMF occur as per current specifications.

For the topic of path selections the following main approaches are on the table:

1. Re-using the NF selection approach above to select optimal UPFs according to energy criteria (e.g. as proposed in solution 20)
2. Use estimates of energy consumption per Session/UPF at the SMF to perform UPF selection (solution 21, 22, 23)
   1. Involving the AF, PCF, SMF to calculate energy consumption per DNAI (sol 21)
   2. Selecting the UPFs that maximize renewable energy consumption (sol 22) by introduction of an explicit renewable Indication of renewable energy is used or not in NF profile. The EIF can trigger the SMF to use NF profile info based on notification from SMF the renewable energy is used per slice or for a set of slices.
   3. Select UPF at SMF by using the NF profile and information from EIF that is only for CN part (so exposure change is required) as in solution 23

The first approach seems quite agreeable by the supporting companies, the second approach which is proposed in solution 21,22, 23 and for our perspective seems to be requiring further study as it is not clear how measuring the energy consumption of a session or UPF(s) on a path should result in changing the path as the implication is that after the action the overall energy consumption is predicted to be lower. The identification renewable energy is used in solution 22 can be supported by energy priority indication where the operator can explicitly select renewable energy. If an explicit renewable energy is required needs further study.

# 2. Text Proposal

It is proposed to capture the following changes in TR 23.700-67.

\* \* \* \* First change (all new text) \* \* \* \*

### 7.1.3 Agreed Principles for KI#3

The following principles are agreed for KI#3:

- The NF profile is enhanced to include the parameters proposed in solution 20. This is a feature requiring the software to be upgraded in NRF and its consumers.

- UPFs are selected/reselected by using NF discovery and selection procedures which may be Energy-aware if NF profile is updated as per bullet above.

### 7.2.3 Topics for further consideration for KI#3

The following principles are for further discussions for KI#3:

- whether the NF profile needs to include explicit indication of usage of renewable energy or using energy Priority to implicitly take this into account is sufficient.

- Whether considering the energy consumption of a PDU sessions or of a NF over a Path should be a trigger for reselection of UPFs (including embedding this information in DNAIs )

\* \* \* \* End of change \* \* \* \*