**3GPP TSG-SA2 Meeting #170 *S2-2507677***

**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. Nokia is acting as pen holder of the consolidation effort.*

# 1. Introduction

This paper summarizes the input from

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| --- | --- | --- | --- |
| 20.4.1 | - | KI#3 Interim Agreement and Principles | - |
| 20.4.1 | **[S2-2506242](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_170_Goteborg_2025-08/Docs/S2-2506242.zip)** | 23.700-67: KI#3: proposed agreement of principles | Nokia |
| 20.4.1 | **[S2-2506265](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_170_Goteborg_2025-08/Docs/S2-2506265.zip)** | 23.700-67: KI#3 interim agreements | CATT |
| 20.4.1 | **[S2-2506413](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_170_Goteborg_2025-08/Docs/S2-2506413.zip)** | 23.700-67: KI#3 Evaluation and agreements | Ericsson |
| 20.4.1 | **[S2-2506456](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_170_Goteborg_2025-08/Docs/S2-2506456.zip)** | 23.700-67: KI#3: Interim agreements | NTT DOCOMO |
| 20.4.1 | **[S2-2506772](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_170_Goteborg_2025-08/Docs/S2-2506772.zip)** | 23.700-67: Key issue#3, the analysis and interim agreement | ZTE |
| 20.4.1 | **[S2-2507044](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_170_Goteborg_2025-08/Docs/S2-2507044.zip)** | 23.700-67: Interim principles for KI3 | vivo |
| 20.4.1 | **[S2-2507147](https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_170_Goteborg_2025-08/Docs/S2-2507147.zip)** | 23.700-67: Agreed principles for key issue #3 | China Mobile |

# 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:

- For NF selection, 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. (ZTE NOKIA support, TBC as CATT S2-2506265 is placing it as topic for further consideration albeit energy priority and energy saving state are listed as UPF selection criteria, Ericsson S2-2506413 , agrees only to add energy priority and energy saving state but not schedules, as they think heartbeats can be used to update the priority (thye prefer the dynamic update than static information even if well known in advance, Vivo S2-2507044 and CMCC S2-2507147 add energy priority and energy saving state but not schedules)

- For UP path selection, the 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. (ZTE, Nokia support)

CATT S2-2506265- UPF may be (re)selected considering the following energy related information of the UPF, based on operator policy:

- EnergySaving State. (then why is NF profile enhancement FFS?)

- Energy Priority Information (then why is CATT placing this FFS?)

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- SMF may be triggered to adjust UP path(s) of (a subset of) established PDU session(s) via UPF reselection to optimize the operator's energy policy subject to SSC mode of the PDU sessions. (To be discussed if this can be triggered by EIF at all… Nokia believes that only NF roile changes should induce reselection.)

S2-2506772 ZTE

For the UPF selection, the UPF profile in the NRF is enhanced with parameters define in the solution#20.

### 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 )

CATT S2-2506265

- UPF may be (re)selected considering the following energy related information of the UPF, based on operator policy:

- energy consumption. (Nokia not ok as it is not clear why this should influence the path used.)

- renewable energy consumption ratio. (Nokia not ok as we need to consult SA5 on status of renewable energy work)

CATT S2-2506265- UP path(s) adjustment for PDU Session(s) may be triggered via DNAI (re)selection and/or UPF (re)selection, taking into account energy related information, e.g. the overall energy consumption, renewable energy consumption ratio and/or energy efficiency of the UP path(s) for transmitting the service data flow. (CATT – what is this adding? Why is DNAI relevant? #

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- In case of multiple configured energy policies in network, the "energy priority" is an array of priorities. Each entry of the array is the priority of the NF in the corresponding energy policy configured by the operator.

S2-2506772 ZTE

- For the UPF selection, the UPF profile in the NRF is enhanced with renewable energy indication (Nokia believe more work is needed in SA5 LS is needed)

S2-2507044 Vivo

- UP path of PDU session may be adjusted based on the energy related information of a list of DNAI(s) or UPFs from the OAM. (how is this achieved?)S2-2507147 China Mobile

The NF profile is enhanced, including the following information:

- Renewable Energy Information, as described in clause 6.20.1. (nokia believes this requires SA5 confirmation)

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