**3GPP TSG-SA2 Meeting #170 *S2-2506748r01***

**25 – 29 Aug, 2025, Goteborg, SE**

**Source: CATT**

**Title: KI#4, New Sol: Sensing Data Collection and Transport based on direct interface**

**Document for: Approval**

**Agenda Item: 20.2.1**

**Work Item / Release: FS\_Sensing\_ARC / Rel-20**

*Abstract: This pCR is proposed to add a new solution for KI#4.*

# 1. Introduction

This pCR proposes a solution for Key issue#4 Sensing Data and the Associated Information Collection and Transport.

Considering the sensing target is an object (e.g. UAV), the sensing message exchanged between RAN and Sensing Function (SF) is not specific to a UE, so the AMF involvement is not mandatory.

In this solution, the logic of AIOT2 interface between NG-RAN and AIOTF is referred, i.e. a direct interface (Nx interface) between NG-RAN and SF is proposed.

# 2. Text Proposal

It is proposed to capture the following changes in TR 23.700-14.

\* \* \* \* First change \* \* \* \*

## 6.0 Mapping of Solutions to Key Issues

Table 6.0-1: Mapping of Solutions to Key Issues

|  |  |
| --- | --- |
|  | Key Issues |
| Solutions | #1 | #2 | #3 | #4 | #5 | #6 |
| #1 | X |  | X | X | X |  |
| #2 |  | X |  |  | X |  |
| #3 | X | X | X | X | X | X |
| #4 | X |  |  |  |  |  |
| #5 | X |  |  | X |  |  |
| #6 | X | X | X |  |  |  |
| #7 | X |  |  |  |  |  |
| #8 |  | X |  |  |  |  |
| #9 |  | X |  |  |  |  |
| #10 |  | X |  |  |  |  |
| #11 |  | X |  |  |  |  |
| #12 |  | X |  |  |  |  |
| #13 |  |  | X |  |  |  |
| #14 |  |  | X |  |  |  |
| #15 |  |  | X |  |  | X |
| #16 |  |  | X |  |  |  |
| #17 |  |  | X |  |  |  |
| #18 |  |  |  | X |  |  |
| #19 | X | X |  |  | X |  |
| #20 |  |  |  |  |  | X |
| #x |  |  |  | X |  |  |

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

## 6.X Solution #X: Sensing Data Collection and Transport via the Direct Interface between NG-RAN and SF

### 6.X.1 High level principles

This solution aims to address key issue#4 Sensing Data and the Associated Information Collection and Transport.

The principles of the solution include:

- The Sensing Function (SF) and NG-RAN acting as sensing entity supports direct interface to transfer sensing message.

### 6.X.2 Description

The architecture with direct interface between NG-RAN and SF is shown in Figure 6.X.2-1.



Figure 6.X.2-1: The architecture with direct interface between NG-RAN and SF

SF selects NG-RAN to act as sensing entity and uses Nx interface to transfer sensing message with the selected NG-RAN.

NOTE1: The protocol stack for the Nx interface can be determined based on coordination with RAN and CT WGs.

### 6.X.3 Procedures



Figure 6.X.3-1: Sensing Message Transport procedure

0a. The SF is configured with the information of NG-RAN which supports the Sensing Entity function, e.g. the IP address of NG-RAN.

NOTE2: The configuration is in scope of SA5 WG.

0b. The sensing service consumer/NEF/GW function sends sensing service request to SF.

0c. The SF selects NG-RAN to act as Sensing Entity.

1. The SF sends DL Service Message Transfer to the selected NG-RAN. The message includes SF identifier, correlation ID and sensing request message. The correlation ID is allocated by SF to identify the sensing service request received in step 0.

NOTE3: The sensing request is in scope of RAN3 WG.

2. The NG-RAN sends UL Service Message Transfer to SF. The message includes SF identifier, correlation ID and sensing response. The correlation ID is received in step 1.

NOTE4: The sensing response is in scope of RAN3 WG.

3. The SF sends sensing service response including the sensing result to the sensing service consumer/NEF/GW function.

### 6.X.4 Impacts on Services, Entities and Interfaces

SF, NG-RAN:

- Support sensing message transfer via the direct interface between RAN and SF.

\* \* \* \* End of changes\* \* \* \*