

SA5 Rel-19 23Q3 moderated discussion – Management aspects of Integrated Sensing and Communication - Version 0.0.4

SA5

<https://nwm-trial.etsi.org/#/documents/8720>

Feedback Form 1: Summary

1 – ZTE Corporation

Based on the discussion in NWM, following are the brief summary:

1. Comments from Huawei and ChinaUnicom are addressed. The scope of this topic will focus on basic management for ISAC.
2. Comment from Samsung about dependency on agreed SA2 study and where this study can be dependent or decoupled with SA2 needs further discussion during the meeting.

1 Introduction

1.1 Justification

The deep integration of information technology, mobile communication technology, artificial intelligence and big data technology is driving the rapid development of 5G technology and services. More and more technology and services are widely penetrating into personal applications and vertical application. These emerging services have made the integration of sensing and communication one of the leading trends in future wireless communication technologies and services.

Integrated Sensing and Communication (ISAC) use cases and requirements have been researched and consolidated in TR 22.837 in SA1. Within this study, sensing applications such as intruder detection applications (highway, railway, restricted area for UAV, yard and home), monitoring applications (rainfall, tourist, flood, respiration and sport), navigation assistance applications, real-time map generation applications, collision avoidance application, etc., can be achieved via 5G system using different sensing methods to fulfil the required sensing accuracy.

SA1 has already started normative work in TS 22.137.

SA2 is making efforts to address the ISAC related requirements (Focusing working task on architecture and procedure).

As to RAN WGs, RAN1 is independent from SA2 work, scope may include Channel Modeling;

RAN3 is aiming at the coordination work with SA2's work on ISAC in Rel 19, scope include:

- Control plane aspect (e.g., Protocol stack, how to trigger gNB start the sensing service);
- User plane aspect (e.g., Protocol stack, data format)

Considering ISAC has brought plenty of novel features and devices to the network, it is suggested to investigate potential use cases and for the OAM level. Management aspects of ISAC also need to be addressed

in SA5 scope and potential scopes may include potential uses cases, requirements, NRM, configurations/PMs/KPIs, etc.

Since SA1 already has specific descriptions in TR 22.837 and TS 22.137, it is suggested to majorly focus on the existing requirements related to OAM from SA1 decoupled with SA2. Considering RAN1 and RAN3 have plan to start independent study, the study in SA5 should also be independent.

Feedback Form 2: Comments on justification

1 – Huawei Tech.(UK) Co.. Ltd Is there any work in RAN WGs? If yes, please add corresponding RAN WGs’s work in the justification.
2 – ZTE Corporation Thank you for your good suggestion, and I will update in Version 0.0.2
3 – Samsung R&D Institute UK This is dependent on SA2 discussion. This need to wait untill a related study in agreed in SA2
4 – China Unicom Which specific TS or TR are refered to? Suggest to add references. Since SA1 already have specific descriptions in TS and TR, it is suggested to majorly focus on the existing requirements related to OAM from SA1 decoupled with SA2. Considering RAN1 and RAN3 have plan to start independent study, the study in SA5 should also be independent.

1.2 Objective

This study item focuses on the management aspects after the introduction of ISAC (Integrated Sensing and Communication). **Potential scope includes:**

- (1) Investigate requirements and use cases related to network management for ISAC, including:
 - (1.1) Investigate which requirements and use cases for ISAC defined in SA1 related to SA5 management and orchestration
 - (1.2) Investigate potential requirements and use cases of network management for ISAC network feature defined in RAN WGs and SA2.

Note: Objective (1.2) depends on progress in RAN WGs and SA2.

Feedback Form 3: Comments on objective 1

1 – Huawei Tech.(UK) Co.. Ltd Question: Clarify what’s the potentially introduced sensing function/entity? Which group will define this? I would suggest to splitting this objective into two sub objectives, following are the concrete wording

suggestions for this objective:

1.1. Investigate which requirements and use cases for ISAC defined in SA1 related to SA5 management and orchestration.

1.2. Investigate potential requirements and use case of network management for ISAC network feature defined in RAN WGs and SA2.

Note: Objective 1.2 depends on progress in RAN WGs and SA2.

2 – ZTE Corporation

Thank you for your good suggestion and concrete comments, and I will update in Version 0.0.2

3 – China Unicom

Suggest to divide the potential requirements use cases in two parts. The first part is related to existing conclusions from SA1, which could decouple the work from SA2 and other RAN groups. The second part is dependent on the input from SA2 or other RAN groups, whose progress could be controlled to align with the work from other groups' work.

Considering ISAC has brought plenty of novel features and devices to the network, it is suggested to investigate potential use cases and for the OAM level.

(2) Investigate network management solutions for potential sensing-related network functions/entities for ISAC

Feedback Form 4: Comments on objective 2

1 – China Unicom

SA5 should investigate network management solutions and the network management procedures for sensing. The network management procedure should consider about the network architecture, different configurations and different reporting data for different sensing nodes, and the IEs for the management message should be studied and specified.

2 – China Unicom

It is recommended to develop/enhance performance measurements, corresponding KPIs, and network management capabilities for 5G networks for different ISAC scenarios, including network measurements from 3GPP systems and management of network elements/nodes based on sensing-data management for 3GPP systems/non 3GPP systems.

~~(3) Investigate whether the NRM of sensing-related network functions/entities need to be enhanced to support ISAC~~

Feedback Form 5: Comments on objective 3

1 – Huawei Tech.(UK) Co.. Ltd

This objective is already covered by objective 4 network configuration to support ISAC. Please remove this objective

2 – ZTE Corporation

Thank you for your good suggestion and concrete comments, and I will update in Version 0.0.2

(4) Investigate the potential network configuration to support ISAC, including:

- network configuration (including NRM enhancement) for RAN ISAC features
- network configuration (including NRM enhancement) for 5GC ISAC features

Feedback Form 6: Comments on objective 4

1 – Huawei Tech.(UK) Co.. Ltd

I would suggest to splitting the network configuration data for RAN and CN, following are the concrete wording suggestions for this objective:

Investigate the potential network configuration to support ISAC, including:

- network configuration (including NRM enhancement) for RAN ISAC features
- network configuration (including NRM enhancement) for 5GC ISAC features

2 – ZTE Corporation

Thank you for your good suggestion and concrete comments, and I will update in Version 0.0.2

3 – China Unicom

I suggest to study the potential network configuration to support ISAC according to different sensing mode, e.g. gNB mono-static sensing, gNB bi-static sensing, UE to gNB bi-static sensing, etc. Different sensing mode will use different nodes to perform sensing, it will have different configuration requirements, the OAM can send different configurations to different node to enable the sensing functionality in SA and RAN.

(5) Study whether PMs/KPIs needs to evaluate the performance for ISAC

Feedback Form 7: Comments on objective 5

1 – China Unicom

The PMs/KPIs to evaluate the performance for ISAC should be studied according to different scenarios, the target use cases should be identified and the corresponding KPIs for each use cases should be specified accordingly.

2 – China Unicom

SA1 has proposed clear KPI indicators for different ISAC application scenarios. It is recommended to con-

duct PM/KPI indicators and measurement studies separately for these different ISAC application scenarios, such as object detection and tracking, environmental monitoring, motion monitoring, etc.

(6) Investigate energy efficiency for sensing operations of ISAC

Feedback Form 8: Comments on objective 6

1 – Huawei Tech.(UK) Co.. Ltd

Suggest to remove this objective. The ISAC is a new feature introduced in Rel-19, we should focus on the basic management functionalities in Rel-19.

2 – ZTE Corporation

Thank you for your good suggestion and concrete comments, and I will remove it in Version 0.0.2. Let's focus on basic management of the new feature.

(7) Investigate whether to need enhancement for Data Collection (e.g., management data, sensing data etc.) for ISAC

Feedback Form 9: Comments on objective 7

1 – China Unicom

The data collection for sensing needs to be studied, which data should be send to the specified collection centre or other entity need to be further studied and specified.

2 – China Unicom

The study on data collection for ISAC is necessary. It is recommended to distinguish between the 3GPP-based sensing data and non-3GPP-based sensing data, and further study the data collection and data management separately.

2 Scoping Discussion

2.1 Objectives discussion

Feedback Form 10: Which of the above objective should be in scope of Rel-19?

Feedback Form 11: Can any of the objectives above be combined/merged?

Feedback Form 12: Should any of the Objectives above be reworded? If so, propose the required rewording.

2.2 Additional Objectives

Feedback Form 13: Are there any additional Objectives that should be part of Rel-19? If Yes, please add and describe them
