**SA WG2 Meeting #168 S2-250xxxxv1**

**07 - 11 April, 2025, Goteborg**

**Source: Moderator**

**Title: Discussion on work areas of 6G SA2 study**

**Document for: Discussion**

**Agenda Item: 30.7**

**Work Item / Release: Rel-20**

*Abstract of the contribution:* *This paper discuss the work areas of 6G SA2 study.*

# 1 Discussion

Several input papers on the technique areas of 6G are submitted into SA2#168 and a summary is provided in the following link.

<https://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_168_Goteborg_2025-04/INBOX/DRAFTS/6G%20SID/6G%20Input%20Summary%20v2.xlsx>

Based on the input paper the moderator generates an initial set of work areas for SA2 6G study. It is proposed to discuss the initial set of work areas and figure out the contentious aspects that need further NWM discussion, and identify any missing aspects.

NWM discussion on the 6G SID is expected after SA2#168, from Apr. 15(Tue)-25(Fri), 2025. After the NWM discussion the moderator will provide a summary and a proposal of 6G SID for SA2#169 meeting.

The following are moderator proposals on the work areas and NWM questions

# 2. Work Area Descriptions

It is proposed to endorse the following WA for NWM discussion.

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## 1.0 System architecture requirement, principle and assumption

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Investigating architectural requirements, assumptions and principles for 6G system |

## 1.1 System Architecture

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study the overall architecture including at least the following aspects:* Study and identify functionalities, NFs etc. that use 5GC NFs as basis and any potential enhancements.
* Study and identify functionalities, NFs etc. that need further study and that may be redesigned
* Study and identify new functionalities, NFs etc. to be added for supporting new features
 |

## 1.2 Migration and interworking

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study how to interwork with 5GS and whether to interwork with 4GS. |

## 1.3 AI aspect

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study all aspects of AI in 6GS, including at least the following:* E2E AI based framework across 6G AN and CN(i.e. AI for system, system for AI)
* Support of AI Agents

NOTE X: The AI Agent part will be updated based on progress of SA1 study progress.NOTE Y: Duplication with ongoing 5GA work should be avoided.NOTE Z: Whether and how to use common data framework for AI data will be considered during the study |

## 1.4 Common Data framework

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study common data framework for all aspects related to data handling including data collection, distribution, processing, storage and exposure, with consideration of user consent. The example of data may include data of AI and Sensing. |

## 1.5 Sensing

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Common framework for all session modes. |

## 1.6 Computing

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study potential enhancement on computing service in 6GS, including at least the following:* Coordination between UE and core network for computing services
* Exposure framework to offer computing service to authorized third-party applications.

NOTE X: This WA will be updated based on progress of SA1 study progress. |

## 1.7 SBI enhancement

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study any potential enhancement on the SBA, including at least the following:* SBA enhancement (e.g. enhancement on NRF/SCP, N2 SBI, N4 SBI, etc.)
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## 1.8 NAS Aspect

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study support for NAS for 6G for connectivity and beyond connectivity services, including at least the following:* Whether and how to introduce a new NAS functionality without impacting other NAS functionalities.
* Whether and how to identify basic/minimal NAS functionality profile that does not get impacted by additional NAS functionalities

NOTE X: Security aspect will be coordinated with SA3. |

## 1.9 Network Slicing

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study how to support network slicing in 6G, including at least the following aspects* How to support network slicing in 6G
* How to simplify the network slicing
* Interworking and mobility with legacy system on network slicing.

How to enable exposure of KPIs per Network Slice to the UE. |

## 1.10 QoS Aspect

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study any enhancement on QoS framework, including at least the following:* Extend Policy and QoS framework to support of new services
* Content awareness, elastic and agilely adaptive QoS framework
 |

## 1.11 User plane architecture

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study any enhancement on the user plane architecture, including at least the following:* Enhancement on the user plane path selection, non-session oriented connectivity, mobility and SSC modes
* In-band and On-path application Network interaction
* Enhanced traffic management for end-to-end encrypted traffic without compromising user privacy
* Study more flexible, efficient and stateless UP communication
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## 1.12 IMS enhancement

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study any enhancement on the IMS architecture, including at least the following:* IMS architecture simplification, including network elements convergence and signaling optimization.
* Support for legacy service, immersive service and Intelligent RTC services communication
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## 1.13 Distributed Autonomous Network

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study whether and how to support distributed and simplified networking in localized deploymentNOTE X: This WA will be updated based on progress of SA1 study progress. |

## 1.14 User consent framework

**Moderator proposal:**

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| --- | --- |
| Work Area Description | User consent framework is expected to be studied in SA3 first and coordinated with SA2. |

## 1.15 Network Sharing

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study how to support the network sharing in 6G, including at least the following:* Support of different network sharing mode in 6G, e.g. MOCN, INS, potential new mode
* RAN sharing, other infrastructure resources sharing (e.g. core network sharing, computing resources sharing,)
* dynamic/on-demand network sharing
 |

## 2.1 Sustainability and Energy Efficiency

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Sustainability and Energy Efficiency aspects will be discussed as part of architecture requirement, and has high dependency on the system architecture.Whether to have dedicated work area will be decided during the study.NOTE X: Duplication with ongoing 5GA work should be avoided. |

## 2.2 Cloud native

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Cloud native aspects will be discussed as part of architecture requirement, and has high dependency on the system architecture.Whether to have dedicated work area will be decided during the study. |

## 2.3 Robustness and Resiliency

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Robustness and Resiliency aspects will be discussed as part of architecture requirement, and has high dependency on the system architecture.Whether to have dedicated work area will be decided during the study. |

## 3.1 Legacy service

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study whether and how to support legacy services (e.g. voice, SMS, MPS, Mission Critical services, PWS, etc.) in 6G.NOTE X: This WA will be updated based on progress of SA1 study progress.. |

## 3.2 Immersive service

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study how to support immersive service in 6G, including at least the following* IMS enhancement to support immersive service
* QoS enhancement to support immersive service

NOTE X: This WA will be updated to reflect the requirements on immersive service based on progress of SA1 study progressNOTE Y: Coordination with SA4 is needed. |

## 4.1 NTN

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study how to support 6G NTN, including the following aspects:* Discuss whether to reuse existing 5GC enhancement for NTN as part of system requirements
* Support of new 6G NTN RAT

NOTE X: Duplication with ongoing 5GA work should be avoided.NOTE Y: 6G NTN RAT aspects depend on RAN progress |

## 4.2 Non 3GPP access

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study how to support non 3GPP access and minimize access dependencies access agnostic |

## 4.3 New IoT

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study all aspects to support 6G IoT.NOTE X: RAN aspects on 6G IoT depends on RAN progress |

## 5. System aspect for security

**Moderator proposal:**

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| Work Area Description | Security aspects will be coordinate with the SA3.There is no need for dedicated work area for security. |

## 6. Network Exposure

**Moderator proposal:**

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| --- | --- |
| Work Area Description | Study a unified network exposure framework across 5G and 6G to foster API economies of scaleNOTE X: Network Exposure (API) will be coordinated with SA6 |

## 7. Policy aspect (26)

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| --- | --- |
| Work Area Description | Study potential enhancement on policy aspects, including at least the following* Potential enhancement on policy aspect, e.g. UE policy, AM policy, SM policy
* Policy for new services
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# 2. NWM question Proposals

It is proposed to endorse the following NWM questions for each work area for NWM discussion.

Q1: Should this work area be included in SA2 6G SID?,

If the answer is yes, then provide answer to the following (Q2-Q6)

Q2: Which of the proposed aspects do you support for the study?

Q3: Which of the proposed aspects do you not support for the study?

Q4: Which proposed aspects should be reworded?

Q5: Which aspects should additionally be studied?

Q6: What dependency does this work area have?

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