**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)-18(Fri), 2025. After the NWM discussion the moderator will provide a summary and a proposal of 6G SID for SA2#169 meeting.

The proposed initial set of work areas are following:

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This study aims to define a new system architecture for 6G mobile networks for improvement of existing services and support of new services. The 6G system architecture shall support new RATs, non 3GPP access types and minimize access dependencies.

The expected work areas will include:

1. Investigating architectural requirements, assumptions and principles for 6G system.

2. Targeting a standalone architecture including at least the following aspects:

- Study and identify functionalities, NFs etc. that use 5GC as basis and any potential enhancements.

- Study and identify functionalities, NFs etc. that are redesigned e.g.

- Optimization of network functions and procedures design to simplify the network interoperability.

- NAS aspects to improve the message delivery efficiency

- Network slicing to reduce the complexity in both UE and network

- Common framework for all non 3GPP accesses (including WIFI, Fixed broadband access)

- User Plane evolution.

- Service Based Interface evolution.

- QoS framework evolution.

- Migration and interworking with legacy system (at least including 5G)

NOTE a: Coordination with RAN WGs and TSG RAN is expected and final architecture decision will be jointly determined by TSG RAN and TSG SA

3. void.

4. Common Data framework for all data handling including data collection, distribution, processing, storage and exposure, for independent scalable deployment of new services.

5. Native AI design: Study whether and how to support for AI native 6G network targeting new services and AI-Agent communication..

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7. Study whether and how to enable simplified networking in localized deployment or services.

8. Integrated communication and computing framework to support coordinated computing between UE and core network, and to enable computing as a service

9. Common framework for all modes of integration of sensing and communication (See NOTE d). The detailed scope will be determined jointly with TSG RAN after the R20 5GA study on sensing concludes.

10. Common user consent framework to improve the user privacy protection and coordination with SA3.

11. Integration of TN and NTN to support ubiquitous connectivity.

12 IMS architecture enhancement (including simplification) to support legacy services and new services.

NOTE b: The final set of work areas will be further updated to aligned with the SA1 SI progress

NOTE c: The details of the work area and the dependency between work areas will be discussed and determined during the study.

NOTE d: Overlapping between R20 5GA and R20 6G studies shall be avoided

The architecture should be developed with the following non-exhaustive list of characteristics:

* The 6G system shall support legacy services, i.e. voice service, emergency service, messaging service, location service, etc.
* The 6G system shall support roaming.
* The 6G system shall support robust and resilient to achieve zero outage.
* The 6G system shall support Energy Efficiency and Energy Saving.
* The 6G system shall minimize the changes on API framework to reduce the impact on applications..
* The 6G system shall support direct network sharing and indirect network sharing.
* The 6GC shall be cloud native
* The 6G system shall not support interworking between 6G and 2G/3G

The complete or partial conclusions of this study will form the basis for the normative work and/or for any further study.

During the study, the result of FS\_6G-REQ work and FS\_6G\_RAN\_Scen\_Req work should be taken into account.

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