



# KDDI's visions and plans on SA1 Rel-20 6G study

Source:	KDDI
Agenda item:	8
Document for:	Discussion

# Objectives of this presentation

- This presentation introduces potential “killer services” on 6G. The services should be justified from various aspects, e.g., ...
  - The services should be expected by industries.
  - The services should be technically feasible, e.g., it should be realized by the enhanced existing technologies, XR, mobility, AI, etc.
  - The services should address problems learnt from 5G deployment and business experiences.
  - The services should comply with national/regional regulations.
- This presentation also introduces a tentative plan for 6G SI
  - Extracted 6G SI schedule
  - 6G SI structure

# Potential “Killer services” on 6G



## Unbound Experience

Using 6G, events in different spaces can be experienced realistically through three-dimensionalization and digitization of the five senses, enabling work and experiences that were previously impossible without sharing the same space to be realized without being bound to the space.



## All Mobility

6G will realize services that can deliver people, goods, and services to any location, including urban centers, by utilizing all kinds of space, including the sky, oceans, mountains, and (outer space). This will also contribute to solving labor shortages.



## AI-Native Life-navi

AI technology has become a familiar technology and is being used universally. Without waiting for instructions from users, AI is being used natively, autonomously making recommendations to improve the lives of individuals.

# Extracted Potential Requirements

## Dependable real-time (Immersive)

- Band utilization efficiency
- High performance cryptography
- Confidentiality and integrity without significant performance drawbacks

## Personalized configuration and consistent resource allocation

- Guaranteed NW performance
- AI-native-application oriented NW configuration
- Traceability without losing privacy

## Ubiquitous and resilient connectivity

- Multi-RAT/access area design and network design
- 3D coverage includes e.g., skies, outer spaces, and in-building, deep mine,

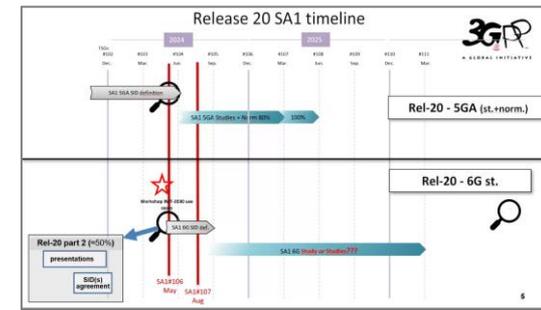
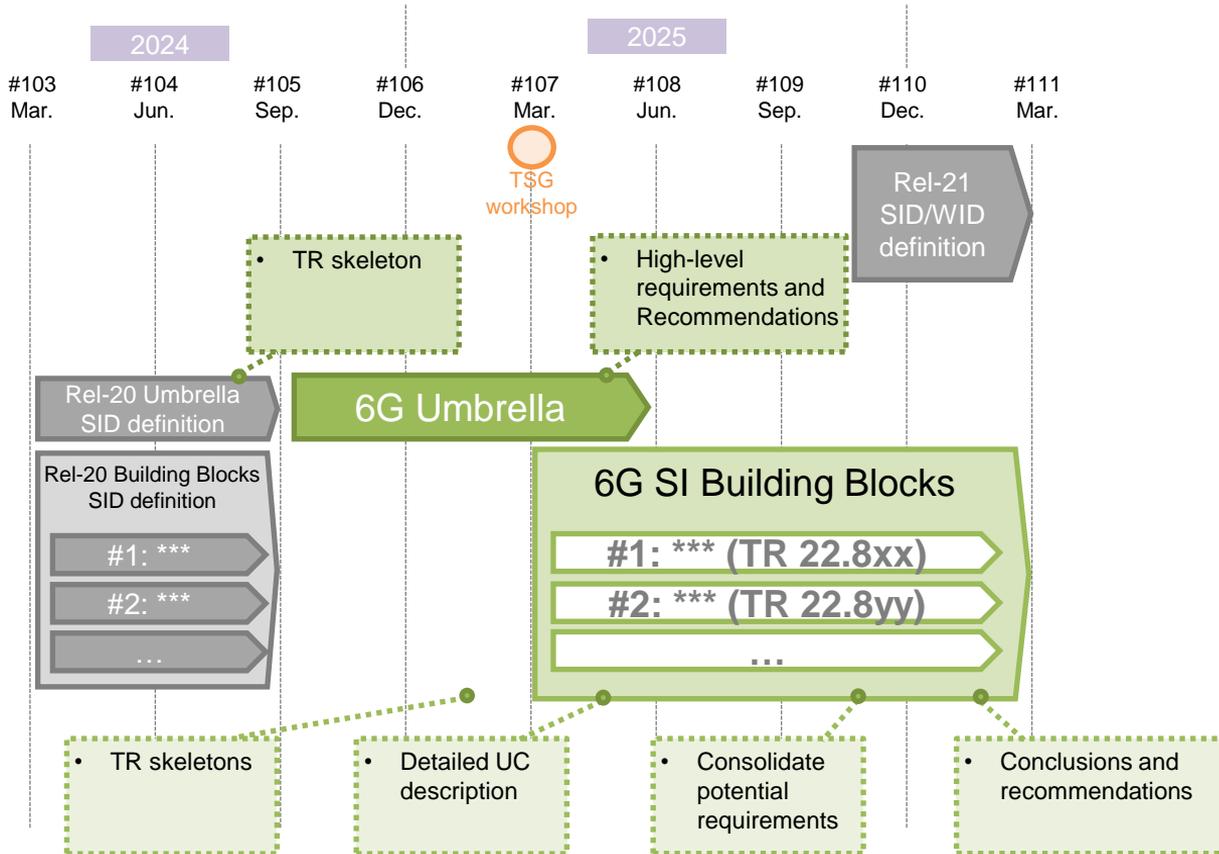
## General Aspects

- **AI-assisted NW**
- **Refactored and simplified network functionalities**
- **Sustainability**

# Justifications

- **Needs from markets or consumers :**
  - Sufficiently aligns with presentations given in the WS, which intended to be enhancements or extensions from the 5G use cases.
- **Alignment with the existing technologies and expected enhancement :**
  - Sufficiently aligns with many publications from consortiums, research projects, or institutes, e.g., ITU-R, B5GPC, Hexa-X-II, and etc.
- **Compliance with regulations and policies :**
  - Includes the technologies that enhance Privacy, Sustainability, and Traceability.
- **Resolution of issues identified through 5G deployment and operation :**
  - Be based on the services on 5G network, e.g., commercial metaverse services, connected vehicle services, and AI-chat services.
  - Requires better latency, throughput, jitter, reliability, continuity, etc.
  - Requires larger coverages including altitude axis.
- **Environmental conservation and Social justification :**
  - Includes the straight-forward solution for the decline in the labor force.
- **Consideration on parallel work with other TSGs :**
  - SA1 description should firmly combine between user service level description and system level requirements.

# Extracted 6G SI schedule



## Considerations

- Better to continue discussion efficiently between F2F meetings via e.g., NWM.
- Need to avoid the duplication of work
  - With downstream WGs
  - With 5GA work

# 6G SI structure

## Umbrella study

- Critical services
- Basic/supporting capabilities (sensing, positioning...)
- General aspects
  - Sustainability / Energy efficiency
  - Security
  - AI for NW
- etc.

## Building blocks

### Dependable real-time (Immersive)

- XR
- Metaverse
- Digital twin
- Low latency services
- Compute network convergence
- etc.

### Personalization

- Remote production
- Smart Everything
- Healthcare
- Entertainment
- Critical communication
- etc.

### Ubiquitous and resilient connectivity

- FWA
- NextG eMBB
- Disaster situation connectivity
- 3D connectivity
- Autonomous delivery
- etc.

- KDDI is still open what topics are captured in which part of the structure.
- Our suggestions are ...
  - Main study should contain high-level requirements and recommendations that are sufficient for downstream WGs to start their own study. The structure of Main study should be further considered.
  - Building blocks should populate detailed use case descriptions, considerations and potential requirements
  - Lessons and learnt from 5G experiences should be carefully respected, e.g., refactoring the existing requirements and functionalities



Thank you

Contact: [mak-suzuki@kddi.com](mailto:mak-suzuki@kddi.com)