

Advancing 6G

NTT DOCOMO, INC.

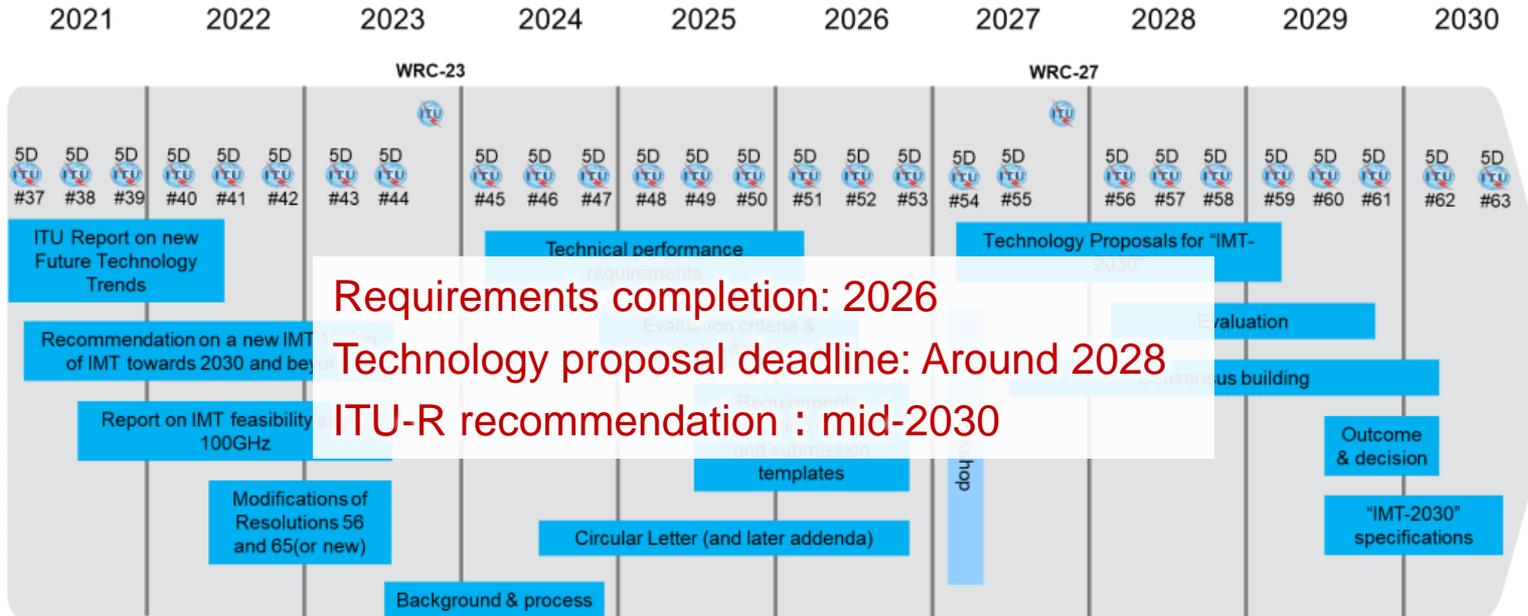
- 1. 6G Schedule and 6G Concepts**
- 2. DOCOMO's 6G Radio Technologies**
- 3. DOCOMO's 6G Network Technologies**
- 4. DOCOMO's 6G Use Cases**

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6G Schedule in ITU-R



WP 5D timeline for IMT towards 2030 and beyond



Requirements completion: 2026

Technology proposal deadline: Around 2028

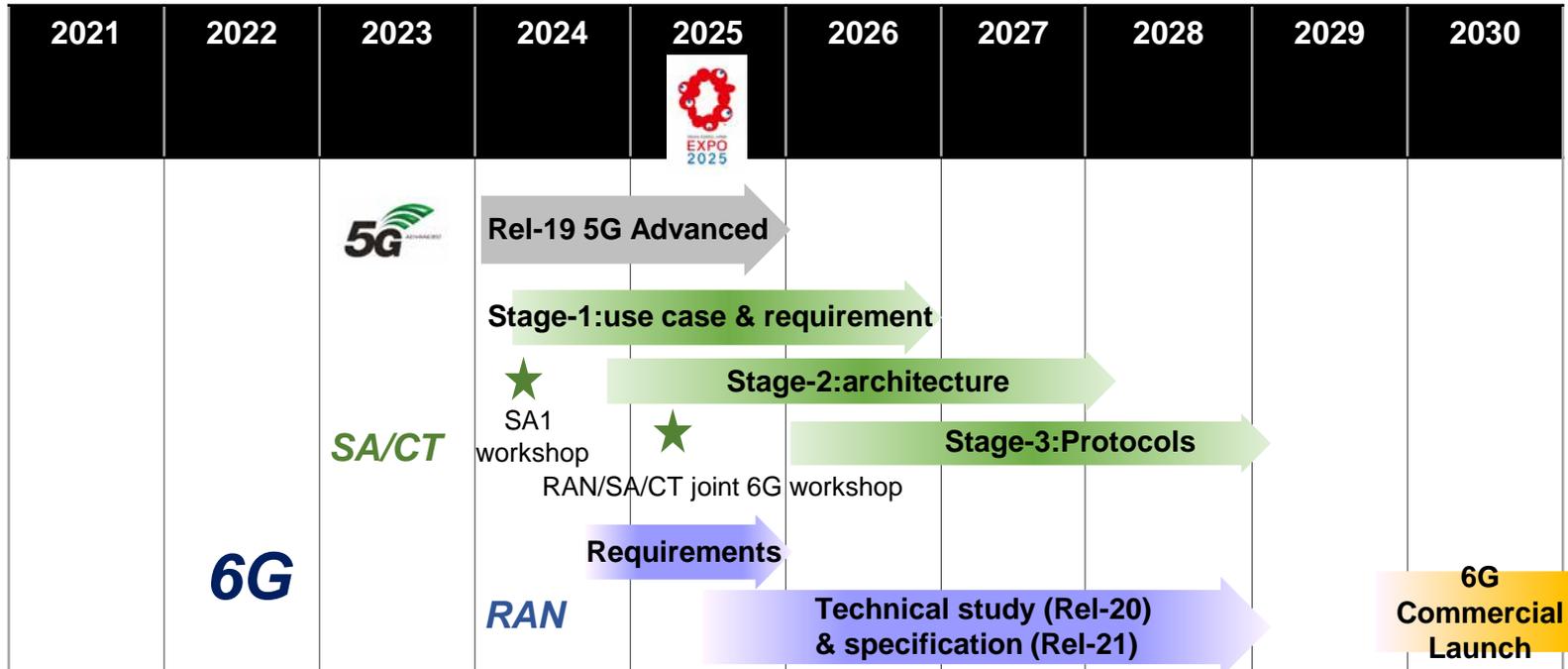
ITU-R recommendation : mid-2030

Note 1: Meeting 5D#59 will additionally organize a workshop involving the Proponents and registered IEGs to support the evaluation process

Note 2: While not expected to change, details may be adjusted if warranted. Content of deliverables to be defined by responsible WP 5D groups

6G Schedule in 3GPP

Changing worlds with you.



5G Evolution & 6G

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Cyberspace



AI

5G & 6G
EVO

Physical space



IoT, Machines, Robotics



Extreme-high data rate / capacity



Extreme-coverage extension and resilient NW



Extreme-low energy & cost for sustainability



Extreme-low latency



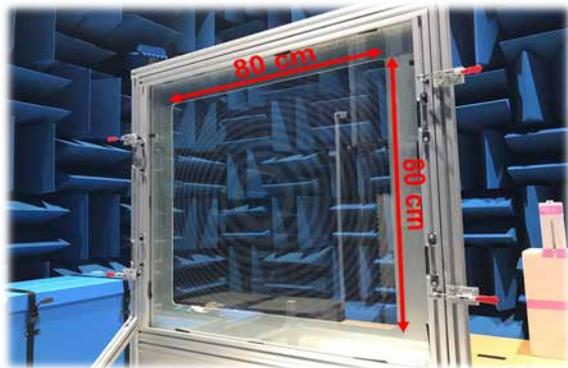
Extreme-high reliability and trustworthy NW



Extreme-massive connectivity and sensing

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1. Improved coverage with millimeter waves



Metasurface-lens windows



Reconfigurable Intelligent Surface (RIS)

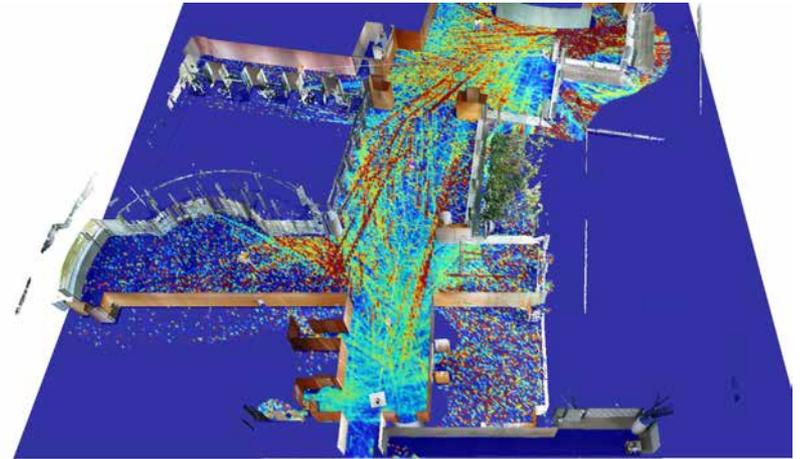
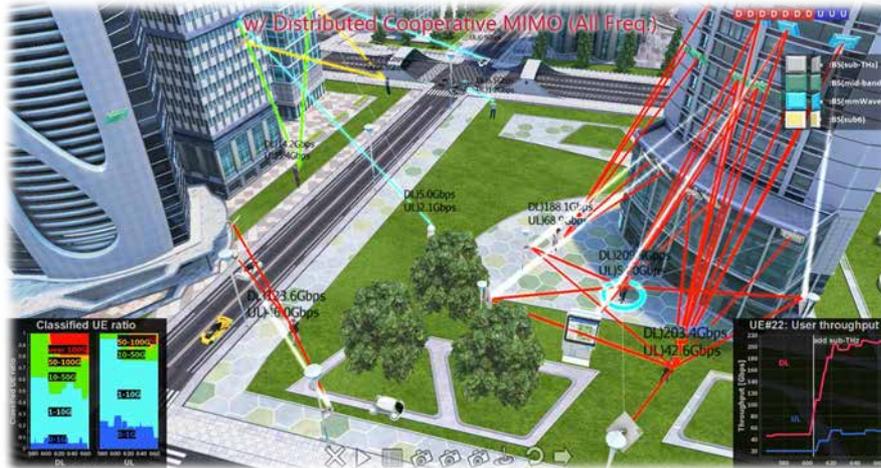


Dielectric waveguides

2. Sub-terahertz bands

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docomo



- Radio propagation measurement
- Analog device development

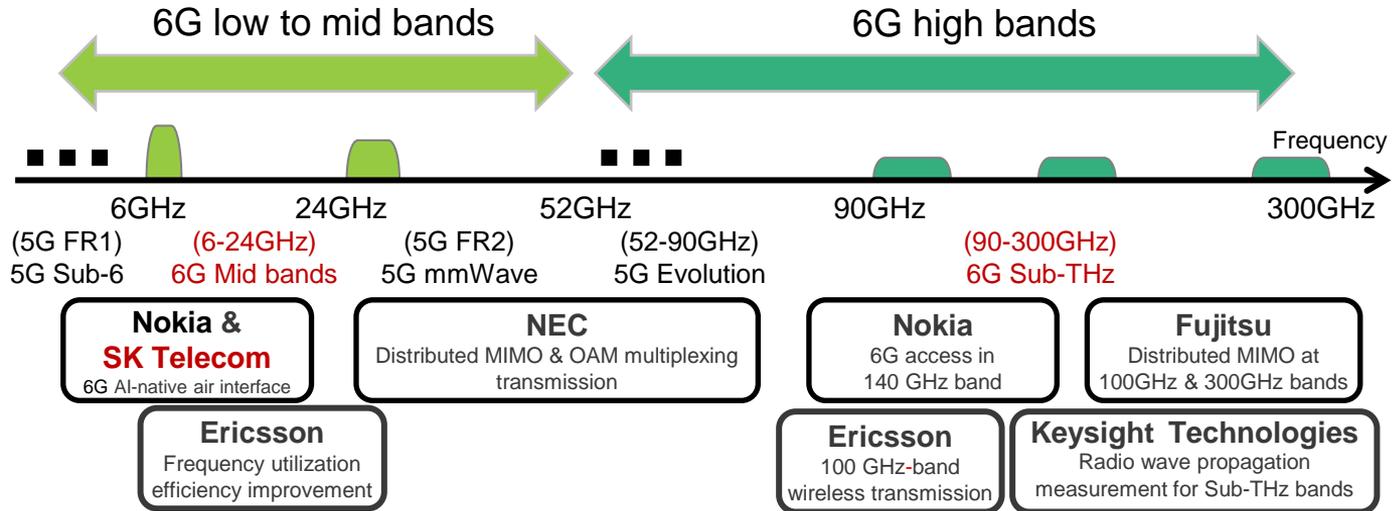
- >100 GHz transmission experiments
- Virtual and digital twin 6G simulator

6G Trials with Major Partners

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From June 2022



Starting February 22, 2024

Rohde & Schwarz

Wireless-sensing propagation measurement and performance evaluation

NEW PARTNERS

3. New communication areas

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Non-terrestrial Network (NTN)

Multi-layer NTN development

NTN and TN integration

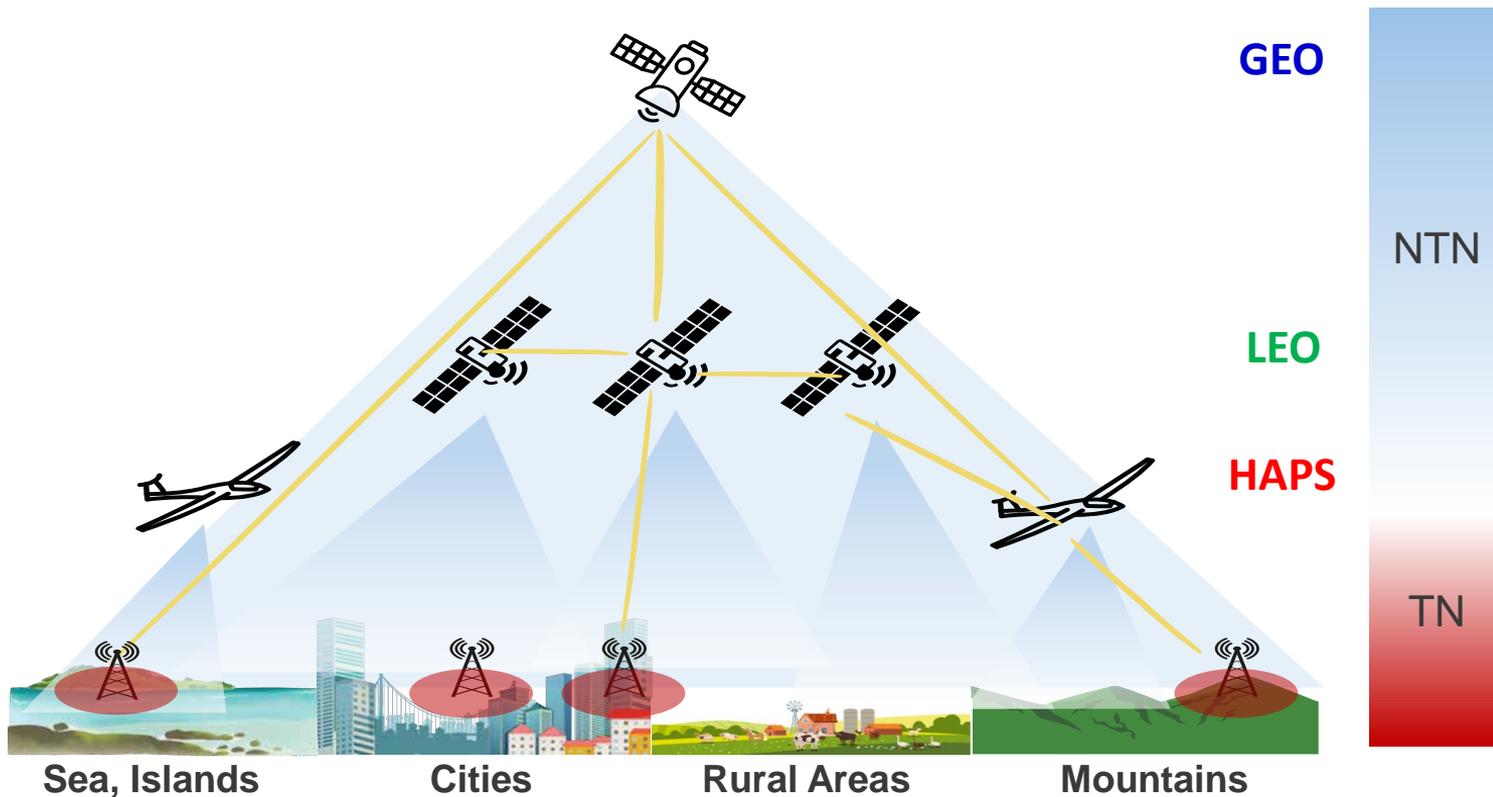
HAPS Simulator

Undersea



DOCOMO's NTN Concept

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DOCOMO NTN Lineup

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GEO



Credit : Lockheed Martin



Oct. 2023

WideStar III service

LEO



Photo: Amazon Project Kuiper

Nov. 2023

Strategic collaboration with
Amazon's Project Kuiper

Dec. 2023

Starlink Business

HAPS



**Collaboration with AALTO/Airbus
for HAPS commercial launch**

Demonstrations of 6G Technologies

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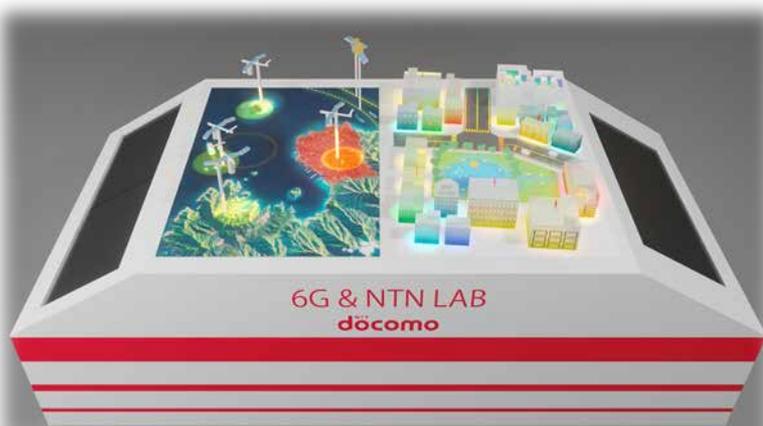
HAPS Simulator



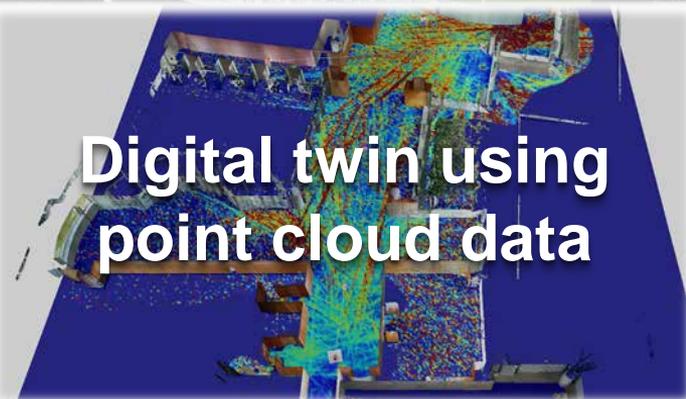
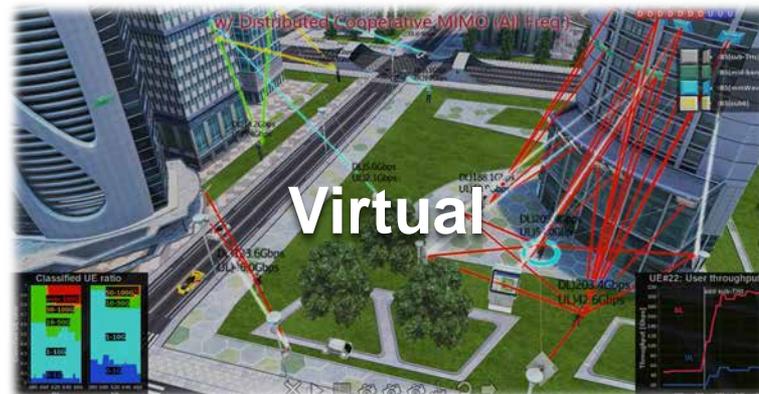
6G and NTN Diorama

Demonstrations of 6G Technologies

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6G and NTN Diorama



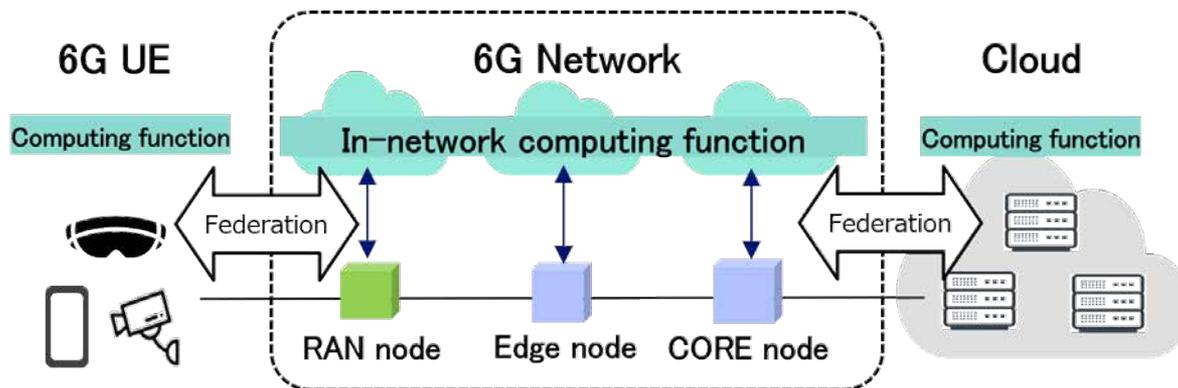
6G Simulators

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4. DOCOMO's 6G Use Cases

1. In-Network Computing

Multi-access Edge Computing (MEC) Enhancement

- Distributed computing
- Federation with user equipment (UE) and cloud edge



*In-Network Computing demonstration is exhibited at Nokia booth in hall 3.

2. Network Automation

- Intent Driven Management
- Digital Twin
- End-to-End Orchestrator



In-Network Computing demonstration

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Private
Arena

In-Network Computing

Nokia
Core SaaS

Federation

ISAP
Platform

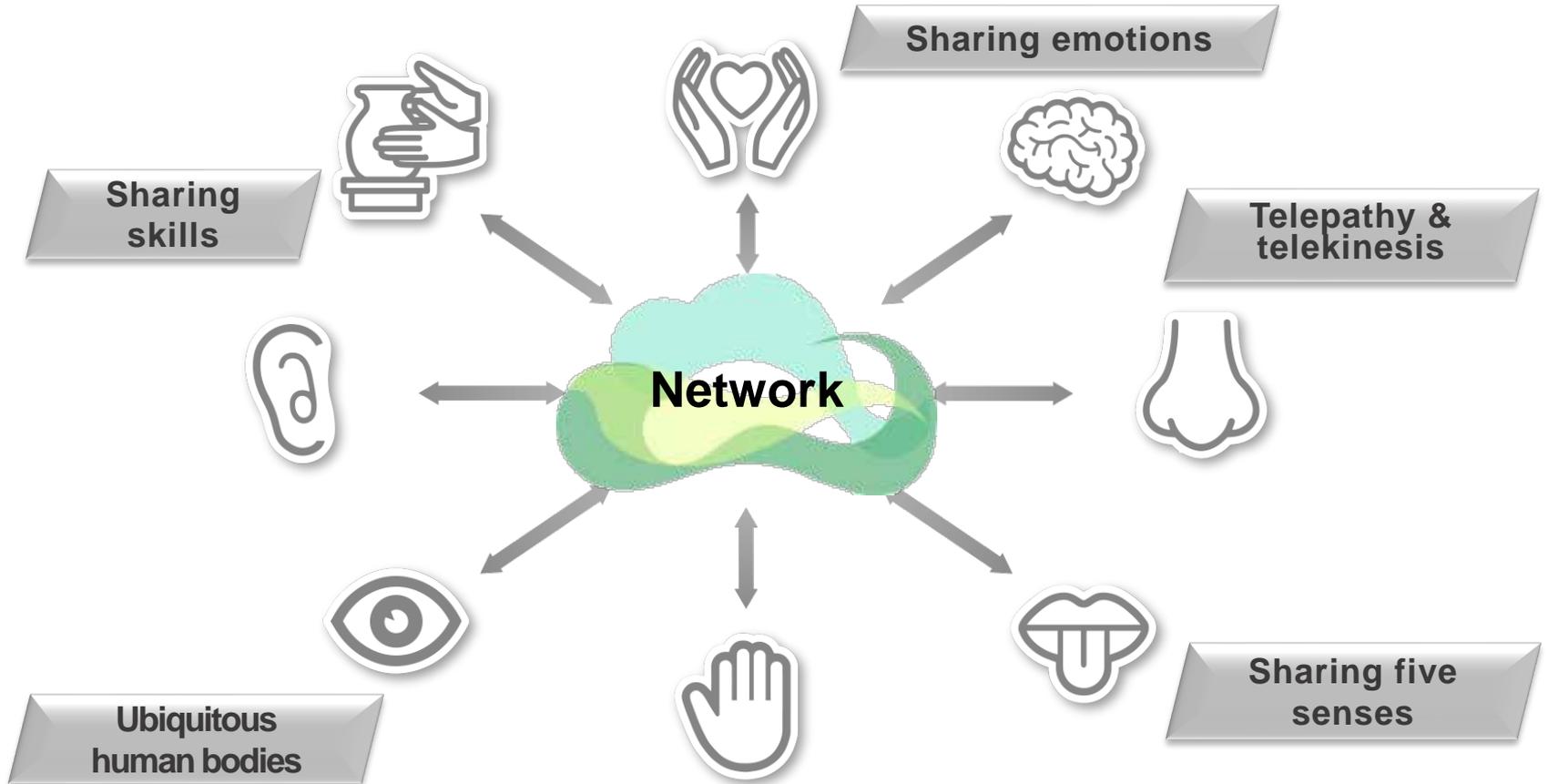
In-Network Service
Acceleration Platform)

@Nokia booth in hall 3 stand 3A20

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4. **DOCOMO's 6G Use Cases**

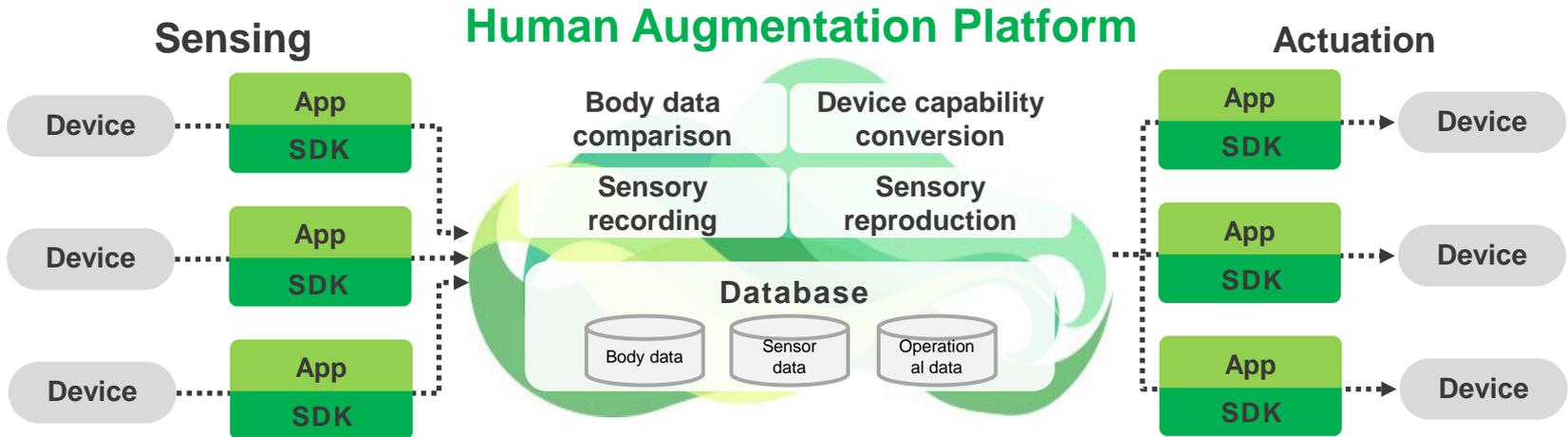
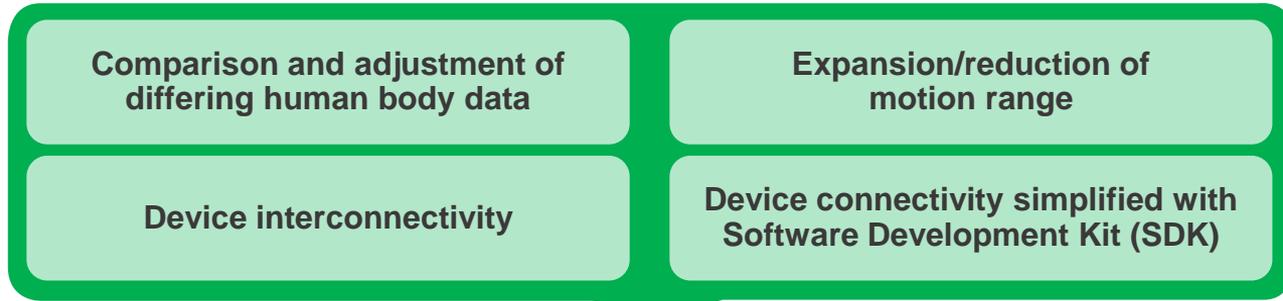
Human Augmentation via 6G

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Human Augmentation Platform, “FEEL TECH”

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Motion Sharing (Learning instruments)



Sense of Touch



Tea Making Robot



FEEL TECH Demonstrations at MWC2024

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FEEL TECH ANIMAL



Experience realistic haptic sensations in metaverse

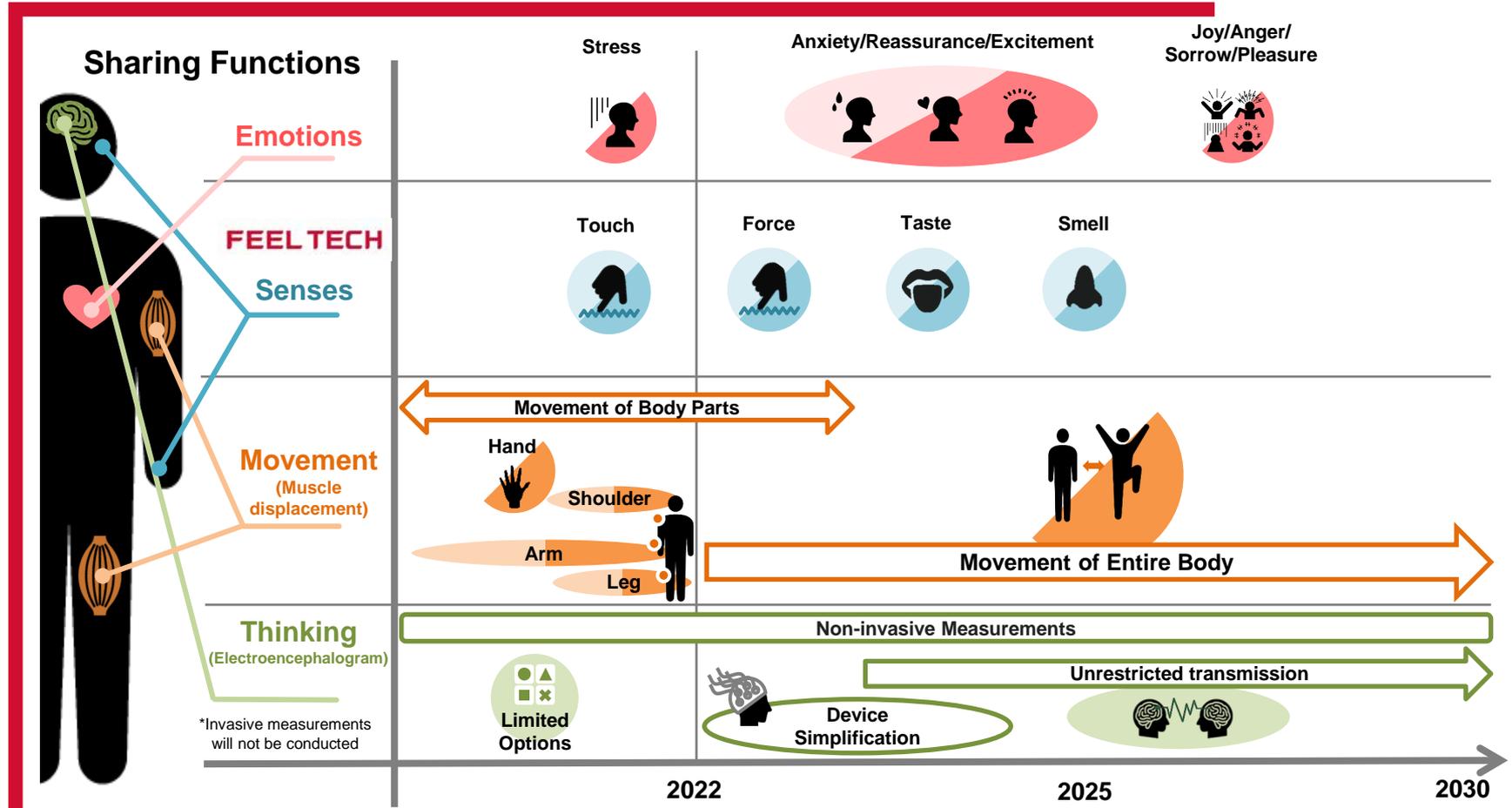
FEEL TECH BAR



Experience taste sharing in a bar-like setting

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A Vision of the Future with DOCOMO's 6G

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docomo



^{NTT}
docomo

The image features the NTT docomo logo in a dark red color. The logo consists of the letters "NTT" in a small, sans-serif font positioned above the word "docomo" in a larger, bold, lowercase sans-serif font. The background is white, and the logo is centered horizontally. There are decorative red lines and a solid red block at the bottom of the page.