

XGMF Overview and 6G-Related Projects

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CSO of NTT DOCOMO, Inc.

XGMF Launched



5G Mobile Communications
Promotion Forum (5GMF)

Beyond 5G Promotion
Consortium (B5GPC)

Incorporated

From April 1, 2024

XG Mobile Promotion Forum
(XGMF)



<https://xgmf.jp/en/>

Co-chair

Prof. MORIKAWA, Hiroyuki (The UNIVERSITY OF TOKYO)

Prof. NAKAO, Akihiro (The UNIVERSITY OF TOKYO)

Number of members: 193 (as of June 18, 2025)

MoU: Memorandum of Understanding
LOI: Letter of Intent

22 Organizations have concluded the MoU



5G Alliance for Connected Industries and Automation

5G ACIA

WIRELESS WORLD
RESEARCH FORUM

WWRF

i 5G f

INDONESIA 5G FORUM

Indonesia 5G Forum

IMT-2020

*IMT-2020(5G) Promotion Group



5GTR Forum



NBCT



5GAA (LOI)



MTSFB



FLEXIBLE FACTORY
PARTNER ALLIANCE

FFPA



IMT-2020(6G) Promotion Group



6G Forum



Open6G



6G Flagship



6G Platform Germany



Bharat 6G Alliance



Institute for Information Industry(III)



*5G Forum



*telebrasil



TNO



Next G Alliance



*6G-IA

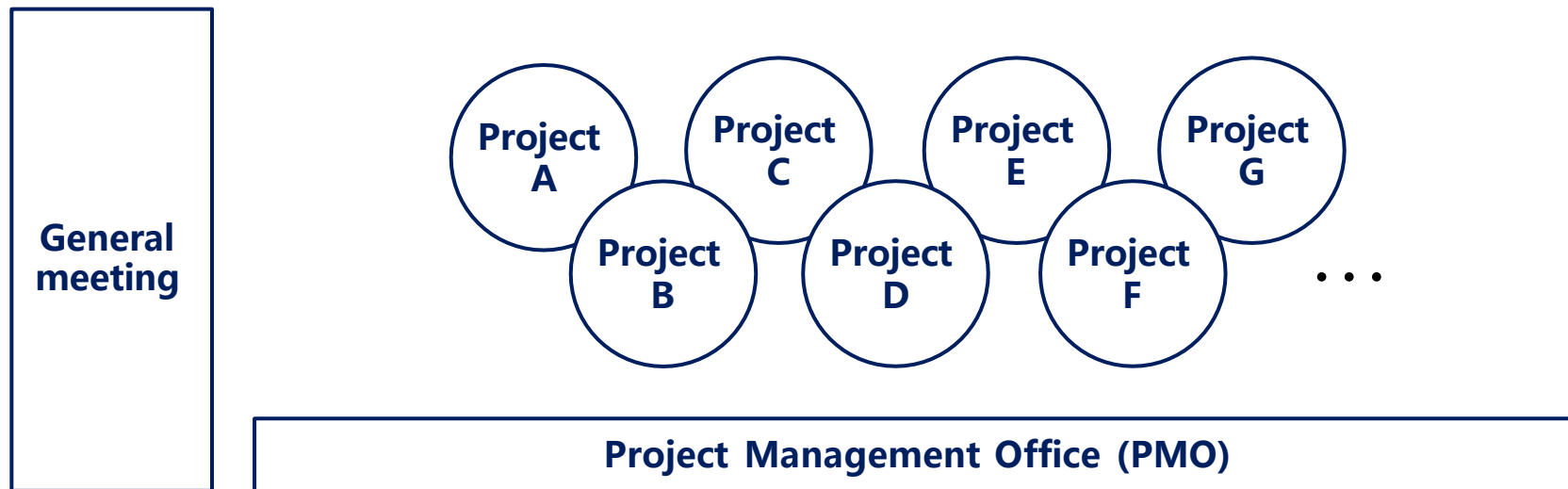


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1 Organization is expected to conclude the MoU



- **Project** : Unit of activity established based on XGMF member proposals for each mission
- **The Project Management Office (PMO)** : Supports project activities and makes decisions on general Forum management matters



★General meeting: Decision-making body for important matters (business plans, income and expenditure accounts, election of directors, etc.)

Currently 20 projects on 6G, mmWave, Local 5G, NTN, verticals, ...

 NTN Promotion Project Leader: TOYOSHIMA, Morio NICT	 6G Promotion PJ Leader: NAKAMURA, Takehiro NTT DoCoMo	 Planning for a city-sized large-scale living laboratory Leader: NISHIMURA, Hiroki, NEC	 Creation of 5G × OT business use cases for industry Leader: ISHII, Takanori SOFTBANK Corp.
 6G Network Architecture Project Leader: ISOBE, Shinichi, NTT DoCoMo	 6G Radio Technology Project Leader: OHTSUKI, Tomoaki Keio University	 Terahertz Wave Wireless Technology Project Leader: HOSAKO, Iwao NICT	 XG-Supply Chain Management Project Leader: NATSUME, Shinobu Gems Co., Ltd.
 StarNet Earth Leader: TAKAHASHI, Madoka NTT, Inc.	 Agriculture × XG Project Leader: KANO, Kayo ON BOARD Co., Ltd.	 Local 5G Licensing Process Shortening Project Leader: MASHIYAMA, Daishi NTT EAST, Inc.	 Space-Time Synchronization Project Leader: IDO, Tetsuya NICT
 ODAIBA IX Core Leader: IWANAMI, Gota INFOCITY, Inc., NAKAMURA, Takehiro NTT DOCOMO	 The Social Infrastructure in the Decreasing Population Era Co-leader: NAGATA, Satoshi NTT DOCOMO, IIZUKA, Rumi Multimedia Promotion Center, HATAKAWA, Yasuyuki Deloitte Tohmatsu Consulting LLC	 Project for realization of cross-industry orchestration Leader: ISHIZU, Kentaro NICT	 Project on creation of mechanisms for linking technology with social and economic value Leader: HASEGAWA, Fumiki Mitsubishi Electric Corporation
 Space × Ground Use Case Study Project Leader: FUJIMOTO, Koichirou NEC	 Local 5G testbed for smart manufacturing Leader: SAKAMOTO, Yosuke NEC	 OSHIKATSU x 5G (millimeter wave and local 5G) Leader: YOSHII, Daijuro Murata Manufacturing Co., Ltd.	 Next generation telecom issues × Material project Leader: MIMURA, Kenichi National Institute of Advanced Industrial Science and Technology (AIST)

6G-Related Projects



NTN Promotion Project

Leader: TOYOSHIMA, Morio NICT

Subleaders: TSUDA, Yuya SOFTBANK Corp.



6G Promotion PJ

Leader: NAKAMURA, Takehiro NTT DoCoMo

Subleaders: KISHI, Yoji KDDI Research
Kashima, Tsuyoshi Ericsson Japan
SHIROTA, Masakazu Qualcomm Japan

Advisor: NAKAO, Akihiro The University of Tokyo



6G Network Architecture Project

Leader: ISOBE, Shinichi, NTT DoCoMo

Subleaders: KUWABARA, Takashi FUJITSU
TAKAHASHI, Hideaki Nokia Solutions and Network Japan

Advisor: NAKAO, Akihiro The University of Tokyo



6G Radio Technology Project

Leader: OHTSUKI, Tomoaki Keio University

Subleaders: SUYAMA, Satoshi NTT DOCOMO
KANNO, Issei KDDI Research



Terahertz Wave Wireless Technology Project

Leader: HOSAKO, Iwao NICT

Subleaders: KAWANISHI, Tetsuya Waseda University
SHOJI, Yozo NICT



Space-Time Synchronization Project

Leader: IDO, Tetsuya NICT

Subleaders: HARA, Motoya NICT
SHIGA, Nobuyasu NICT



Promotion of International Collaboration

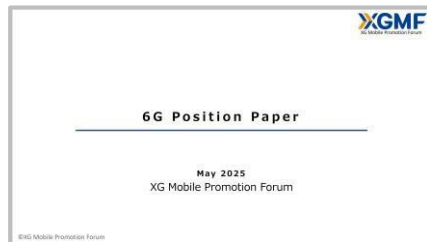
Global Information Exchange
Pre-Standardization Consensus Building
Industry-Academia Global Collaboration



Collaborate with other 6G PJs to promote 6G discussions



Coordinate and discuss topics which are related to multiple 6G PJs, e.g. AI, 6G frequencies



Develop Japan's 6G Position Paper

- Formulate and publish Japan's vision and direction for 6G

6G Position Paper

May 2025

XG Mobile Promotion Forum

With the advancement of next-generation mobile networks, 6G is expected to drive new innovations and bring about transformations in society, industry, and individual lives.

This position paper aims to organize the key technical issues that need to be addressed with 6G, **considering the direction of Japan's future development and anticipated societal challenges**. It seeks to deepen mutual understanding among industry, academia, and government, and to broadly communicate Japan's 6G concept both domestically and internationally.

Through this effort, the goal is to promote sustainable growth and innovation, and to accelerate discussions and initiatives toward the realization of next-generation mobile networks.

The direction of Japan's future development

Here are the items considered important regarding the direction of Japan's future development, to which mobile networks can particularly contribute, and the direction of the evolution of mobile networks, along with the customer value they realize.

Direction of future development and evolution	Customer values
Advanced mobility	MaaS (Mobility as a Service), Automation of transportation infrastructure (automobiles, railways), Improvement of user communication experience while on the move
Promotion of the content industry	Advancement on the consumer side, such as AR/XR, Advancement on the production side (e.g., wireless production studios, remote editing)
Advancement of primary industries	Smart agriculture, smart fisheries, smart forestry, etc.
Development based on AI	Platforms for utilizing AI, AI-native networks, etc.

On the other hand, there are also numerous societal challenges. Below are the priority areas where mobile networks are expected to contribute to their resolution, along with the customer value to be realized in addressing these challenges.

Societal challenges	Examples of customer value for problem solving
Population Decline Labor Shortage Low Productivity	Manpower saving, Remote Monitoring, Remote Control Automation, Industrial Digital Transformation
Environmental Impact of Industry, Sustainability	Industrial Optimization (e.g., through data collection and analysis) Smart Logistics, Utilization of IoT and AI
Disaster Resilience	Disaster Prevention, Disaster Mitigation (e.g., Emergency Alerts, Damage Prediction, Evacuation Information) Recovery, Resilient Infrastructure
Maintenance of Infrastructure in Depopulated Areas	Mobility and Logistics Optimization (e.g., Autonomous and Remote-Controlled Buses) Infrastructure Monitoring
Maintaining Urban Functionality in Densely Populated Cities	Enhancement of Urban Functions Sufficient Communication Capacity Traffic Congestion Mitigation Efficiency in Infrastructure Development and Maintenance
Shortage of Medical Resources, Healthcare Access Disparities	Remote Medical Consultation, Telesurgery
Aging Population (Healthy Life Expectancy)	Preventive Medicine, Health Management

Future directions

Advanced mobility

Promotion of the content industry

Advancement of primary industries

Development based on AI

Social issues

Population decline, labor shortage,
low productivity

Environmental impact of industry,
sustainability

Disasters, resilience

Infrastructure maintenance in
depopulated areas

Maintaining functionality in
overcrowded cities

Shortage of medical resources and
disparity in access

Aging population (healthy life
expectancy)

Technology Value

High speed and large capacity

Low latency and low jitter

Massive connectivity

High reliability

Mobility

Low power consumption

Coverage area improvement

Resilience

Technologies

Advanced/Distributed M-MIMO

Air interface enhancement by AI

Sensing

cmW/mmW

SubTHz

All Photonic Network

AI/Compute/Network Fusion

NFV/Cloudification/SRv6

NTN/HAPS



Beyond 5G Activities in Europe

With additional flashlights on B5G US activities

July 14th, 2025

B5G system activities

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Thank you for your attention

