



New Educational Experiences based on XR and a Digital Twin Platform

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XR: eXtended Reality

ITU Workshop on the "Future of Television for the Americas" (17 Nov. 2023 Bogotá, Colombia)
Session 4: Unlocking Immersive Experiences: AI, Extended Reality, and the Future of Broadcasting

Tomorrow, Together



■ Introduction

- Leading telecommunication service provider in Japan.
- Comprehensive mobile and fixed-line communications services, including the CATV business.
- Over 58 million customers via brands "au", "UQ mobile", and "povo".

■ Expansion into Life Design Business.

■ Creating Smart Infrastructure: IoT and open innovation.

■ Global Reach: ICT business under the “TELEHOUSE” brand.

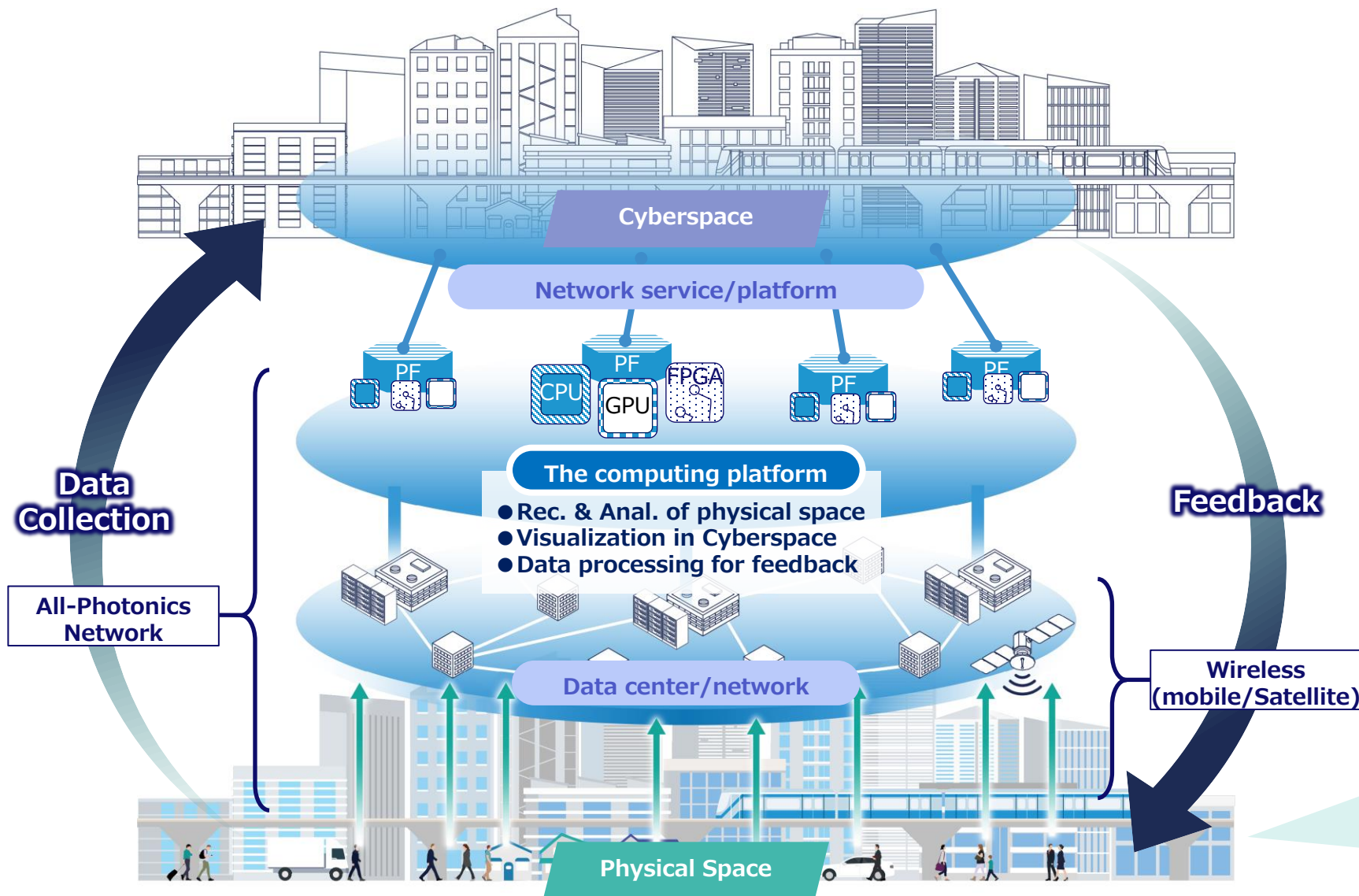
[KDDI CORPORATION--Tomorrow, Together](https://www.kddi.com/english/)

<https://www.kddi.com/english/>

Value Creation through Communication and Digital Twin

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KDDI is driving R&D on the computing platform of DT to enable value creation.



Three use cases of R&D to enable value creation

Smart City



Real-time control for improved efficiency and convenience.

Health care



Medicine as an App.

Sports DX



Multisensory feedback.

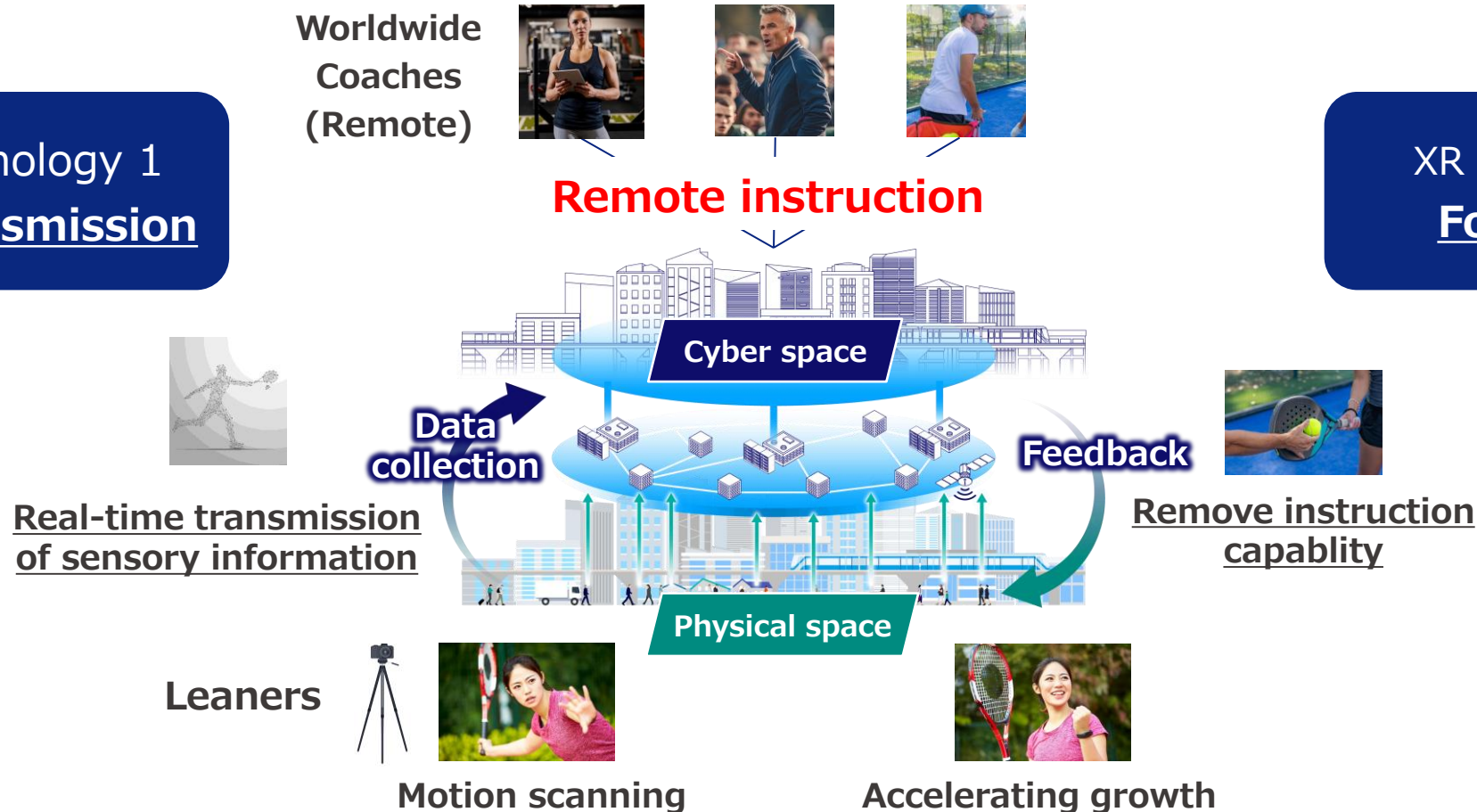
Digital transformation in sports

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In remote sports instruction, multisensory feedback detailed tips that are challenging to convey through words alone, fostering tailored growth for individuals.

XR Key Technology 1
3D Mesh Transmission

XR Key Technology 2
Force feedback



KT1. Conveying human motions through 3D mesh transmission

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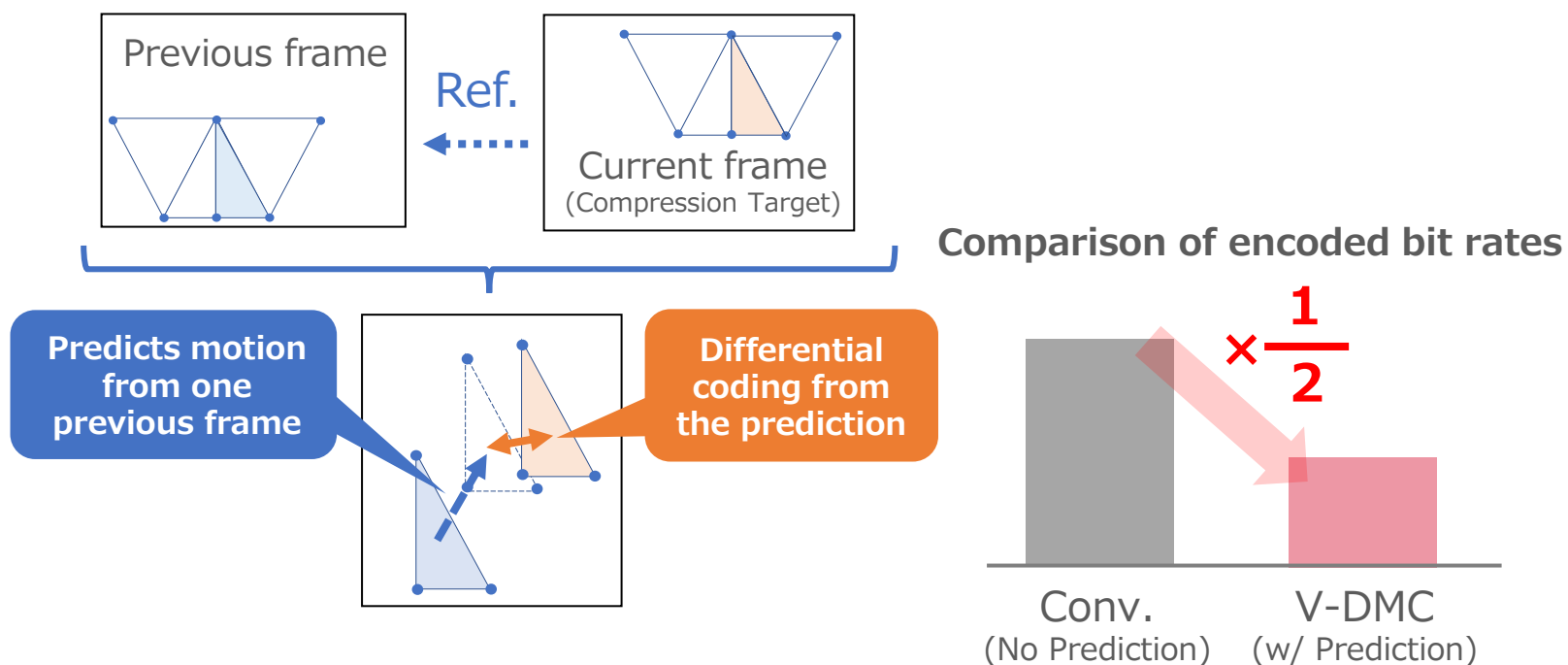
We have developed technology for highly efficient compression of dynamic 3D mesh data and real-time decoding and playback on smartphones.

3D mesh



- ✓ Describes 3D objects as meshes
- ✓ Used in games, design, and CG fields

Efficient compression by V-DMC (Video-based Dynamic Mesh Coding)

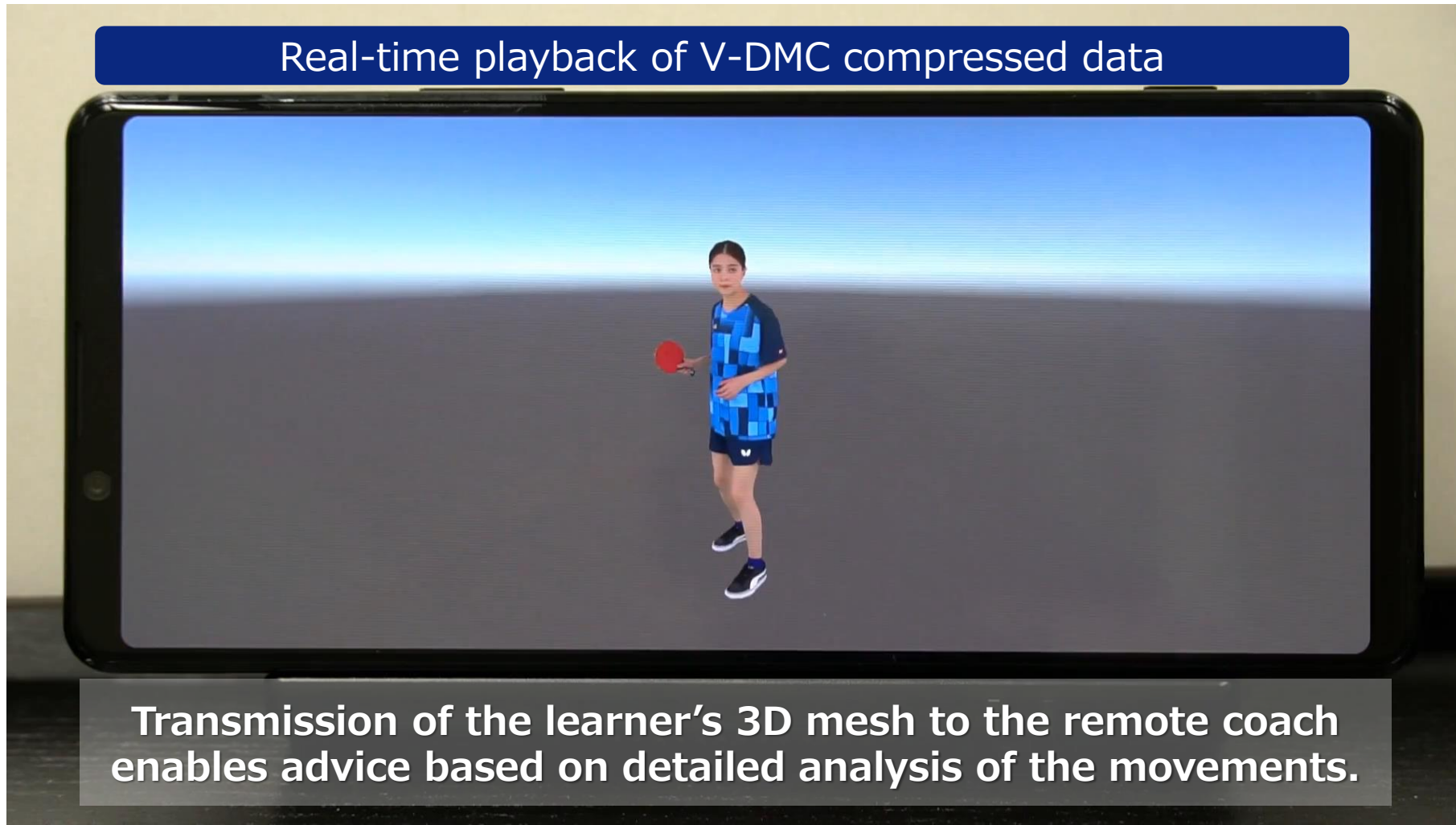


<https://news.kddi.com/kddi/corporate/newsrelease/2023/10/23/7022.html>

KT1. Conveying human motions through 3D mesh transmission

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We have developed technology for highly efficient compression of dynamic 3D mesh data and real-time decoding and playback on smartphones.



KT2. Intuitive force feedback for transfer of tips and technique

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We have developed ungrounded, compact force feedback technology that can be integrated into tools such as sports equipment and musical instruments.

Developed force feedback technique

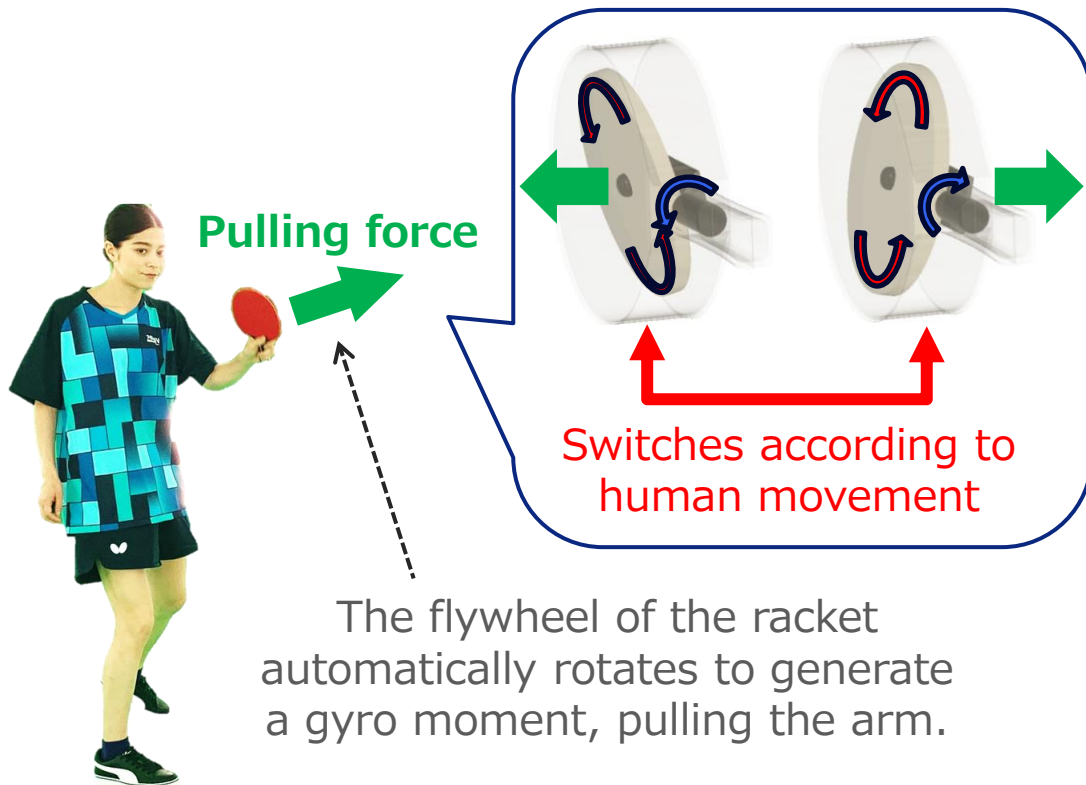
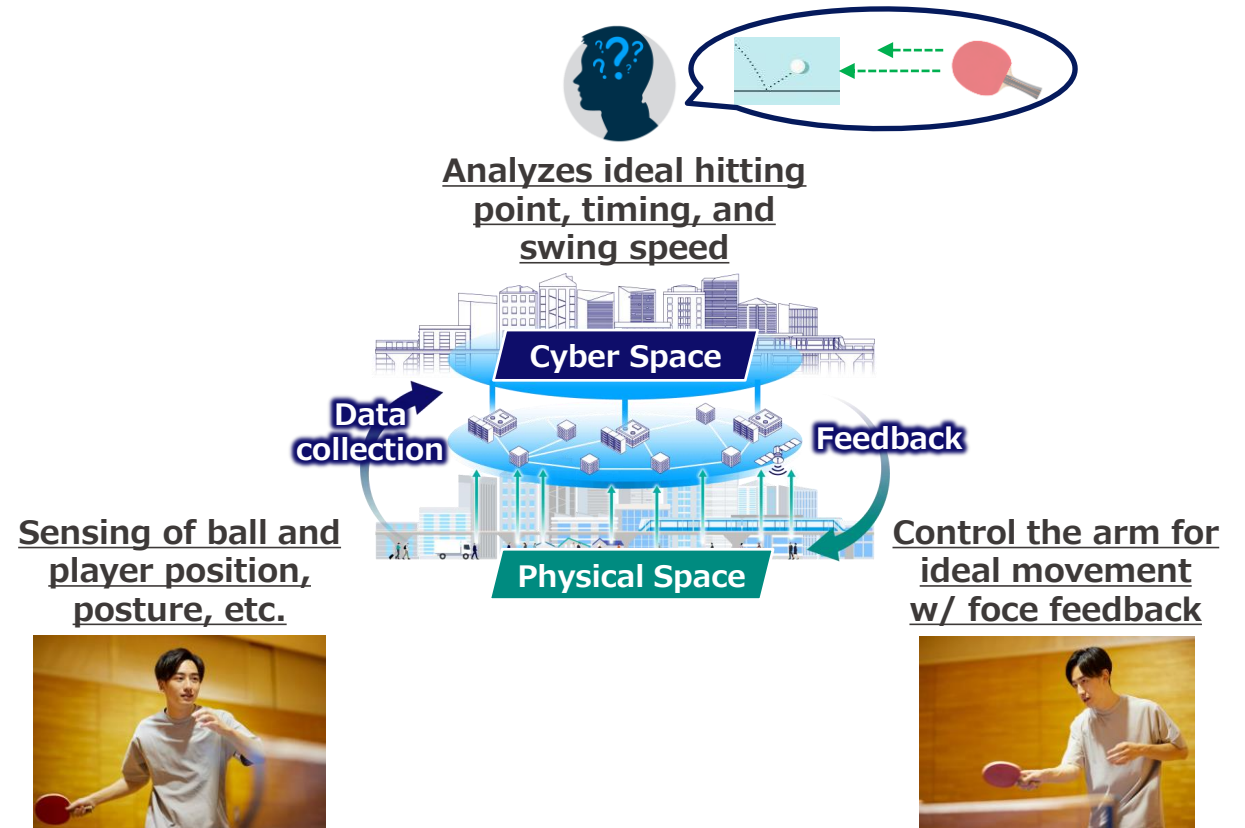


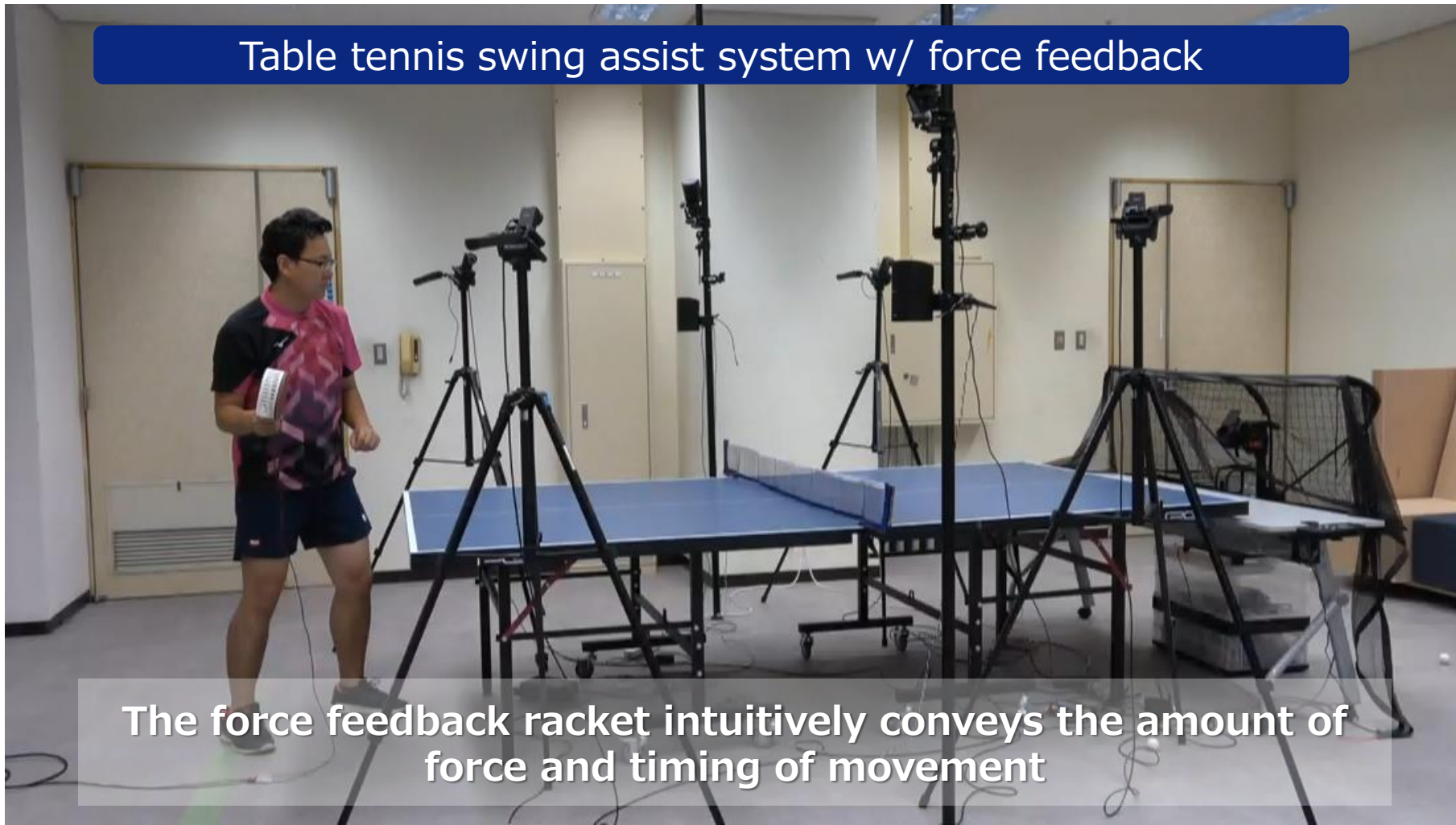
Table tennis swing assist system w/ force feedback



KT2. Intuitive force feedback for transfer of tips and technique

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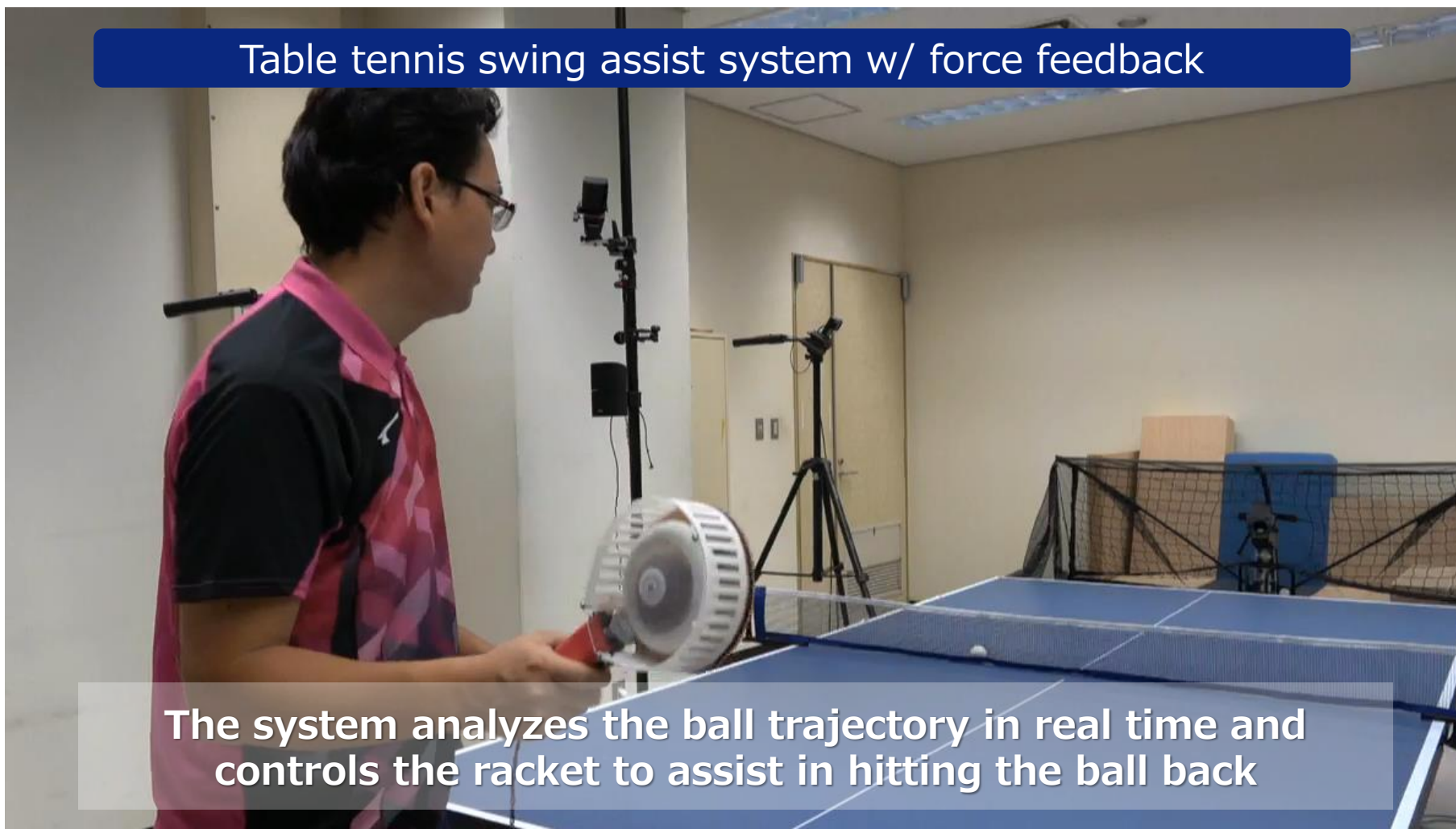
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KT2. Intuitive force feedback for transfer of tips and technique

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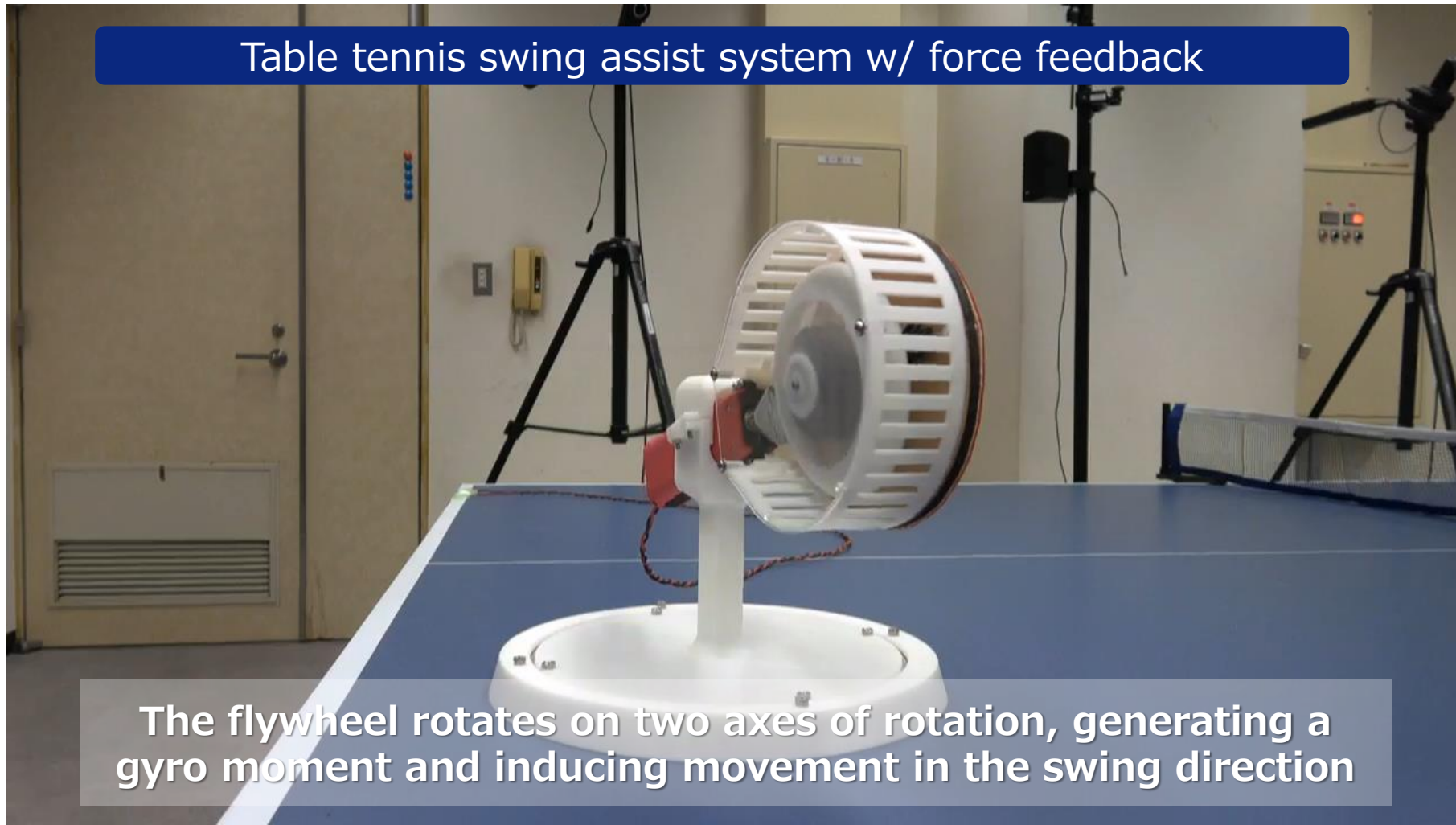
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KT2. Intuitive force feedback for transfer of tips and technique

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We have developed ungrounded, compact force feedback technology that can be integrated into tools such as sports equipment and musical instruments.



- One of the use cases, sports DX, is introduced based on XR Tech.
 - The new educational experiences.
 - DX is accelerated by Digital Twin Platform.
- Two XR key technologies are demonstrated;
 - 3D mesh transmission and playback on smartphone, and
 - Force feedback on table tennis situation.
- International standardization is helpful to promote the DX.



Acknowledgments

- A part of these research results were obtained from the commissioned research (No.06801) by National Institute of Information and Communications Technology (NICT), Japan.
- A part of this work was supported by “Strategic Information and Communications R&D Promotion Programme (SCOPE)” of Ministry of Internal Affairs and Communications of Japan, Grant no. JPJ000595.