Working Group 1

Expanding human potential toward a society in which everyone can pursue their dreams

Chair: Dr. Miwako Doi, Sub-Chair: Dr. Hiroaki Kitano

The Moonshot [Area],[Vision] for setting MS [Goal] candidate

Area   Turning the aging society into the innovative and sustainable society by harnessing diversity through techno-social transformation.

Vision   Inclusive Society: anyone can pursue their dreams. Society without health anxiety:
everyone can enjoy life until 100 years old.

[Examples of MS Goal candidate to be used as reference]
1) Create and deploy "Cyborg technology" to augment human capability
2) Fully ubiquitous and inclusive mobility
3) Create and deploy advanced avatars enabling most daily life can be done through avatar
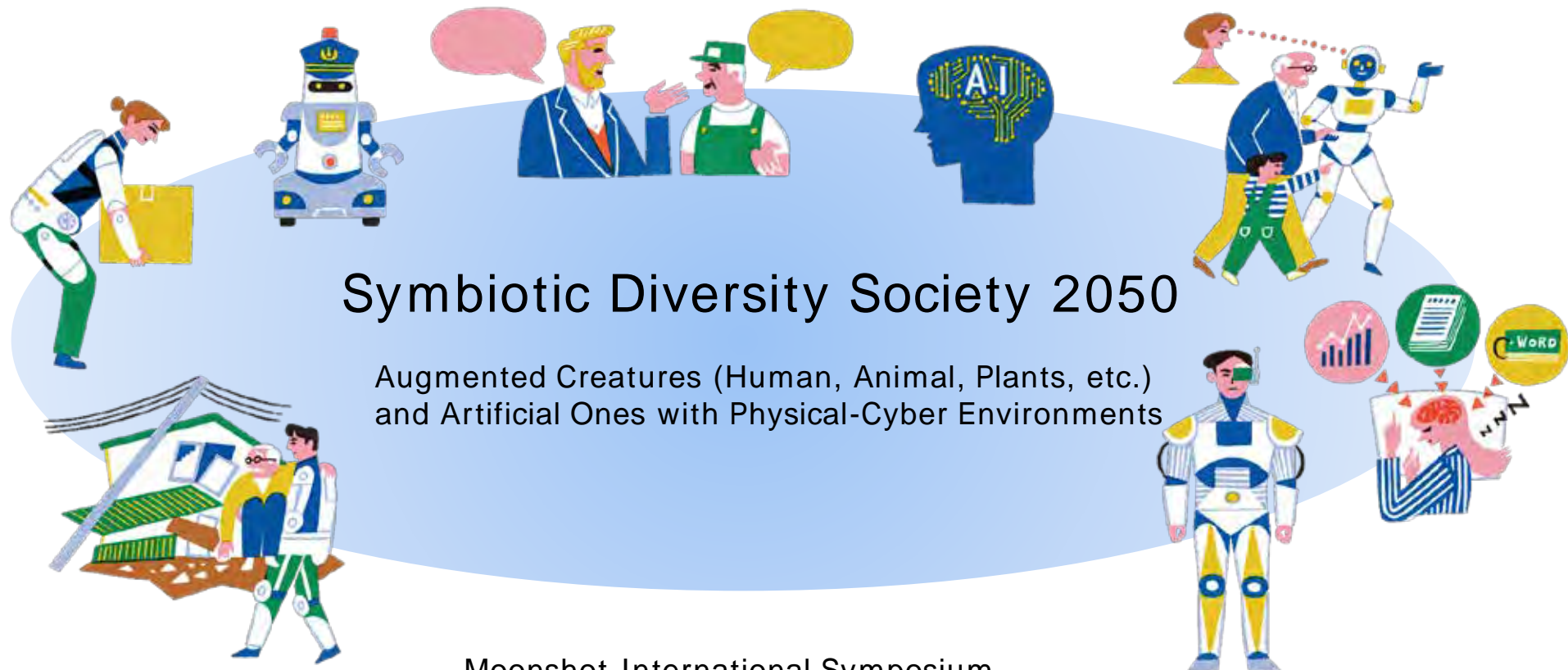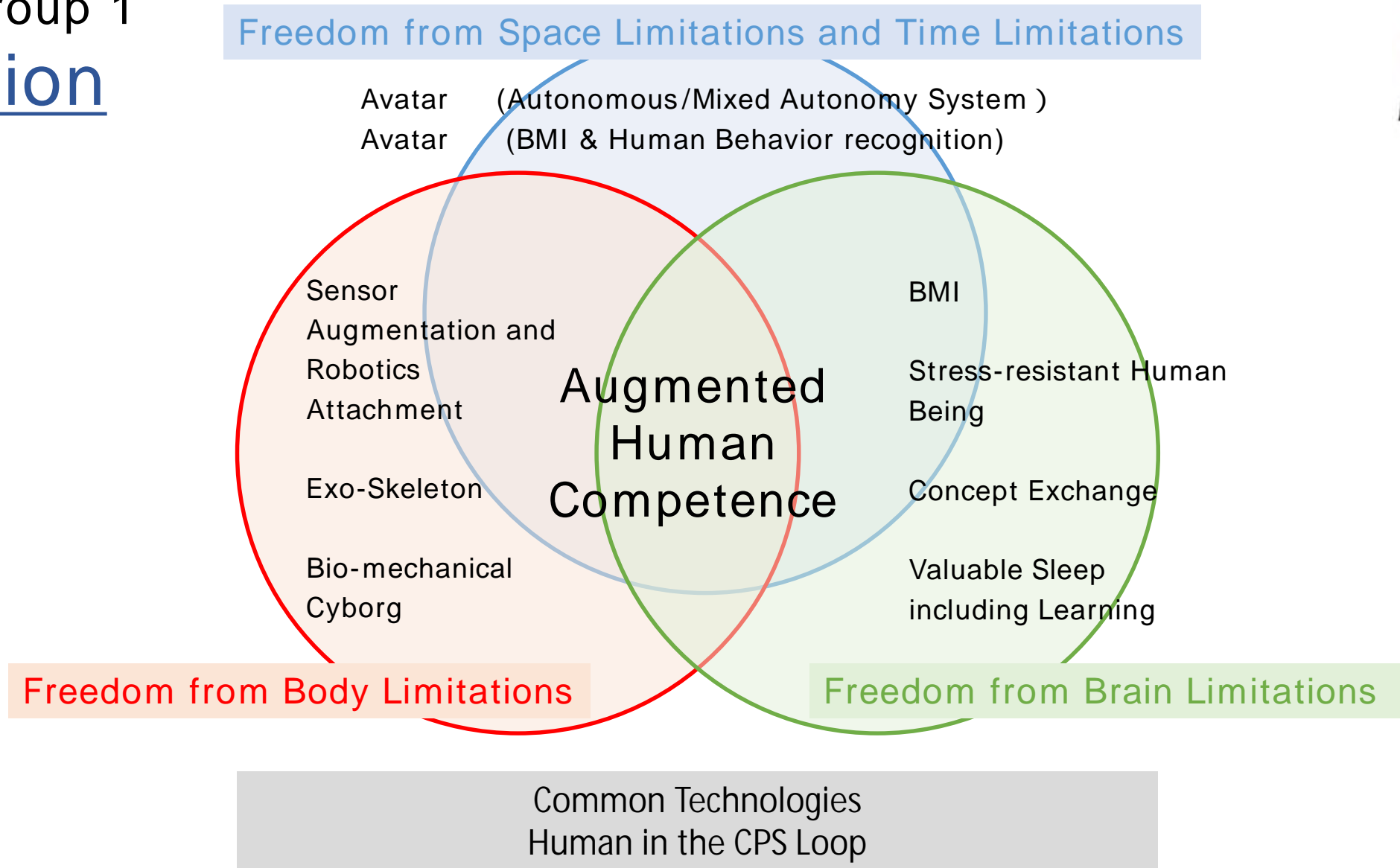6) Universal medical access at the global scale
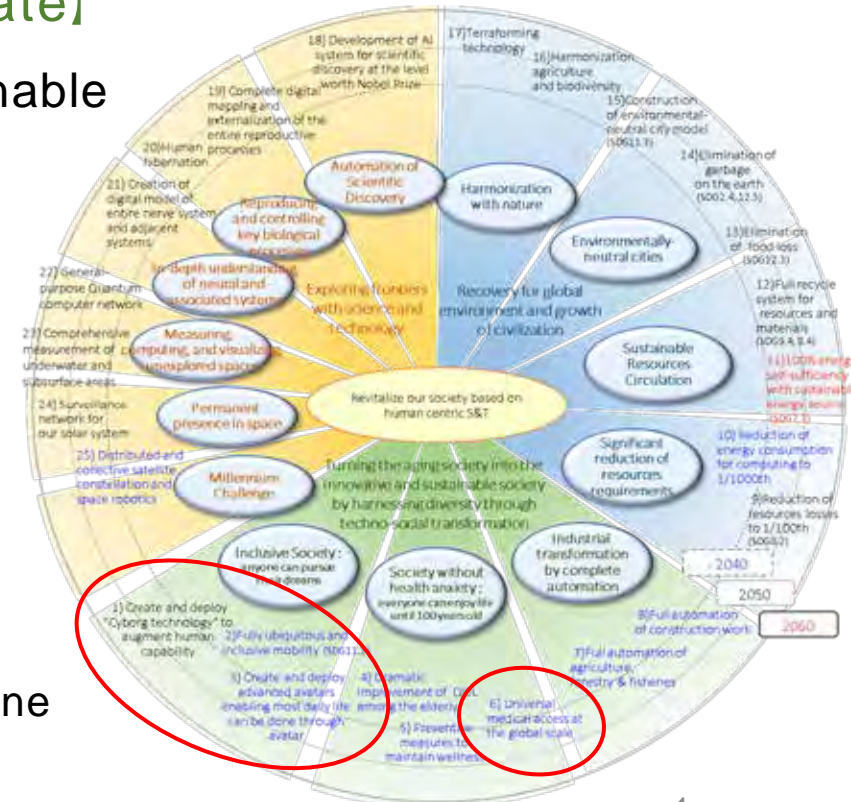
Working Group 1
Discussion

MS Goal candidate

By 2050, realization of a society in which human beings can be free from their limitations of body, brain, space, and time with harmonious empowerment.

Symbiotic Diversity Society 2050

Augmented Creatures (Human, Animal, Plants, etc.) and Artificial Ones with Physical-Cyber Environments

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Discussion

MOONSHOT
RESEARCH & DEVELOPMENT PROGRAM

Freedom from Space Limitations and Time Limitations

Avatar   (Autonomous/Mixed Autonomy System
Avatar   (BMI & Human Behavior recognition)

Sensor Augmentation and Robotics Attachment

Exo-Skeleton

Bio-mechanical Cyborg

Augmented Human Competence

BMI

Stress-resistant Human Being

Concept Exchange

Valuable Sleep including Learning

Freedom from Body Limitations

Freedom from Brain Limitations

Common Technologies
Human in the CPS Loop

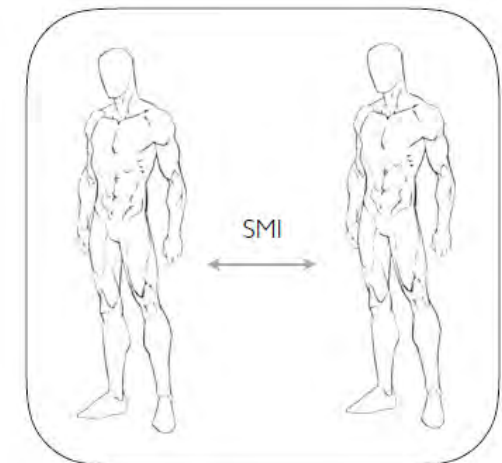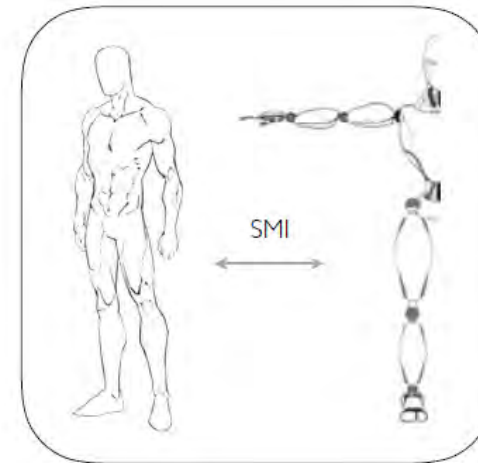Moonshot International Symposium

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Freedom from Body Limitations
Prof. Inami, Prof. Prattichizzo, Dr. Kitano

Cybernetic Avatar (C-Avatar)
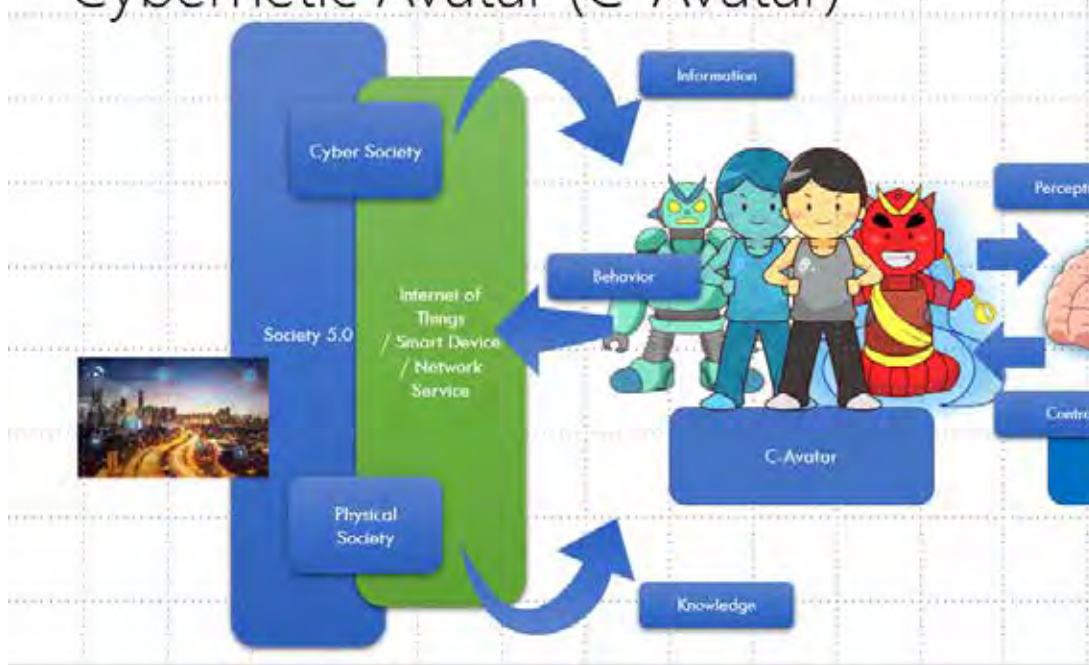
Augmenting Human Body with Robots+ and Humans+
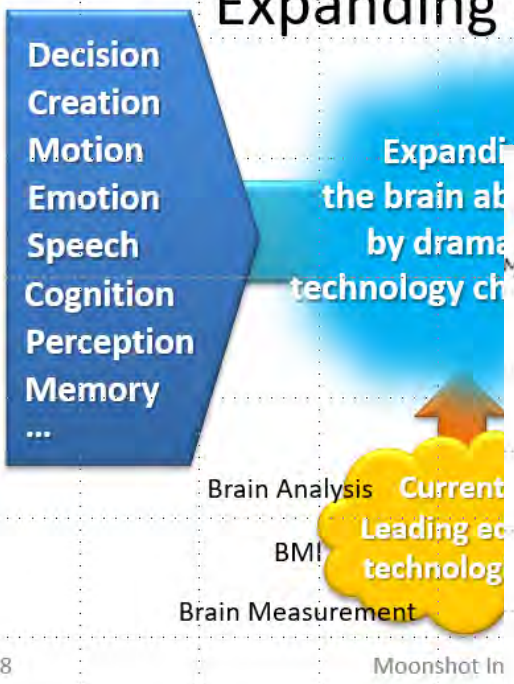
SMI - Sensori-Motor Interface

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Discussion

Freedom from Brain Limitations
Mr. Kanoh, Prof. watan...

Freedom from the limitation of brain
Expanding of the brain abilitie

Decision
Creation
Motion
Emotion
Speech
Cognition
Perception
Memory
...

Expandi
the brain ab
by drama
technology ch

Brain Analysis   Current

BMI   Leading ec
technolog

Brain Measurement

2019/12/18   Moonshot In

Development of online MRS neurofeedback

Control the concentration of GABA in a targeted brain region

...orize more
...s global perspective

Q1)
"Expanding of the brain abilities" means

Decision
Creation
Motion
Emotion
Speech
Cognition
Perception
Memory
...

BRAIN FUNCTIONS/ABILITIES

New Brain Functions?

C-Avatar Capitalism for Diversity and Inclusion

C-Avatar Life

If only one teleoperator could control many C-Avatars, May human brain acquire new functions?

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Freedom from Space Limitations and Time Limitations
Dr. Kitano, Dr. Locke, Prof. Inami
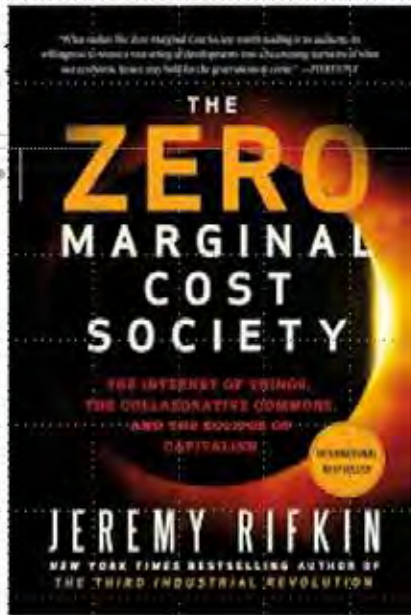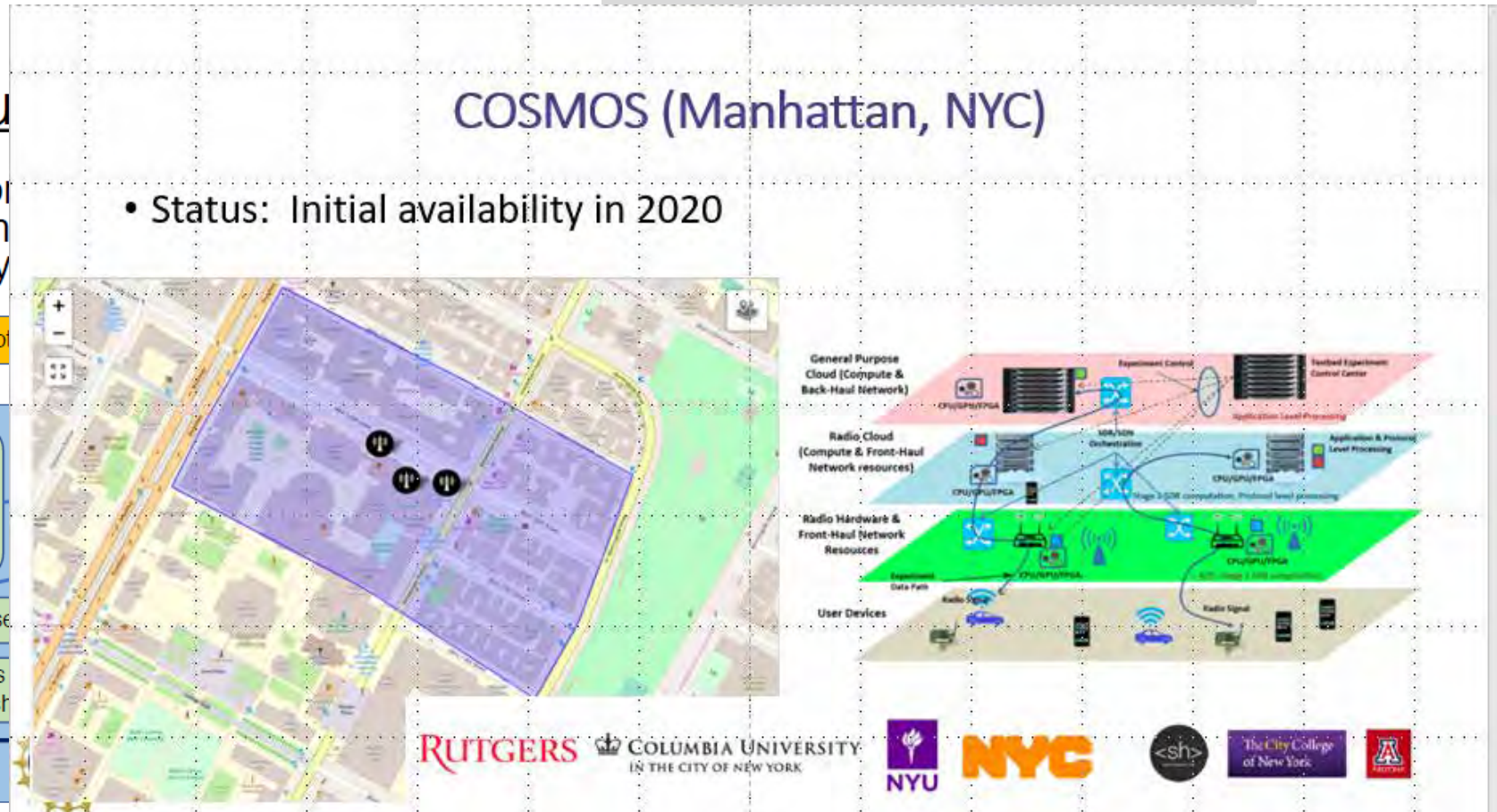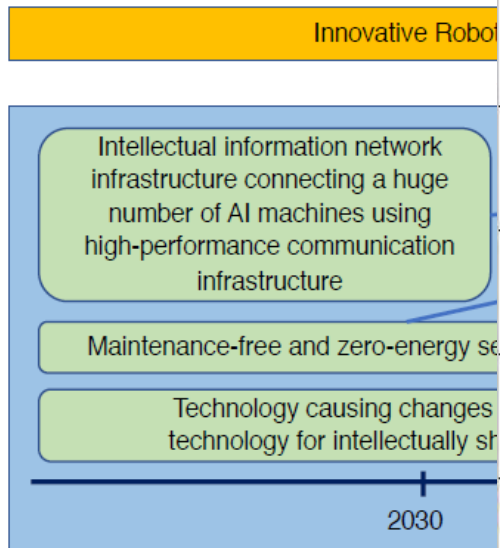
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Discussion

Common Technologies Human in the CPS Loop
Prof. Higashino, Dr. Calvert, Dr. Tokuda

Research Issues for Fu

- What do we need for future co
  technology and cognitive scien
  robotics and avatar technology

Innovative Robo

Intellectual information network infrastructure connecting a huge number of AI machines using high-performance communication infrastructure

Maintenance-free and zero-energy se

Technology causing changes
technology for intellectually sh

2030

COSMOS (Manhattan, NYC)

- Status: Initial availability in 2020

General Purpose Cloud (Compute & Back-Haul Network)

Radio Cloud (Compute & Front-Haul Network resources)

Radio Hardware & Front-Haul Network Resources

User Devices

RUTGERS   COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK   NYU   NYC   <sh>   The City College of New York

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Working Group 1
Conclusion

MS Goal candidate

By 2050, realization of a society in which human beings can be free from their limitations of body, brain, space, and time with harmonious empowerment.

Target

Cybernetic Avatar Capitalism for Diversity and Inclusion
By 2050, develop technologies and infrastructure to carry out large-scale complex tasks using combinations of large numbers of avatars and robots that are teleoperated by multiple persons.

Cybernetic Avatar Life
By 2050, anyone willing shall be able to augment their physical, cognitive, and perceptional capabilities to the level of the best experts of selected domains.

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Conclusion

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