

K.TOYODA LAB.

Common Ground: Where the Real Space and Information Space Overlap

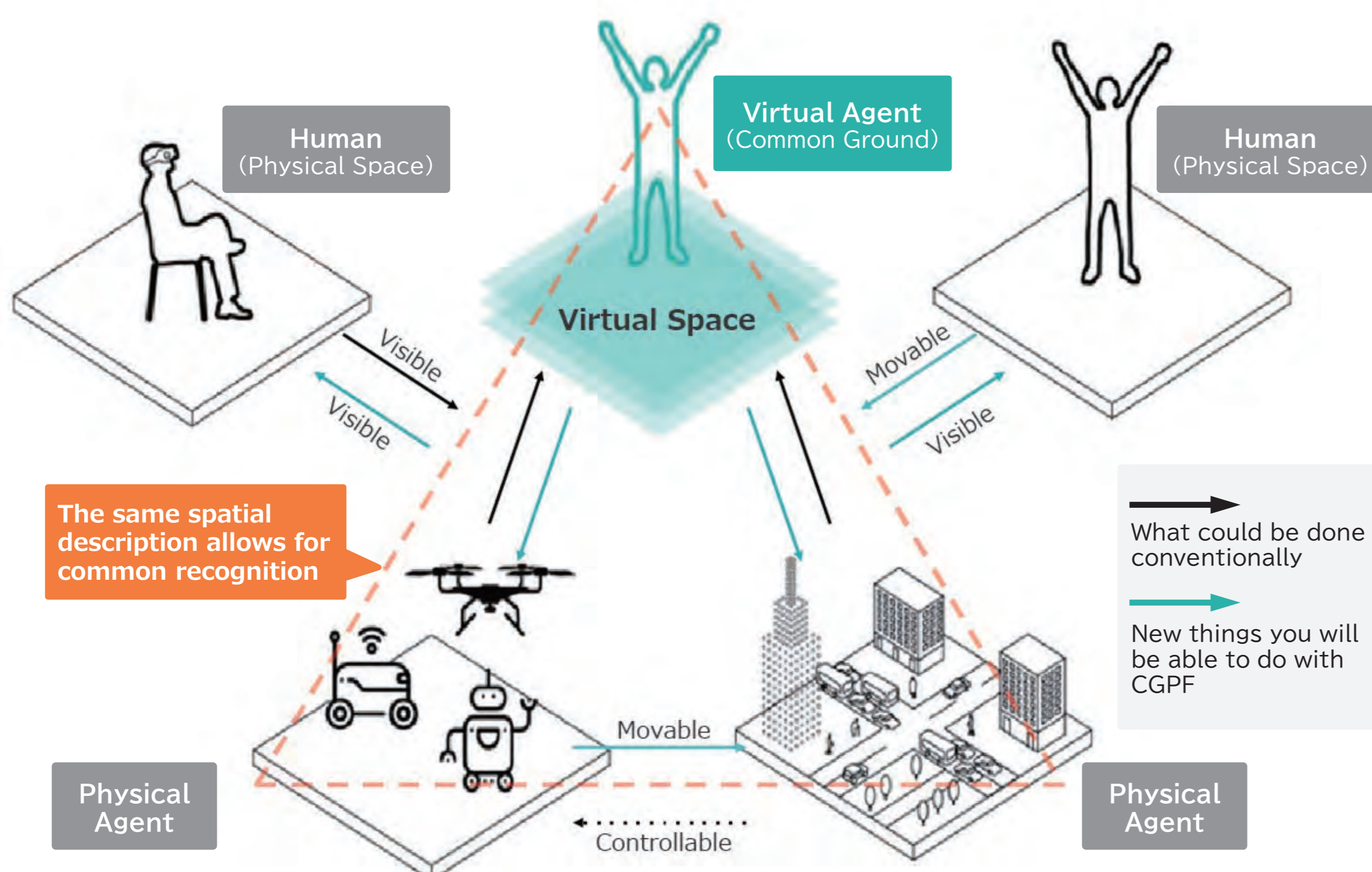


Interspace Research Center

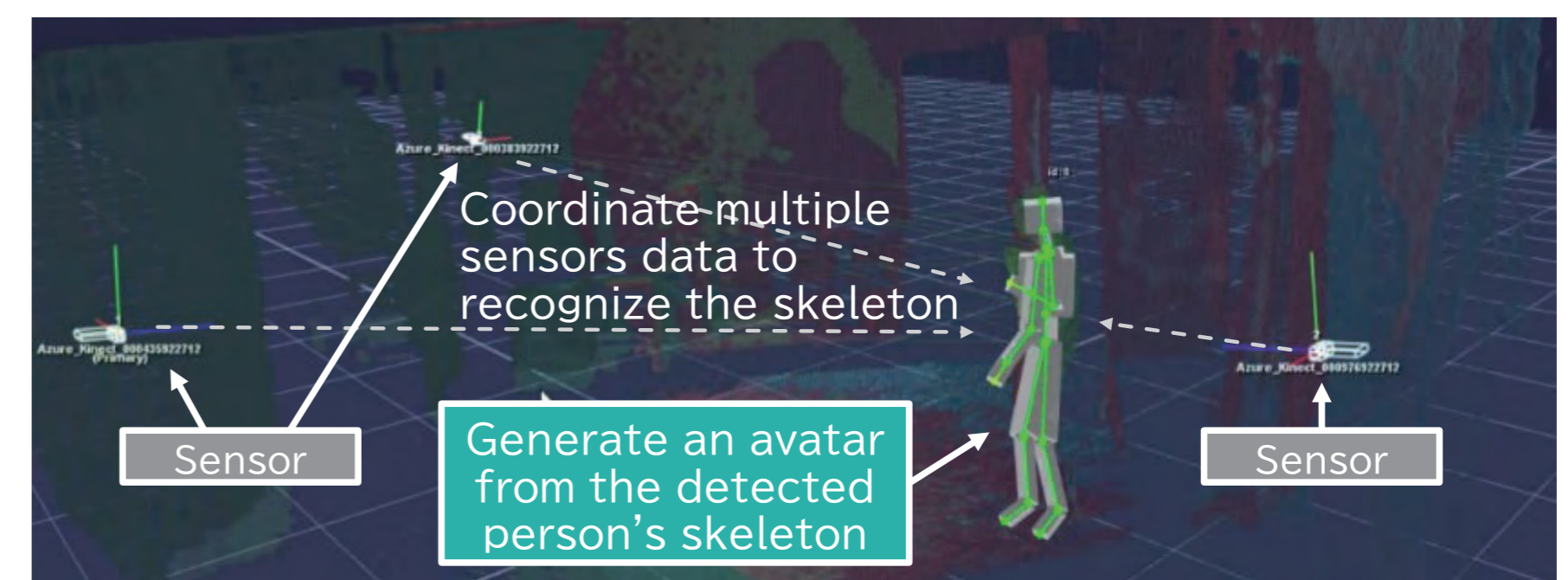
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Common Ground: Where the real space and information space overlap

The Common Ground Platform is a space-mediated cyber-physical collaboration platform that enables real-time, bidirectional information collaboration between people and non-human agents, such as robots and mobility devices. Rather than enhancing the performance of individual agents, the platform enables more agents to benefit from the platform by deploying spatial information distribution systems and sensors that can be shared and used by diverse agents on the environment side. We are also applying online game technologies to verify the linkage of spatial and agent information between multiple physical locations.



Common Ground enables communication between agents and environments, and between remote locations.

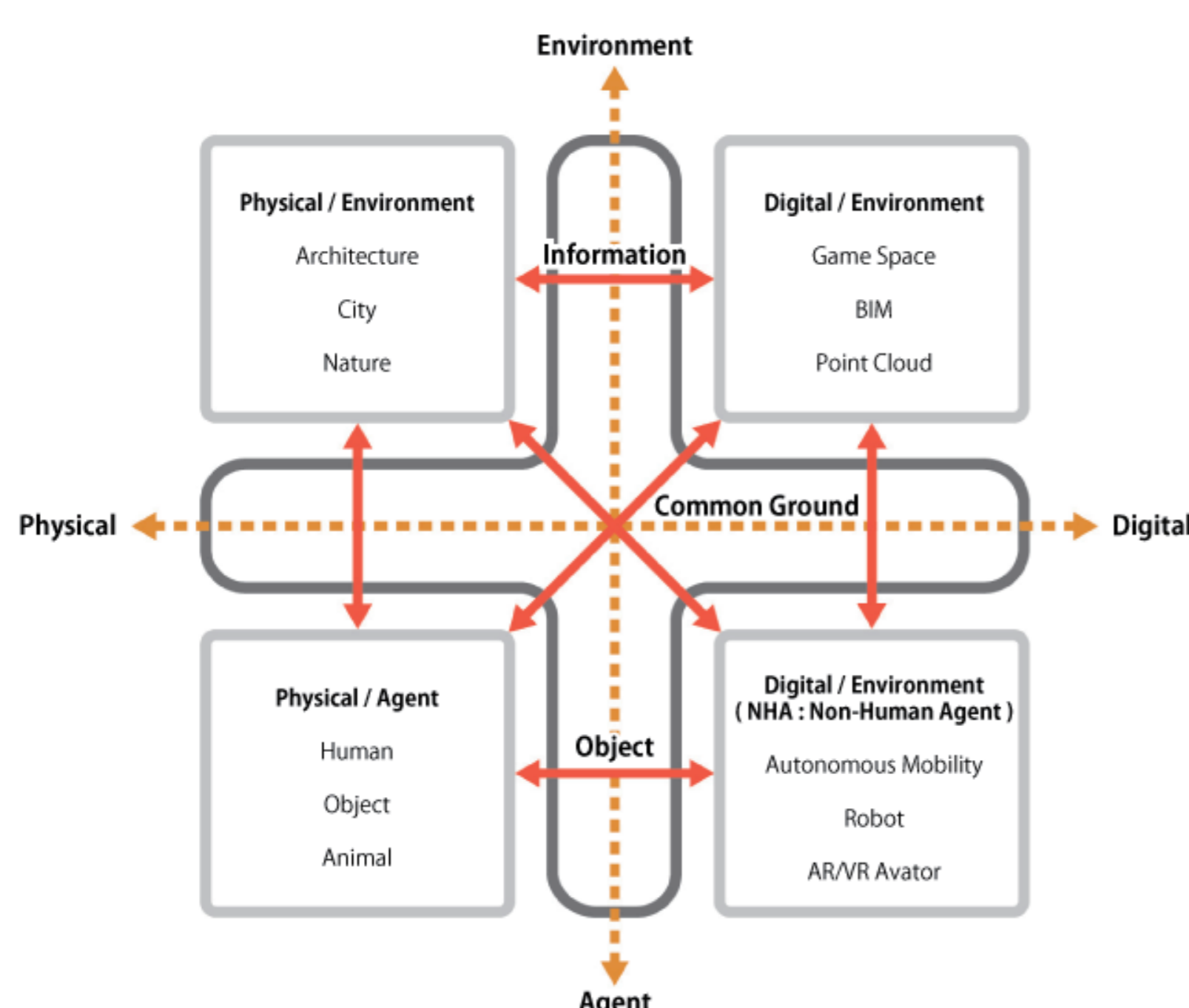


Posture detection using multiple sensors



In the experiment, the participants' avatars and 3D objects of artworks in remote locations were displayed in AR.

City Scale information coordination using Common Ground



If we define the vertical axis as “environment” and “agent” and the horizontal axis as “physical” and “digital”, we can see that information collaboration between the four areas divided by the axes is necessary. The more diverse the environment and agents become, the more types of information collaboration there are, and at the urban scale, the number of collaborations becomes too large to control. Therefore, by implementing a Common Ground in a way that can be recognized from any area, all agents can access each other's information in a standardized way.