NICT (National Institute of Information and Communications Technology)

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01 Company Introduction

The National Institute of Information and Communications Technology (NICT), Japan's only public research institute in information and communications, promotes information and communications technology R&D from a comprehensive perspective, from basic to applied research. Our other missions include aiming to generate innovation by giving back to society with the results of our R&D through cooperation with universities, industry, local governments, and domestic and overseas research institutions.

02 Products Details

The Dome Theater: visualization of how the Beyond 5G/6G world looks like in the 2030s

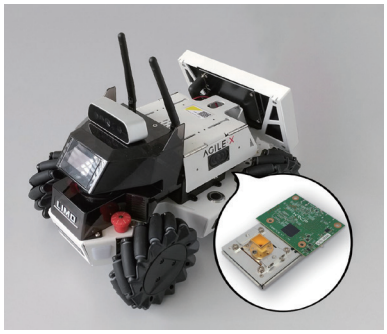
This unique theater takes you to the world in the 2030s when various industries harmonize their technologies in both physical and cyber spaces. In such a future world, which we call the Beyond 5G/6G world, we will enjoy lives filled with new values and enriched and convenient environments.

While riding in a flying car, you will explore the beyond 5G/6G future society. Following a brief introduction of some elemental technologies, the theater tour details the new world comprising new value, new services and the reduction of energy consumption. We will also show you a supply chain in the marine product industry in the future world.

Demonstration of wireless transmission in terahertz-band infrastructure technology

1. Ultra-high-capacity data upload system from a robot car passing through an ultra-spot

An autonomous driving robot car on which a specially designed 60-GHz band ultra-high-capacity transceiver & a camera are mounted very quickly establish a communication link with another transceiver placed on a TV monitor and upload a recorded video file with hundreds Mega Bytes during passing through an ultra-narrow wireless zone, i.e., ultra-spot, which take only less than several hundreds milliseconds.



2. Uncompressed 4K video transmission in terahertz-band

A pair of a 300-GHz transmitter and a 300-GHz receiver demonstrate the uncompressed 4K video transmission. 4K video data from a laptop computer is put on a 300-GHz carrier using the OOK modulation scheme. The modulated 300-GHz radio wave is transmitted via optics lens antennas. The received signal is displayed on a 4K monitor.