The National Museum of Emerging Science and Innovation (Miraikan) (Director, Dr. Mamoru Mohri; address: Aomi Koto-ku Tokyo) will unveil 5 new exhibits on Saturday July 9th, in the Medicine, The Brain, and Robots area. The new exhibits are (1) Virtual Reality Supports Surgical Operations, (2) Robot Assisted Surgery, (3) Brain Machine Interface (BMI), (4) "High-Speed Catching Robot" and (5) Therapeutic Robot "Paro." In addition, we will continue to provide the latest in science and technology and we will also upgrade our exhibits on a regular basis.

The new exhibit appearing at the Medicine area on the 5F "Life Science" Zone will introduce and let visitors experience the latest medical technology. At (1) Virtual Reality Supports Surgical Operations, the latest medical technology, which will reduce the impact on a patient by employing image-guided surgery, will be introduced.

(2) Robot Assisted Surgery is an exhibit, which allows you to actually experience robotic surgery in the abdominal cavity. It introduces the technology of minimally invasive surgery using small incisions that promote early recovery following the patient's operation.

(3) Brain Machine Interface (BMI), which will be exhibited in the Brain area, will introduce the latest technology having tremendous possibilities on improving the quality of life of people with disability by revealing functions triggered by the brain to each organ such as muscles, etc., through the nerves by advanced research in neuroscience.
At the Robot area in the "Innovation and the Future" on the 3F, a new type of robot will be introduced. (4) "High-Speed Catching Robot" was developed aiming to conduct motions at high speed which will go far beyond human ability and will make its appearance as a robot challenging its limitations. Also, (5) Therapeutic Robot "Paro" is a robot which was developed with an emphasis on mutual interaction. You will get to actually come in contact with a robot which will exhibit various reactions generated by touching and talking to it.

The new exhibits, which will be presented this time, are the following 5 items.

- 3F "Innovation and the Future" Zone
  - Robot Area : 4. "High-Speed Catching Robot"
  - Robot Area : 5. Therapeutic Robot "Paro"

At the National Museum of Emerging Science and Innovation, we will work for the further promotion and understanding of cutting-edge science and technology as we develop new plans and exhibits based on the latest science and technology which are designed to meet the needs of society.
<For further information, contact the following>

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< Characteristics of each of the new exhibits >

The exhibit allows you to experience the surgical support of augmented reality (AR) technology, which shows doctor's medical images which identify the human body during surgery. Also, the usage of VR/information technology will be introduced.
2. Robot Assisted Surgery

It is an exhibit, which displays surgery assisted by a new hand and allows you to actually experience robotic surgery in the abdominal cavity. Through the exhibit, you can learn about minimally invasive surgery that has become possible with the usage of robot technology, etc.

Edited by Takeyoshi Dohi (Professor of the Graduate School of Information Science and Technology, the University of Tokyo)
Exhibited area 5F “Life Science” Zone Medicine Area

3. Brain Machine Interface (BMI)

With images and panels, it introduces cutting-edge technology, which outputs the brain activity captured directly by a sensor and transfers it to machines and robots. The exhibit will make visitors think about the problems and the possibilities provided by new technology by having visitors experience the virtual reality of BMI technology, through robot control, based on the potential of muscles.

Edited by Yoshio Sakurai (Professor of the Graduate School of Letters, Kyoto University)
Yasuharu Koike (Associate Professor at the Precision and Intelligence Laboratory of Tokyo Institute of Technology)
Exhibited area 5F “Life Science” Zone Brain Area
4. High-Speed Catching Robot (a robot challenging its limitations)

"High-Speed Catching Robot" can move fast far beyond human ability. It is a robot, which actualizes a human's harmonized movements of catching a ball with the hand through recognizing the ball with its eyes. You can learn about the "hand" which moves at high-speed and the "eye" that quickly sees, by looking at its movements of catching the ball and throwing the ball, as it changes its directions.

5. Therapeutic Robot "Paro"

It is an achievement of research and development of advanced robotics which emphasizes providing comfort and joy by mutual interaction with humans. Discover how it will respond to you by talking to "Paro" and touching it. What will you feel from "Paro's" response?