

For the Immediate Attention of the Media

June 9, 2014
National Museum of Emerging Science and Innovation (Miraikan)

Meet the World's Most Advanced Android Robots!

Kodomoroid[®], a child news announcer, and Otonaroid[®], a science communicator On display starting June 25 (Wed.), 2014

On June 25 (Wed.), 2014, the National Museum of Emerging Science and Innovation (Miraikan) (Chief Executive Director: Mamoru Mohri; Address: Aomi, Koto-ku, Tokyo) will open a permanent exhibition entitled, "Android: What is Human?" where visitors can meet the world's most advanced androids - robots which closely resemble humans.

This exhibition displays three android robots: the recently developed Kodomoroid[®] and Otonaroid[®]- a child android and an adult female android, respectively - and Telenoid[®], an android designed without individual human physical features. The exhibition is curated by Dr. Hiroshi Ishiguro, a leading android expert who has been studying the question, "What is human?"



Kodomoroid[®] and Otonaroid[®] will attempt to fill human roles as the world's first android announcer and as the Miraikan's android science communicator, respectively. The exhibition will be a unique and rare event which will provide visitors with the opportunity to communicate with and operate android robots, while shedding light on the attributes of *humans* in contrast with those of robots.

■Overview■

Opening day	June 25 (Wed.), 2014
Venue	3F Permanent Exhibition Zone, "Create Your Future" National Museum of Emerging Science and Innovation (Miraikan)
Opening hours	10:00 – 17:00 (last entry 30 minutes prior to closing)
Admission fees	Adults: 620 yen; persons 18 years of age and under: 210 yen (Groups of eight or more individuals) Adults: 490 yen; persons 18 years of age and under: 160 yen *Free admission for those with Disability Books and an accompanying person
Closed	Every Tuesday (except on holidays and during the spring, summer and winter vacation periods), and during the year-end and new year holiday period (Dec. 28 to Jan. 1)
General supervisor	Hiroshi Ishiguro (Visiting Director), ATR Hiroshi Ishiguro Laboratories; Distinguished Professor, Osaka University)
Cooperation	Dentsu, Inc.

Inquiries from ordinary visitors:	For more information on this press release, please contact:
National Museum of Emerging Science and Innovation (Miraikan) 2-3-6 Aomi, Koto-ku, Tokyo 135-0064 TEL: +81-3-3570-9151 / FAX: +81-3-3570-9150 URL http://www.miraikan.jst.go.jp	Public Relations Section, Exhibition Development Division, National Museum of Emerging Science and Innovation (Miraikan) Email: press@miraikan.jst.go.jp TEL: 03-3570-9192 FAX: 03-3570-9150

[Exhibition Outline]

An android is a robot which closely resembles a human in appearance and movement. With soft skin made from special silicon and smooth motion made possible by artificial muscle, android robots are becoming increasingly similar to humans at unimaginable speed. If an android robot gains the ability to talk and live identically to a human, you may not be able to distinguish between androids and humans before long. If this comes to pass, what would the word *human* mean? What is *human*? This question has been subject to debate since ancient times, and efforts to find an answer are still being made in all fields, including the humanities, social sciences, and art. Building an android can be described as a process of understanding what makes a human look like a human.

1. Kodomoroid[®]

Kodomoroid[®] is a teleoperated android robot resembling a human child. It is an android announcer with potential exceeding that of its human equivalent. It can recite news reports gathered from around the world 24 hours a day, every day, in a variety of voices and languages. In the studio set up in Tearoom of Zero/One on the third floor, you can watch her deliver news about global issues and space weather reports.

Characteristics: A child is vulnerable and is also a symbol of the future of the earth. Kodomoroid, with its close resemblance to a human child and detached voice, continuously recites world news. It is a work of art of sorts which asks profound questions about humanity's future.

Supported by: National Institute of Information and Communications Technology (Japan Space Weather Information Center)
NHK Global Media Services, Inc.



Kodomoroid[®]

2. Otonaroid[®]

Otonaroid[®] is a teleoperated android robot resembling an adult female. She has been *hired* by the Miraikan as a robot science communicator. At the exhibition, you can talk with her and also operate her.

Characteristics: Otonaroid[®] is an experimental exhibition, in which you can experience a face-to-face conversation with an android robot and operate it. Through this experience, you will gradually acclimate to communication with an android robot and become capable of comprehending it more instinctively.



Otonaroid[®]

3. Telenoid[®]

Telenoid[®] is a teleoperated android robot with a minimal design, created as an attempt to embody the minimum physical requirements for humanlike communication. At the exhibition, you can talk with it and also operate it.

Characteristics: Compared to Otonaroid[®], the design of Telenoid[®] omits specific human physical features, such as a physique and face. This robot, with its neutral appearance, enables people who communicate with it to feel that they are with anyone they wish.

This exhibition will demonstrate achievements made in relation to the research project, "Studies on cellphone-type teleoperated androids transmitting human presence" (*1), in the research area, "Creation of Human-Harmonized Information Technology for Convivial Society" (*2), under the JST Core Research for Evolutional Science and Technology (CREST).



Telenoid[®]

(*1) Research director: Hiroshi Ishiguro, Director (visiting), ATR Hiroshi Ishiguro Laboratories (ATR Fellow)

(*2) Research supervisors: Yohichi Tohkura, Professor Emeritus, National Institute of Informatics (- Dec. 2013)

Toyooki Nishida, Professor, Graduate School of Informatics, Kyoto University (Jan. 2014-)

* Kodomoroid and Otonaroid are registered trademarks owned by Advanced Telecommunications Research Institute International (ATR) and Dentsu, Inc.

* Telenoid has been developed by ATR, Hiroshi Ishiguro Laboratories.