TDU
TOKYO DENKI UNIVERSITY

Research Branding Project

Related to Japanese Government Medical Device Outbound Policy

Global Maintenance of ME Systems is an Important Issue

Collaboration to Japanese Government Policy

Formation of a Research Base for Secure, Advanced Bio- Medical Engineering in the Era of Global IoT

Fostering Skilled Personnel to Play a Central Role in the Overseas Deployment of Medical Devices

- New training course for fostering skilled personnel required to play a central role in the overseas deployment of medical devices
- Improvements of CySec, a special international cybersecurity course
- Expansion and improvement of university departments and graduate school ME education

Formation of a Network for International Cooperation

- Overseas universities in Asia and other regions
- Medical Faculty, hospitals, universities, academic associations in Japan
- Government affiliated organization, industrial organizations, ME and Security related companies

Creating a Future for the Safe, Relieved and Comfortable Society

Research for Advanced Secure IoT Medical Systems

- Establishing the technical foundations for the security required for IoT medical devices
- Research into advanced IoT Internet devices that can be maintained in different nations
- Fundamental research into advanced, secure, IoT-enabled medical device systems

Developing ME devices, ME related industrial associations Networks of medical universities

Fusion of ME potential and security potential

Strong security potential including encryption and information distribution

Track record of the center for supporting the development and promotion of medical and assistive devices

Project for supporting the establishment of strategic research foundations at private universities "Strategic research into the practical use of medical and assistive devices"

- Confirmation of original research into surgical devices and devices for medical measurements
- Production of systematic sets of educational textbooks for medical devices
- Strengthening of network with ME courses and overseas institutions

Track record of Cybersecurity Research Laboratories

SECOM Science and Technology Foundation
"Security kernel technology focusing on fundamental computer principles and research into its applications".

- Participation and coordination with INCS-CoE, an international collaborative organization on security issues
- Organization of CySec, a special education course on cybersecurity technology
- Receipt of prizes including the Prime Minister's Prize and an award for success from the Information Processing Society of Japan
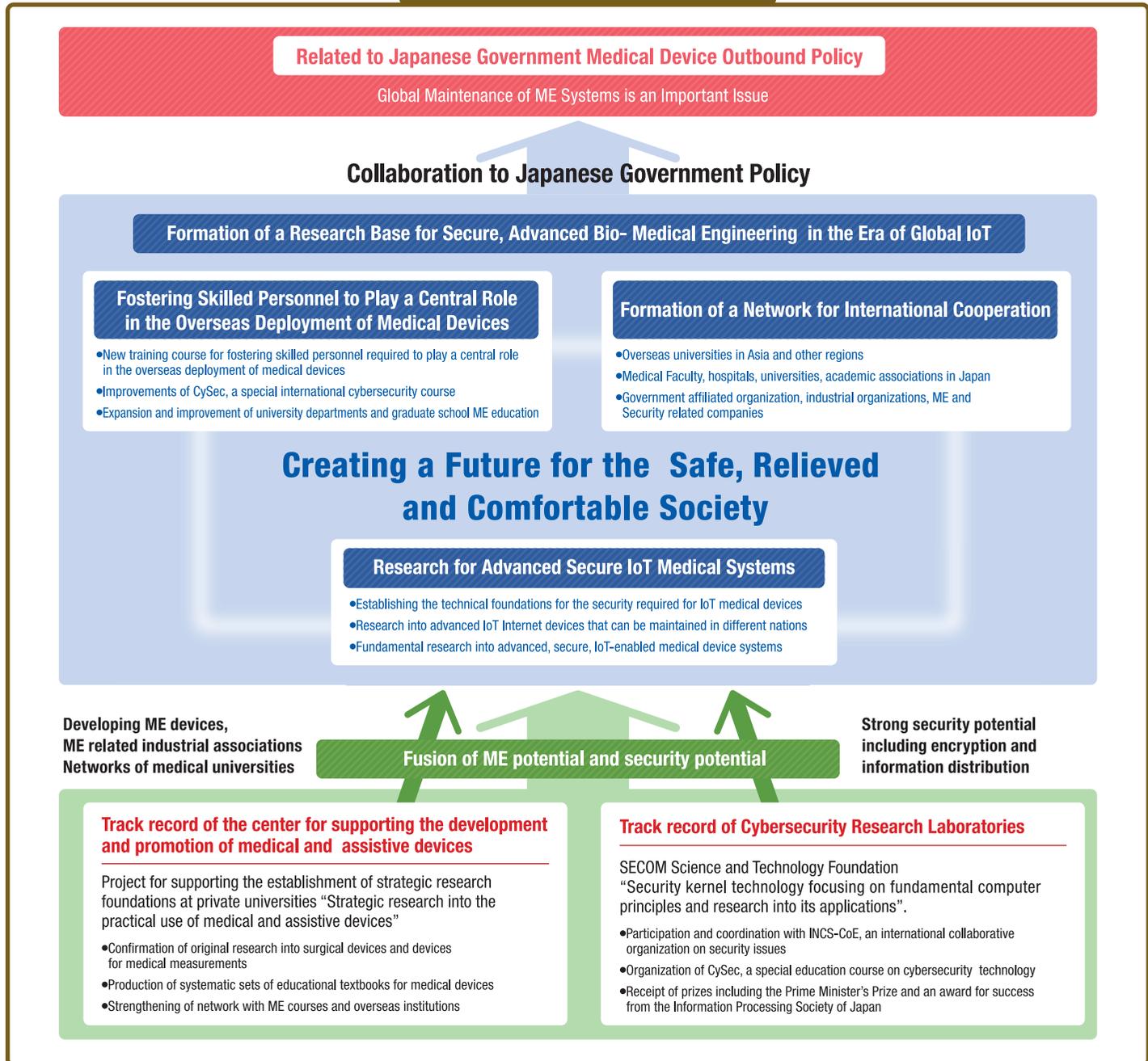
Living Smart, Living Secure

Tokyo Denki University President
Tadahiko Ibamoto

 In November 2017, TDU was selected by the Ministry of Education, Culture, Sports, Science and Technology to participate in the FY 2017 Private University Research Branding Project . Within TDU, we had already established a commission for investigating our research branding selecting "Creating a Future for the Safe, Relieved and Comfortable Society" as our research slogan and engaging particularly in the core fields of "Biomedical Engineering", "Energy and Environment", "Safety and Relief", and "Information Processing".

 The project selected is entitled "Formation of a Research Base for Secure, Advanced Bio- Medical Engineering in the Era of Global IoT". This project is entirely in alignment with our core research areas. It will explore innovative new ground by fusing security research conducted at the Cybersecurity Research Laboratories with the track record of research into bio-medical engineering conducted by the Medical Equipment Practical Development Support Center in the Research Institute for Science and Technology.

 For the more than 110 years since our foundation, the mission of TDU has been to harness technology to contribute to society. Through this project, we intend to make further contributions to society through the research and development in the field of specialist medical devices that will harness IoT technology and other new technologies including remote maintenance, modularization and advanced security technology.

https://www.dendai.ac.jp/about/tdu/activities/branding/

Formation of a Research Bace for Secure, Advanced Bio- Medical Engineering in the Era of Global IoT.

The Significance of Research Branding Project

Through our previous work, we have sought to harness the results of research into IoT and security to provide benefits in the field of biomedical engineering, contributing to the construction of a society that provides safety, peace of mind and comfort. Specifically, we are leveraging IoT technology to develop medical device systems that can be maintained remotely while guaranteeing security. This work takes place in three main areas, Research for advanced secure IoT medical systems, Fostering Skilled Personnel to Play a Central Role for the Overseas Deployment of Medical Devices, Formation of a network for International Cooperation. Up until now, this research has being conducted separately, but under the research branding project, we will be working to cooperate and move forward as an organization. We are committed to making a success of this branding project through cooperation with other universities, institutions and private-sector companies.

IoT-enabled Evaluation and Preservation of Evidence

Supervisor Responsible for Research Branding Specialized Professor, General Research Institute Cybersecurity Research Laboratories

Director: Ryoichi Sasaki

Project Summary

TDU will fusion long-standing research into biomedical engineering and cyber security in order to create a biomedical engineering center that can develop secure IoT-enabled medical device systems. Specifically, the center will harness IoT technology in order to develop secure medical device systems that include remote control functionality. The aim is to produce medical devices that can operate successfully not only in Japan but in a wide range of different environments around the world. The development of such easily-maintained systems will be accomplished through collaboration between industry, academia and the government.

In addition, TDU will establish a new training course for fostering skilled personal required to play a central role in the overseas deployment of medical devices. The course will accept overseas students from Asia and around the world, who will aim to put the project into practice.   Our aim is to ensure that TDU develops an unparalleled reputation for providing secure IoT-enabled biomedical engineering, as we had to contribute to the creation of a society that provide safety, relief and comfort.

Expectations of the Research Branding Project

IoT functionality and the resolution of security issues are extremely important. For the widespread use of Japanese medical device technology in Asia.
We are making efforts to provide solutions by fusing researching security and biomedical engineering fields. Our aim is to make progress in designing reliable, robust and easy-to-maintain devices, and in order to achieve this we also need to train researchers capable to design these devices. In this branding project, we are aiming the global deployment of japan ME device, and also the grown up of individuals who might be involved in this international expansion. In other words, we need to educate not only healthcare professionals, but those responsible for designing the equipment and devices they use to help their patients. The development of medical device systems requires collaboration between medical institutions and medical device manufacturers.
We are committed to the formation of collaboration networks between hospitals and ME devices companies, and between academia, industry and the government.

Medical Engineering, Assistive Engineering

Supervisor Responsible for Research Branding Project Specialized Professor, General Research Institute Medical Equipment Practical Development Support Center

Director: Takeyoshi Dohi