The 11th International Convention on
Rehabilitation Engineering and Assistive Technology

i-CREATe 2017

KOBE, JAPAN

Powerful Asia

for Robotics to Be Human Partners

Date August 22nd (tue) - 24th (thu), 2017

Venue Kobe International Conference Center

General Chair Takaaki Chin MD, PhD Hyogo Rehabilitation Center

i-CREATe 2017

Organizer :

CREATe Asia

In Conjunction with :

32nd Japanese Conference on the
Advancement of Assistive and
Rehabilitation Technology in KOBE

Local Organizer :

The Hyogo Institute of Assistive Technology
Rehabilitation Engineering Society of Japan

Supported by :

In collaboration with :

WHO Centre for Health Development
(WHO Kobe Centre)

Special Lecture

August 23, 2017 **12:30-14:00** | B1F Main Hall

Akiko Fukuda

Secretary General, World Federation of the Deafblind / International Cooperation Committee member, The Japan Deafblind Association (person with multiple disabilities)

CV

- Born in 1977 in Fukuoka prefecture
- Raised in Saga prefecture until high school
- Bachelors of Arts from Tokyo Womans' Christian University (Japan)
- Master of Social Work from Washington University in St. Louis (USA)
- 2004-2005 Consultant, Inter-American Development Bank (USA)
- 2005-2006 Assistant Regional Development Officer, Disabled Peoples' International Asia-Pacific Region (Thailand)
- 2006-2009 International Community Center, Waseda University (Japan)
- 2009-2012 Clinical Development Officer, Zimmer Inc. (Japan)
- 2012-current International Corporation Committee member, Japan Deafblind Association (Japan)
- 2013-current Secretary General, World Federation of the Deafblind

Abstract

Technology for the Deafblind and Its Possibility and Limitation

It is estimated that around 14,000 deafblind people are living in Japan. Difficulty in seeing and hearing causes extremely-limited accessibility in every sector of daily lives from communication to moving around. Thus, they are easily isolated and excluded from mainstream society. Advancement of technology has made a significant breakthrough for us deafblind to be connected or reconnected to the world once we are forgotten. Deafblind people got a tool to be united even beyond international borders. Technology shed some light on us but still remains darkness which cannot be solved by itself.

My life was once shut down in the course of losing hearing and sight. Even before I lost these two senses I have developed severe impairments in mobility and breathing already but inability to move or breathe did not limit my access to mainstream world that much. Being deafblind is a totally different story. Everything around me lost its existence, even a person next to me. I only know by being physically touched. There is no one around me even in the crowd.

Being connected – that is all what matters to us. It is said that deafblindness causes three major difficulties: communication, getting information, and moving around. No information is gained automatically. Whether it is morning or night, I cannot tell by myself. Time, location, who is with me – there is no clue. There is no way to access by myself.

Only way we can access to world fully by ourselves is through technology. Tactile watch and Braille Display are such examples. Advancement of technology changed our lifestyle from “being approached and controlled by others” to the agent of own lives. Now I am driving my life and enjoying to its fullest.

However, there is still a challenge that technology cannot solve or overcome. Human brings technology but technology cannot create human. We need someone who guides us which technology to choose and how to use in our own different communication methods. Each deafblind person has her/his own way of communication. In case of natural disaster or fire, how would we know if it is coming? How can we make a phone call? How can we enjoy movie and music? How can we decide where we want to go and move around? With a bit of warm hands behind technology, our lives can be fully nourished. Severe shortage of such warm hands is a limitation for us to embrace this wonderful world that technology can bring about.

Plenary Lecture

August 22, 2017 **14:00-15:00** | B1F Main Hall

Hong-liu Yu

Professor and the director of the Institute of Rehabilitation Engineering and Technology, University of Shanghai for Science and Technology (USST), China
President-elect of Coalition of Rehabilitation Engineering and Technology Asia (CREATe Asia)
President of Shanghai Engineering Research Center of Assistive Devices, China

CV

Dr. Yu Hong-liu is a professor and the director of the Institute of Rehabilitation Engineering and Technology, University of Shanghai for Science and Technology (USST). He obtained his Ph. D degree with the study in the field of rehabilitation engineering and intelligent control and is now responsible for leading the program and discipline of Rehabilitation Engineering in USST. Professor Yu has published over 110 papers and 5 books, and is authorized for more than 100 patents in rehabilitation engineering. He is now the President-elect of Coalition of Rehabilitation Engineering and Assistive Technology, the president of Shanghai Engineering Research Center of Assistive Devices(SERCAD) and the Secretary General of Rehabilitation Devices Committee of China Association of Assistive Products(CAAP). He is also the Chief Editor of Journal of International Rehabilitation Engineering and Devices.

Abstract

Development of Rehabilitation Robotics in China

The presentation will give an overview to the technical advances of rehabilitation robotics in China. Based on discussion on the concept and classification of rehabilitation robots at first, the typical rehabilitation robots developed for daily life assistance and rehabilitation therapy by research institutions and companies of China are introduced. The application situation of rehabilitation robots in medical institutions is also presented.

Shingo Shimoda

Unit Leader, Intelligent Behavior Control Unit, RIKEN, BSI-TOYOTA Collaboration Center, Japan

CV

- **Current Position**
  Unit leader
  Intelligent Behavior Control Unit,
  RIKEN, BSI-TOYOTA Collaboration Center
- **Education**
  The University of Tokyo, Ph.D. Department of Electronics Engineering, 2005
  The University of Tokyo, M. Science Department of Environmental studies, 2001
  The University of Tokyo, B. Science Department of Mechano-Informatics, 1999

  - Academic Position
  2005-2007: Research Scientist, Biological Control System Laboratory, RIKEN
  2003-2004: Visiting student, Field and Space Robotics Laboratory, Massachusetts Institute of Technology
- **Awards**
  IEEE Robotics and Automation Society Most Active Technical Committee, 2017
  RIKEN Industry Partnerships Contribution Award, 2016
  IROS CoTeSys Cognitive Robotics Best Paper Award in IROS 2010
  General Chairs' Recognition Award in 48th IEEE Conference on Decision and Control (CDC2009)
  Research Encouragement Award, The Robotics Society of Japan, 2002

Abstract

Intelligent Robot Control for Supporting Human Behaviors

Symbiotic interactions between human motions and robot motions are one of the most important factors for the comfortable behavior support by the robots. How are our behaviors controlled by brain? How different between our behavior control and robot control principles? These questions provide us the interesting clues to develop the symbiotic robot controller with human behaviors.

The most interesting feature of biological learning system is "Bi-directional Learning", that is, top-down and bottom-up learnings are mixture in our learning process. Top-down learning is explicit learning process where we are aware of the correct target for learning and are able to know that we are succeeded to reach to the target or not. Thus, we can intentionally search the appropriate method for the target behaviors.

Bottom-up learning is, on the other hand, tacitly progressed through body/environment interactions. The main purpose of bottom-up learning is behavior adaptations. We cannot intentionally detect what is the correct target but acquire the learning results as tacit knowledges. For instance, we can walk with very efficient gait comparing with the most advanced humanoid robots. We don't know, however, the detail control method for the walking though we can do it. That is because we have tacitly acquired the good algorithm through our life. Bottom-up learning can tune our behaviors more suitable one with our body and the environment without knowing the explicit target.

For comfortable behavior supports by robots, both human and robots adapt the behaviors each other by the bottom-up learning. I will introduce in this talk the robot learning system called tacit learning that shares the many aspects with human bottom-up learning method. Tacit learning can tune the roughly-defined robot behaviors to the sophisticated ones through robot/human interactions. We applied the learning method to motion support system such as exoskeleton robots for walking support, forearm prosthesis for wrist rotation control and post-stroke patient rehabilitation systems. The experimental results show that the behaviors of the patients and the robots were well adapted each other and created the efficient motions.

Takenobu Inoue

Director of Department of Assistive Technology, Research Institute of National Rehabilitation Center for Persons with Disabilities

CV

Education

March 1989 Master of Sciences in Engineering, Keio University Department of Mechanical Engineering

Employment History

2007 to present Director of Department of Assistive Technology, Research Institute of National Rehabilitation Center for Persons with Disabilities

2001 to 2007 Section Chief of Assistive Products Section, Department of Assistive Technology, Research Institute of National Rehabilitation Center for Persons with Disabilities

1989 to 2001 Researcher, Department of Assistive Technology, Research Institute of National Rehabilitation Center for Persons with Disabilities

2004 to 2007 Associate Professor, School of Engineering, The University of Tokyo.

1996 to 1997 Centre for Studies in Aging, Sunnybrook Health Science Centre, University of Toronto (Internship Program of Japanese Government)

Professional Services

2014 to present Convener, ISO/TC173/SC2/WG12, Classification and Terminology of Assistive Products

2016 to present Board Member, Japanese Society of Biomechanisms

2016 to present Board Member, Japanese Society for Well-being Science and Assistive Technology

Abstract

Research and Innovation of Assistive Technology – User Participation and Field-based Innovation

Research and development of assistive technology space is changing so quickly all over the world and also in Japan, in these days. WHO takes a lead in global procurement and R&D of ATs through GATE (Global Cooperation on Assistive Technology) initiative. While in Japan, promotion programs for matching needs and technologies in AT space are increasing. Ministry of Economy, Trade and Industry (METI) and Ministry of Health, Labour and Welfare (MHLW) promote robotic assistive technology development and evaluation program. The MHLW also conducts assistive technology for persons with disabilities development program. These two programs set target technologies and target user groups and also mandate field tests for each project.

Based on these trends in AT space, user participation in research and innovation process is getting more important. In addition, these processes should be conducted in the expected utilization field of developing technologies as much as possible, which we call field-based innovation. In this presentation, two examples will be introduced. One is development of electric powered wheelchairs according to individualized user participation, another is development of information support robot according to field-based innovation.

The first project intended to develop four kinds of electric powered wheelchairs for persons with severe cerebral palsy or muscular dystrophy. Four target users asked to cooperate with whole process of the developments. Speech recognition technology, image recognition technology, MEG detection technology and force detecting technology were selected as human interface technologies for operating the wheelchairs. The four novel wheelchairs showed good results of evaluation in the real utilization fields. In addition, the engineers who participated in the project suggested effectiveness of the individualized user participation for the developments.

The second project intended to develop information support robot for older persons with mild cognitive decline. Data aggregation from target user group at the living situation, participation observation in an independent living facility for fixing the function of the robot, and group interviews with 124 older people living in community, design workshop with the expected stakeholders for fixing the concept of the service systems including the robot. The results of the field test showed effectiveness of the information support robot system.

User participation and field-based innovation will be more important and more useful for development of assistive technologies to support daily living. On the other hand, some of the issues are pointed out, e.g. ethics, safety and burden. More discussion and consideration will be needed.

Tim C. Lueth

Professor and Director of the Institute of Micro Technology and Medical Device Technology of the Technical University Munich (TUM), Germany

CV

Tim C. Lueth, is Professor and Director of the Institute of Micro Technology and Medical Device Technology of the Technical University Munich (TUM), Germany. From 2013 to 2016, he served as dean of the Mechanical Engineering Faculty at TUM. He was born in Hamburg, Germany, in 1965, and received his diploma degree in electrical engineering from the Darmstadt University of Technology, Germany in 1989. Afterwards, he received the Ph.D. degree in robotics and his habilitation degree in computer science from the University of Karlsruhe in 1993 and 1997, respectively. In 1994-1995, he was a Visiting Researcher at the MITI-AIST Electrotechnical Laboratory in Tsukuba, Japan. In 1997, Lueth became Professor for surgical navigation and robotics at the medical school Charité Berlin (HU). In 2001, he became the Director for Mechatronic Medical Technology at the Fraunhofer-Institute for Production Systems and Design Technology IPK. Since 2005, Lueth works at TUM. In 2006, he received a professor status at the University of Toronto, Canada. The European Patent Office elected him in 2007 as TOP-3 inventor in the category “lifetime achievement” for his patent activities in the area of surgical robotics and navigation. He received several national and international awards for his research on medical devices. In 2010, Lueth became elected Member of “acatech,” the German National Academy for Science and Technology. Lueth is active Member of the IEEE R&A Chapter and the IEEE EMB Chapter.

Abstract

From Patient Individual Surgical Robots to Automated Design of Assistance Mechanisms: CAD Systems for the Human Body and Certification of Products

Surgery, rehabilitation and elderly care are big markets for robot technology beside industrial production. The surgical robot company “Intuitive Surgical” has already today a higher market capitalization in comparison with all other robotics companies. The value is comparable to automotive companies. There is a clear new trend to design humans specific complex devices in addition to industrial or transportation systems. In this field of human related technology also some private companies such as Otto Bock, Medi etc. are very successful.
Nevertheless, computer aided design tools to support the construction of those human adapted complex mechanisms and robots are still missing.

In the talk, I will present some examples of the design of complex mechanisms and robots for human application in surgery, rehabilitation or elderly care. Beside the design also regulatory affairs such as ISO 9001/ ISO 13485 and the new Medical Device Directive are relevant. There is a strong need to support the design and documentation processes by new software systems to reduce the time consuming processes of getting a CE/FDA approval for new devices

The third part of the talk deals with the automated design of robots and manipulator mechanisms for additive manufacturing and laser cutting. Those design tools today the key for rapid production of patient specific assistance.

Haruki Nakamura

President, Japanese Association of Occupational Therapists

CV

Academic Background

1977 - OT Diploma, Rehabilitation Institute of National Sanatorium Kinki-Chuo Hospital
(changed to "National Hospital Organization Kinki-Chuo Chest Medical Center" since April 1, 2004)
OT Licensure from Ministry of Welfare, Japan

Work History(Last Three Posts Held)

2006 - Hyogo Prefectural Rehabilitation Center at Nishi-harima, Hyogo Prefectural Rehabilitation Hospital at Nishi-harima
2010 - Hyogo Rehabilitation Center Central Hospital
2015 - present: President (full-time), Japanese Association of Occupational Therapists since April

Social Activities

- President of Japanese Association of Occupational Therapists
- Trustee of Japan Visiting Nursing Foundation, etc.

Abstract

Utilization of Welfare Equipment in Aging Society – Current Status and Issue in Japan

In 2025, Japan's population aged 65 or older will account for 30.3% of its total population and that aged 75 or older will account for 18.1%, and the number of elderly people who live alone or need social care tends to increase until 2035. The rental welfare equipment covered by the long-term care insurance includes wheelchairs, special beds, bedsore prevention tools, slopes, walkers, walking sticks, sensing systems for wandering elderly with dementia, transfer lifts and automatic excretion treatment devices. Approximately half of the recipients of the long-term care benefit are utilizing these items. Beds and wheelchairs occupy a large portion of their utilization rate. Chronologically, the number of rented items of welfare equipment in Kobe city was 1,392 in April 2000, and increased by 66 times to 92,637 in September 2016. The number of rental dealers also increased from 10 to 116. While the number of rented items has been increased and the supply system has been enhanced like this, the data on the effectiveness of welfare equipment are being required, for example, on whether such equipment is applied and used suitably for users' daily life functions.

Meanwhile, development and spread of nursing care robots are in progress as part of national policy. There are three projects related to the Ministry of Health, Labour and Welfare as follows: "Establishment of a council for cooperation and coordination between needs and seeds," "Project for supporting practical applications of welfare equipment and nursing care robots" and "Model project for supporting development of nursing care technologies by utilizing nursing care robots." In this presentation, I introduce some of them.

In Japan, we are questioning how elderly people's dignity and independence should be supported while our society is aging and its working-age population is decreasing. We have to address various issues, including physical points of welfare equipment and nursing care robots, user education of such equipment, sharing of principles and review of the rules. Today my presentation covers some of them, which I hope will be informative for your countries' future cases.

August 22, 2017

Paper Presentation - PP1

B1F Main Hall

16:00-17:30 | Hand Exoskeleton / Upp-Limb Prosthesis

PP1-1 Therapeutic Hand Robot(THR) with pre-programmed courses and voice- or sound-activated commands for post-stroke rehabilitation
Ong Teck Soon
(School of Engineering, Ngee Ann Polytechnic, Singapore)

PP1-2 Gripping motion evaluation of 3-Digits 7-joints myoelectric controlled hand
Tomohisa Morita
(Graduate School of Science & Engineering, Tokyo Denki University, Japan)

PP1-3 Upper limb posture angle estimation controller For 3-DOF powered transradial prosthesis
Kimihiro Hayashi
(Graduate School of Science & Engineering, Tokyo Denki University, Japan)

PP1-4 Mechanical design of an elbow exoskeleton device
Qiaoling Meng
(Institute of Rehabilitation Engineering and Technology / Shanghai Engineering Research Center of Assistive Devices / Key Laboratory of Neural-functional Information and Rehabilitation Engineering of the Ministry of Civil Affairs / University of Shanghai for Science and Technology, China)

PP1-5 Research advance on key technology of EMG-based control for hand exoskeleton robots
Qingyun Meng
(School of Medical Institute, Shanghai University of Medicine & Health Science, China)

PP1-6 Preliminary research of a novel wearable hand function training exoskeleton based on EMG triggering
Hongliu Yu
(Institute of Rehabilitation Engineering and Technology, University of Shanghai for Science and Technology (USST), China)

Paper Presentation - PP2

5F Room 502

16:00-17:15 | Language / Communication

PP2-1 Recognizing words in thai sign language using flex sensors and gyroscopes
Rujira Jitcharoenport
(Assistive Technology Group, Department of Computer Engineering, Chulalongkorn University, Thailand)

PP2-2 Towards automatic diagram description for the blind
Ekapol Chuangsuwanich
(Assistive Technology Research Group, Faculty of Engineering, Chulalongkorn University, Thailand)

PP2-3 Reading mathematical expression in Thailand
Nattapat Boonprakong
(Chulalongkorn University, Thailand)

PP2-4 A case study of reading disability: using non-word reading and word writing
Puttachart Potibal
(Kasetsart University, Thailand)

PP2-5 Analysis of multi-meaning graphic symbols for Thai Minspeak® software phase II
Sarinya Chompoobutr
(National Electronics and Computer Technology Center / National Science and Technology Development Agency, Thailand)

Paper Presentation - PP3

5F Room 504-5

16:00-17:45 | Life Support

PP3-1 Touchscreen device size suitable for icon search by blind users
Rei Asakura
(Graduate School of Science and Technology, Niigata University, Japan)

PP3-2 A proposal for improvement of usability of browsing and playback systems for DAISY and EPUB
Kazunori Minatani
(National Center for University Entrance Examinations, Japan)

PP3-3 Developmental stage for ECS-make your life colorful-
Hiroshi Ishihara
(Research & Development Department in Hashimoto Artificial Limb Manufacture Co., LTD, Japan)

PP3-4 Development of BCI system for functional substitution: controlling FES
Jongsook Sanguantrakul
(Department of Biomedical Engineering, Faculty of Engineering, Mahidol University, Thailand)

PP3-5 Hip and ankle regulations that reduce defecation time in elderly
Pattama Madaeng
(Srinakharinwirot University, Thailand)

PP3-6 Development of excretion supporting device for person with a spinal cord injury
Megumi Ando
(Hyogo Rehabilitation Center, Japan)

PP3-7 Accelerometer-based bed exit alarm for patient monitoring
Surapa Thiemjarus
(Rehabilitation and Assistive Technology Laboratory, National Electronics and Computer Technology Center, Thailand)

August 23, 2017

Paper Presentation - PP4

5F Room 502

9:45-11:00 | **Mobility**

PP4-1 Design and simulation of a wheelchair mounted lightweight compliant manipulator
Bingshan Hu
(University of Shanghai for Science and Technology, Shanghai Engineering Research Center for Assistive Devices, China)

PP4-2 Development of chair with improved mobility performance
Tomoyuki Murata
(Kanagawa Rehabilitation Center, Japan)

PP4-3 Obstacle avoidance feedback system for the blind using stereo sound
Kawin Metsiritrakul
(Department of Computer Engineering, Faculty of Computer Engineering Chulalongkorn University, Thailand)

PP4-4 "iSonar-2: obstacle warning device, the assistive technology integrated with universal design for the blind"
Surapol Vorapatratorn
(Department of Computer Engineering, School of Information Technology, Mae Fah Luang University, Thailand)

PP4-5 Instability predicted by instantaneous dynamic stability: A preliminary study on periodic and fall recovery motion
Amaraporn Boonpratatong
(Srinakharinwirot University, Thailand)

Paper Presentation - PP5

5F Room 502

14:10-15:10 | **Research & Development**

PP5-1 Model-based design of PEMS for medical devices
Supachai Vorapojpisut
(Thammasat University, Thailand)

PP5-2 Simple calibration method for low-cost eye-tracker
Takehito Kikuchi
(Faculty of Science and Engineering, Oita University, Japan)

PP5-3 Virtual restoration of down-sampled EMG signals using a stochastic model
Akira Furui
(Graduate School of Engineering, Hiroshima University, Japan)

PP5-4 Low-noise high-power amplification system design for mobile tablet-based audiometry
Siwat Saibua
(National Electronics and Computer Technology Center, Thailand)

August 24, 2017

Paper Presentation - PP6

B1F Main Hall

9:15-10:15 | AT Situation (Nation / Region)

PP6-1 A study on the role of disability awareness workshop in promoting social inclusion: case of visual impairment in tunisia
Sami Ben Fradj
(Kobe Design University, Japan)

PP6-2 Assistive products in bangladesh: The state of the art and problems
Mehedi Hasan Khan
(Graduate School of Rehabilitation, Kobe Gakuin University, Japan)

PP6-3 Can the silver economy answer for Thai aging society?
Kamolpun Punpuing
(National Science and Technology Development Agency, National Electronics and Computer Technology Center, Thailand)

PP6-4 Equipment support for emergency calling device for patients with incurable at home
Toshihiro Kawai
(Saitama Rehabilitation Center, Japan)

WKC Forum

B1F Main Hall

13:00-15:00 | Role of Assistive Technology in Rapid Ageing in Asia and the World

Opening Address
Sarah Louise Barber
(Director, WHO Kobe Centre, Japan)

Keynote Lecture
Assisted Living in a Danish Perspective - with special focus on the ageing population and related challenges
Henrik Hjorth
(Director, Creative Impact, Denmark)

Reports by Practitioners: Support for Independent Living using AT
Masako Okuhira
(Expert on International Relations, Japanese Society for Rehabilitation of Persons with Disabilities, Japan)

Hiroyuki Shinoda
(Lecturer on Seating Engineering, Sakura Wheelchair Project, Japan)

Kazushi Matsumoto
(Executive Director, Asian Seating Assistance Project (ASAP), Japan)

Paper Presentation - PP7

5F Room 502

10:45-11:45 | Lower Limb Orthosis / Prosthesis

PP7-1 Finite-element based orthotics design tools for relieving shear stresses under metatarsal heads in people with diabetes
Wen-Ming Chen
(University of Shanghai for Science and Technology, Shanghai Engineering Research Center for Assistive Devices, China)

PP7-2 Hydraulic damper structure design of a novel intelligent knee prosthesis
Cao Wujing
(Institute of Rehabilitation Engineering and Technology / Shanghai Engineering Research Center of Assistive Devices / Key Laboratory of Neural-functional Information and Rehabilitation Engineering of the Ministry of Civil Affairs / University of Shanghai for Science and Technology, China)

PP7-3 Preliminary study on ankle-foot orthosis using elastomer-embedded flexible joint
Isao Abe
(Faculty of Science and Engineering Oita University, Japan)

PP7-4 Validity of the electric spastic ankle measure for ankle spasticity
Hiroki Ishihama
(The Eisei-kai Rahabilitation Research and Development Center, Eisei Hospital, Japan)

Workshop

5F Room 504-5

9:30-11:30 | Workshop

WS-1 Empowering person-centred decision-making: service strategies for complex assistive technology selection
Rachael Elliott Schmidt
(Schmidt Consultancy, Australia)

Paper Presentation - PP8

5F Room 504-5

11:30-12:00 | Special Education

PP8-1 Concurrent validity of EEG-based cognition test app and wechsler intelligence scale for children
Yung-Wen Tang
(School of Physical Therapy, Chun Shan Medical University, Taiwan)

PP8-2 PLAY-ABLE – developing ability-based play activities for children with special needs
Daniil Umanski
(Holon Institute of Technology, Israel)

Poster Presentation - PT1 Upp-Limb

5F Room 501

PT1-1 An easy & light weight upper limb: case report
Nadda Reecheeva
(Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand)

PT1-2 Testing and training device for adjustability for grasping force
Kohei Ando
(Graduate School of Engineering, Nagoya Institute of Technology, Japan)

PT1-3 Hand function recovery after a stroke with robotic training: Study on spasticity
Long Li
(Xi'an Jiaotong University, China)

PT1-4 Improvement of a body powered functional arm prosthesis with modern technology
Akio Nakagawa
(Kobe Gakuin University, Japan)

PT1-5 Adaptation of new silicone glove in the practical application of the skeleton type electric prosthetic hand
Hidemasa Nakamura
(Hyogo Rehabilitation Center, Robot Rehabilitation Center, Japan)

Poster Presentation - PT2 Communication

5F Room 501

PT2-1 INDIE-WORD - An adaptable communication interface for paralyzed individuals
Daniil Umanski
(Holon Institute of Technology, Israel)

Poster Presentation - PT3 Life Support

5F Room 501

PT3-1 Influence on personal assistance by robotic arms for individuals with severe physical disabilities
Toshinori Maruoka
(Nagoya Sangyo University, Japan)

PT3-2 Augmentative and alternative communication using brain computer interfaces and accessibility functions of smart devices
Yosuke Fujimoto
(Endowed Research Department of Clinical Neuroengineering, Global Center for Medical Engineering and Informatics, Osaka University / Department of Neurosurgery, Kobe University, Japan)

PT3-3 Development of BCI system for functional Substitution: Controlling robot
Jongsook Sanguantrakul
(Department of Biomedical Engineering, Faculty of Engineering, Mahidol University, Thailand)

PT3-4 Developing Individual-specific assistive technology systems: A multi-input multi-output platform for severe quadriplegic
Yi-Feng Ko
(Department of Physical Medicine and Rehabilitation, Taipei Medical University Hospital, Taiwan)

Poster Presentation - PT4 Mobility

5F Room 501

PT4-1 Investigation of manipulation force for wheelchair using 6-DOF force sensor
Ryoji Onodera
(National Institute of Technology, Tsuruoka College, Japan)

Poster Presentation - PT5 Research & Development

5F Room 501

PT5-1 Engaging caregivers in an outpatient clinic waiting area using healthcare virtual reality applications: An exploratory study
Loh Yong Joo
(Tan Tock Seng Hospital, Singapore)

PT5-2 Conventional physiotherapy versus virtual reality exergames in stroke patients undergoing subacute rehabilitation in a community hospital: An assessor blinded randomized controlled pilot trial
Tham SL
(TTSH Rehabilitation Center, Singapore)

PT5-3 Shape consideration for prolonging the lifetime of the Straight-fiber-type pneumatic artificial muscle
Akihiro Kojima
(Chuo-University, Japan)

PT5-4 The training of eye-tracking for severely disabled using serious games
Fumihito Ito
(Shimane University, Japan)

Poster Presentation - PT6 AT Situation (Nation / Region)

5F Room 501

PT6-1 Development of web accessibility and mobile accessibility for disabilities in Taiwan
Yao-ming Yeh
(Department of Information Management, Kainan University, Taiwan)

Poster Presentation - PT8 Lower Limb

5F Room 501

PT8-1 The effectiveness and adaptation criteria of HONDA walking assistance robot for patients after total hip arthroplasty
Yusuke Tezuka
(Hyogo Rehabilitation Center, Japan)

PT8-2 Validity of the crutch length estimation methods
Takayuki Nagasaki
(Department of Rehabilitation, Kyushu University of Social Welfare, Japan)

PT8-3 The development of an intelligent drop foot stimulator
Chih-Wei Peng
(Department of Biomedical Engineering Taipei Medical University, Taiwan)

PT8-4 A brand new design of 3D printing ankle foot orthosis advantages patients with neurological disease: Clinical research
Shih-Ching Chen
(Department of Physical Medicine and Rehabilitation, School of Medicine, College of Medicine, Taipei Medical University / Taipei Medical University Hospital, Taiwan)

PT8-5 Changes in lower extremity muscle activity after fast walking in individuals with flat foot
Chu-Yuan Chiang
(Department of Physical Therapy and Assistive Technology, National Yang-Ming University , Taiwan)

List of gSIC-AT World 2017 Teams

No.	Project Title	Affiliation	Country
Design			
DS1-1	Integrated training staircase and parallel bars system	Singapore Institute of Technology	Singapore
DS1-2	Fallessflops	Department of Rehabilitation Sciences, The Hong Kong Polytechnic University	Hong Kong
DS1-3	Duo seat	Chulalongkorn University	Thailand
DS1-4	Device to ease scaling operation on smartphone or tablet by mouth stick for quadriplegia	Graduate School of Arts & Design, Kobe Design University	Japan
DS1-5	Sit and slip: ease your dressing	Chulalongkorn University	Thailand
DS1-6	Universal muscle strengthening and rehabilitation device for the elderly and post-stroke patients	Engineering Cluster, Singapore Institute of Technology	Singapore
DS2-1	Roller-clother	Rehabilitation Science, The Hong Kong Polytechnic University	Hong Kong
DS2-2	Liberty of wheel	Department of Product and Interior Design, Kobe Design University	Japan
DS2-3	Handy crutch	Industrial Engineering, University of Sarjanawiyata Tamansiswa	Indonesia
DS2-4	Time for tales (An interactive toy for visually impaired children)	Chulalongkorn University	Thailand
DS2-5	Ely walking stick (Elderly walking stick)	Mechanical Engineering, Institute of Technology Education	Singapore
DS2-6	Smart transfer	Mechanical Engineering, Institute of Technology Education	Singapore
Technology			
TS1-1	Development of a skill visualizer based on force sensing	Graduate School of Science and Engineering, Saitama University	Japan
TS1-2	Crosswalk guidance system with image processing and haptic projector for persons with visual impairment	Department of Electronics and Mechanical Engineering, Graduate School of Tokyo Denki University	Japan
TS1-3	Patient individual hand rehabilitation robot (PIH-robot)	Micro Technology and Medical Device Technology / TUM Department of Mechanical Engineering, Technical University of Munich	Germany
TS1-4	Ambient detector	Mahidol Wittayanusorn School	Thailand

No.	Project Title	Affiliation	Country
TS1-5	ACTBRAIN-BCI based 3D neurofeedback system for frontal brain activities improvement	Mahidol University	Thailand
TS1-6	MICOSTION (Mechanical combine of Stroke rehabilitation)	Industrial Engineering, University of Sarjanawiyata Tamansiswa	Indonesia
TS2-1	HUVETS: Horoshima University virtual EMG Training System for myoelectric hand control with evaluation of motor skills and fatigue in users	Department of System Cybernetics, Graduate School of Engineering, Hiroshima University	Japan
TS2-2	Development of a wearable device to measure posture deviation and posture rehabilitation in Parkinson's disease patients	Engineering Cluster, Singapore Institute of Technology	Singapore
TS2-3	Eye AIM: camera based eye tracking system mobile application	Mahidol University	Thailand
TS2-4	HitAlert	Chulalongkorn University	Thailand
TS2-5	Master-slave soft robotic gloves for hand rehabilitation	School of Mechanical Engineering, Shanghai Jiao Tong University	China
TS2-6	Rehabilitation robot of upper and lower limb based on the wheelchair	School of Medical Instrument and Food Engineering / Institute of Rehabilitation Engineering & Technology, University of Shanghai for Science and Technology	China
TS3-1	A tremor compensation device for people with pathological tremor	School of Mechanical & Aeronautical Engineering, Singapore Polytechnic	Singapore
TS3-2	An enhanced sensorized block and box test for rehabilitation of gross manual dexterity	School of Mechanical & Aeronautical Engineering, Singapore Polytechnic	Singapore
TS3-3	The foot drop physical machine "Foot Work"	Fang Vocational Education College	Thailand
TS3-4	Space	Institute of Technical Education (ITE College Central), School of Electronics and Info-Comm Technology	Singapore
TS3-5	Portable device for preliminary diagnosis of scoliosis and shoulder symmetricity assessment	Department of Biomedical Engineering, Faculty of Engineering, University of Malaya	Malaysia
TS3-6	Sit-to-stand trainer with assessment of balance ability	Thammasat University	Thailand
TS3-7	Space Walker	Thammasat University	Thailand

memo

List of gSIC-AT World 2017 Teams

No.	Project Title	Affiliation	Country
Design			
DS1-1	Integrated training staircase and parallel bars system	Singapore Institute of Technology	Singapore
DS1-2	Fallessflops	Department of Rehabilitation Sciences, The Hong Kong Polytechnic University	Hong Kong
DS1-3	Duo seat	Chulalongkorn University	Thailand
DS1-4	Device to ease scaling operation on smartphone or tablet by mouth stick for quadriplegia	Graduate School of Arts & Design, Kobe Design University	Japan
DS1-5	Sit and slip: ease your dressing	Chulalongkorn University	Thailand
DS1-6	Universal muscle strengthening and rehabilitation device for the elderly and post-stroke patients	Engineering Cluster, Singapore Institute of Technology	Singapore
DS2-1	Roller-clother	Rehabilitation Science, The Hong Kong Polytechnic University	Hong Kong
DS2-2	Liberty of wheel	Department of Product and Interior Design, Kobe Design University	Japan
DS2-3	Handy crutch	Industrial Engineering, University of Sarjanawiyata Tamansiswa	Indonesia
DS2-4	Time for tales (An interactive toy for visually impaired children)	Chulalongkorn University	Thailand
DS2-5	Ely walking stick (Elderly walking stick)	Mechanical Engineering, Institute of Technology Education	Singapore
DS2-6	Smart transfer	Mechanical Engineering, Institute of Technology Education	Singapore
Technology			
TS1-1	Development of a skill visualizer based on force sensing	Graduate School of Science and Engineering, Saitama University	Japan
TS1-2	Crosswalk guidance system with image processing and haptic projector for persons with visual impairment	Department of Electronics and Mechanical Engineering, Graduate School of Tokyo Denki University	Japan
TS1-3	Patient individual hand rehabilitation robot (PIH-robot)	Micro Technology and Medical Device Technology / TUM Department of Mechanical Engineering, Technical University of Munich	Germany
TS1-4	Ambient detector	Mahidol Wittayanusorn School	Thailand

No.	Project Title	Affiliation	Country
TS1-5	ACTBRAIN-BCI based 3D neurofeedback system for frontal brain activities improvement	Mahidol University	Thailand
TS1-6	MICOSTION (Mechanical combine of Stroke rehabilitation)	Industrial Engineering, University of Sarjanawiyata Tamansiswa	Indonesia
TS2-1	HUVETS: Horoshima University virtual EMG Training System for myoelectric hand control with evaluation of motor skills and fatigue in users	Department of System Cybernetics, Graduate School of Engineering, Hiroshima University	Japan
TS2-2	Development of a wearable device to measure posture deviation and posture rehabilitation in Parkinson's disease patients	Engineering Cluster, Singapore Institute of Technology	Singapore
TS2-3	Eye AIM: camera based eye tracking system mobile application	Mahidol University	Thailand
TS2-4	HitAlert	Chulalongkorn University	Thailand
TS2-5	Master-slave soft robotic gloves for hand rehabilitation	School of Mechanical Engineering, Shanghai Jiao Tong University	China
TS2-6	Rehabilitation robot of upper and lower limb based on the wheelchair	School of Medical Instrument and Food Engineering / Institute of Rehabilitation Engineering & Technology, University of Shanghai for Science and Technology	China
TS3-1	A tremor compensation device for people with pathological tremor	School of Mechanical & Aeronautical Engineering, Singapore Polytechnic	Singapore
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TS3-6	Sit-to-stand trainer with assessment of balance ability	Thammasat University	Thailand
TS3-7	Space Walker	Thammasat University	Thailand
TS3-8	Eye Runner	The Hong Kong Polytechnic University	Hong Kong

memo

Guest of Honor

Her Royal Highness
Princess Maha Chakri Sirindhorn

Kingdom of Thailand

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Welcome Message

It is known that persons with disabilities will be able to improve their degree of independence and quality of life (QOL) through the proper use of rehabilitation engineering and assistive technology. When looking around Asia, however, I would have to say that there are a very large number of challenges that all concerned, such as therapists, educators, doctors, designers and rehabilitation engineers, must take up in accordance with user needs in order to allow persons with disabilities to fully apply appropriate technologies, including robot technology, thereby living a lively life and taking an active part in society.

In 2007, leaders in the engineering field in Singapore and Thailand launched i-CREATe to scientifically discuss the application of rehabilitation engineering and assistive technology inhopes of improving QOL of persons with disabilities. It is impressive that we have been able to continue to organize this convention in different parts of Asia for ten years since then. Of particular note is that Her Royal Highness Princess Maha Chakri Sirindhorn, a member of theroyal family of Thailand, who is well-versed in engineering, has attended every convention. Andit is our great honor and privilege to welcome her to the convention in Kobe as well.

I am confident that Japan's first i-CREATe convention to be held in Kobe in 2017 will not only help make Asia's efforts and initiatives in the area of rehabilitation engineering and assistive technology widely known to those involved in Japan but also provide a golden opportunity to call the attention of stakeholders in each nation in Asia to excellent technology and devices developed in Japan.

Kobe is one of Japan's leading tourist cities and well-known for its gourmet food. Moreover, Arima Onsen (hot spring), one of the hot springs that have the longest history in the nation, as well as numerous World Heritage sites, is easily accessible from Kobe. I guarantee that before or after the challenging academic convention, you will be able to experience another dimension of Japan's appeal firsthand.
I am very happy to have you all in Kobe in the summer of 2017!

Takaaki Chin

Takaaki CHIN
General Chair, i-CREATe2017 (international Convention on Rehabilitation Engineering & Assistive Technology)
President, CREATe Asia (Coalition on Rehabilitation Engineering & Assistive Technology of Asia)

Program at a Glance

<table>
<tr><th rowspan="2">Time</th><th rowspan="2">Main Hall</th><th colspan="2">Room 501</th></tr>
<tr><th>Poster</th><th>gSIC</th></tr>
<tr><td colspan="4">DAY 1 (August 22, 2017)</td></tr>
<tr><td>10:00</td><td></td><td rowspan="3">10:00-13:00

Poster Mounting</td><td>10:00-11:00

gSIC
Exhibition
Preparation</td></tr>
<tr><td>11:00</td><td></td><td rowspan="2">11:00-13:00

gSIC
Exhibition</td></tr>
<tr><td>12:00</td><td></td></tr>
<tr><td>13:00</td><td colspan="3">13:00-14:00

Lunch</td></tr>
<tr><td>14:00</td><td>14:00-15:00

Plenary Lecture 1
Development of Rehabilitation Robotics in China
by Hong-liu Yu</td><td rowspan="2">14:00-15:30

Poster Presentation
Free Discussion</td><td>14:00-15:10

gSIC
Exhibition</td></tr>
<tr><td>15:00</td><td></td><td></td></tr>
<tr><td></td><td colspan="3">15:30-16:00

Tea Break</td></tr>
<tr><td>16:00</td><td>16:00-17:30

Paper (PP1)
Hand Exoskeleton /
Upp-Limb Prosthesis</td><td>16:00-17:00

Poster Presentation
Free Discussion</td><td>16:00-17:30

gSIC
Judge Walk</td></tr>
<tr><td>17:00</td><td></td><td rowspan="2"></td><td></td></tr>
<tr><td>18:00</td><td></td><td></td><td></td></tr>
</table>

Program at a Glance

Time	Room 502	Room 503	Room 504-5
DAY 1 (August 22, 2017)			
10:00			
11:00	11:00-12:47 gSIC Presentation (Design)		11:00-12:47 gSIC Presentation (Technology)
12:00			
13:00	13:00-14:00 Lunch		13:00-14:00 Lunch
14:00			14:00-14:55 gSIC Presentation (Technology)
15:00			
	15:30-16:00 Tea Break		15:30-16:00 Tea Break
16:00	16:00-17:15 Paper (PP2) Language / Communication		16:00-17:45 Paper (PP3) Life Support
17:00			
18:00			

Program at a Glance

Time	Main Hall	Room 501	
		Poster	gSIC
DAY 2 (August 23, 2017)			
9:00			
		09:30-11:30	09:30-11:30
10:00	10:00-11:30	Poster Presentation Free Discussion	gSIC Exhibition
	Plenary Lecture 2 Intelligent Robot Control for Supporting Human Behaviors by Shingo Shimoda		
11:00			
	11:30-12:30		
12:00	Lunch		
	12:30-14:00	12:30-15:45	12:30-15:45
13:00	Special Lecture Technology for the Deafblind and Its Possibility and Limitation by Akiko Fukuda	Poster Presentation Free Discussion	gSIC Exhibition
14:00			
	14:10-15:40		
15:00	Plenary Lecture 3 Research and Innovation of Assistive Technology – User Participation and field–based Innovation by Takenobu Inoue		
	15:45-16:10		
16:00	Tea Break		
	16:10-17:30	16:10-17:30	16:10-17:30
17:00	Plenary Lecture 4 From Patient Individual Surgical Robots to Automated Design of Assistance Mechanisms: CAD Systems for the Human Body and Certification of Products by Tim C. Lueth	Poster Presentation Free Discussion	gSIC Exhibition

Program at a Glance

Time	Room 502	Room 503	Room 504-5
DAY 2 (August 23, 2017)			
9:00			
	9:45-11:00 Paper (PP4) Mobility		
10:00			
11:00			
	11:30-12:30 Lunch		
12:00			
13:00			
14:00			
	14:10-15:10 Paper (PP5) Research & Development		
15:00			
	15:45-16:10 Tea Break		
16:00			
17:00			

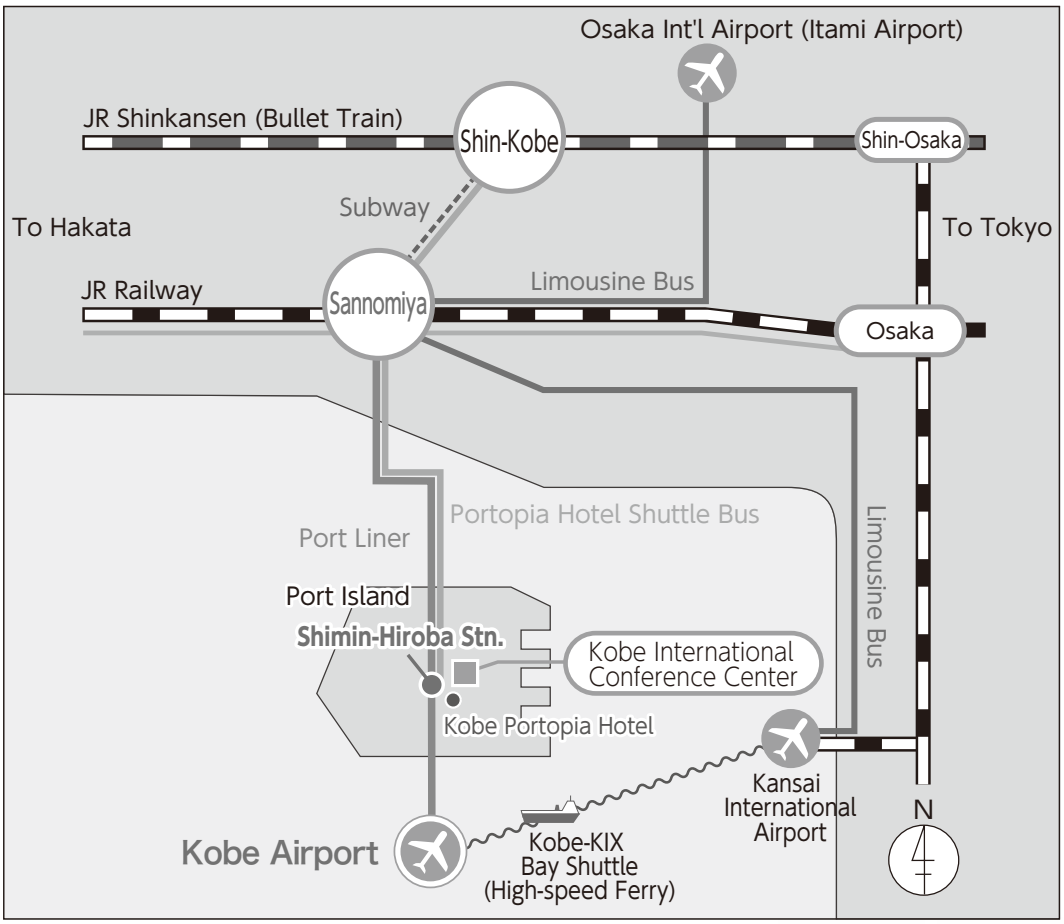
Program at a Glance

Time	Main Hall	Room 501	
		Poster	gSIC
DAY 3 (August 24, 2017)			
9:00			
	09:15-10:15 Paper (PP6) AT Situation (Nation/Region)	09:15-10:15 Poster Presentation Free Discussion	09:15-10:15 gSIC Exhibition
10:00			
	10:15-10:45 Tea Break		
	10:45-12:00 Plenary Lecture 5 Utilization of Welfare Equipment in Aging Society – Current Status and Issue in Japan by Haruki Nakamura	10:45-12:00 Poster Presentation Free Discussion	10:45-12:00 gSIC Exhibition
11:00			
12:00	12:00-12:10 Closing Remarks by Takaaki Chin		
13:00	13:00-15:00 WKC Forum Role of Assistive Technology in Rapid Aging in Asia and the World in collaboration with WHO Centre for Health Development (WHO Kobe Centre)		
14:00			
15:00			
16:00			
17:00			

Program at a Glance

Time	Room 502	Room 503	Room 504-5
DAY 3 (August 24, 2017)			
9:00			
10:00		9:30-11:30 CREATe Asia Meeting (only for Members)	09:30-11:30 Workshop Empowering Person-centred Decision-making: Service Strategies for Complex Assistive Technology Selection by Rachael Elliott Schmidt
	Tea Break		
11:00	10:45-11:45 Paper (PP7) Lower Limb Orthosis/ Prosthesis		11:30-12:00 Paper (PP8) Special Education
12:00			
13:00			
14:00			
15:00			
16:00	15:30-18:30 Technical Tour Destination: Hyogo Rehabilitation Center (HRC) *Registration fee is required for this program (JPY3,000). *Please ask at reception at 3F on KICC		
17:00			

Access



From the Airport

- Kobe Airport — 【Port Liner : 8min.】 → Shimin-Hiroba stn.
- Osaka Int'l Airport (Itami Airport) — 【Limousine Bus : 40min.】 → Sannomiya stn. — 【Port Liner : 10min.】 → Shimin-Hiroba stn.
- Kansai International Airport — 【Limousine Bus : 70min.】 → Sannomiya stn.
- Kansai International Airport — 【Bay Shuttle : 30min.】 → Kobe Airport — 【Port Liner : 8min.】 → Shimin-Hiroba stn.

From Shin-Kobe Station (JR Shinkansen)

- Shin-Kobe stn. — 【Taxi : 20min.】 → Shimin-Hiroba stn.
- Shin-Kobe stn. — 【Subway : 2min.】 → Sannomiya stn. — 【Port Liner : 10min.】 → Shimin-Hiroba stn.
- Sannomiya stn. — 【Portopia Hotel Shuttle Bus : 15min.】 → Kobe Portopia Hotel
- Shin-Kobe stn. — 【Portopia Hotel Shuttle Bus : 25min.】 → Kobe Portopia Hotel

Kobe Portopia Hotel Courtesy Shuttle Bus Information (Free of charge)

All participants of i-CREATe2017 (even if you don't stay at the Kobe Portopia Hotel) can get on free shuttle bus from Sannomiya Station and Shin-Kobe Station to Kobe Portopia Hotel. Departures every 20 minutes from the Kobe Portopia Hotel, Sannomiya Station and Shin Kobe Station.

Hotel to Sannomiya·Shin Kobe			
About 15 min to Sannomiya About 25 min to Sihn Kobe			
7		20	40
8	0	20	40
9	0	20	40
10	0	20	40
11	0	20	40
12	0	20	40
13	0	20	40
14	0	20	40
15	0	20	40
16	0	20	40
17	0	20	40
18	0	20	40
19	0	20	40
20	0	20	40
21	0	20	40
22	0	※Final stop is Sannomiya	

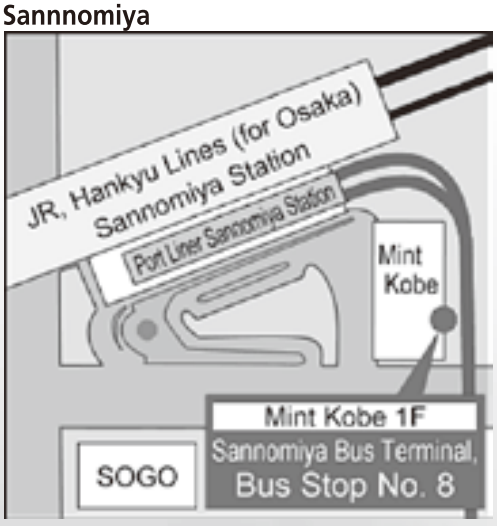
Sannomiya to Hotel			
About 15 min to hotel			
7			
8	0	20	40
9	0	20	40
10	0	20	40
11	0	20	40
12	0	20	40
13	0	20	40
14	0	20	40
15	0	20	40
16	0	20	40
17	0	20	40
18	0	20	40
19	0	20	40
20	0	20	40
21	0	20	40
22			

Shin Kobe to Hotel			
About 25 min to hotel			
7			50
8	10	30	50
9	10	30	50
10	10	30	50
11	10	30	50
12	10	30	50
13	10	30	50
14	10	30	50
15	10	30	50
16	10	30	50
17	10	30	50
18	10	30	50
19	10	30	50
20	10	30	50
21	10	30	
22			

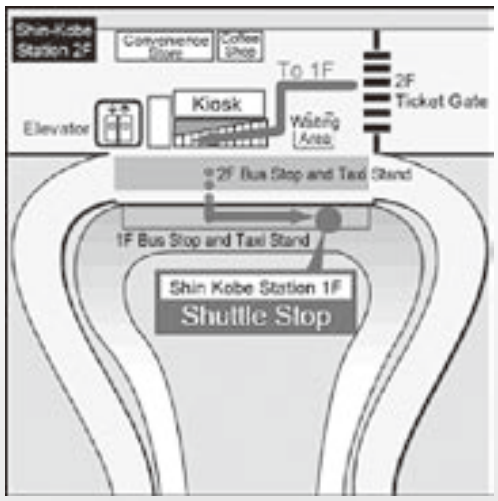
※ Numbers in Bold are for extra shuttles on Saturdays and peak season days (January 1-3). Please note that these shuttles only go to Sannomiya Station.

Bus Stop Maps

Sannnomiya



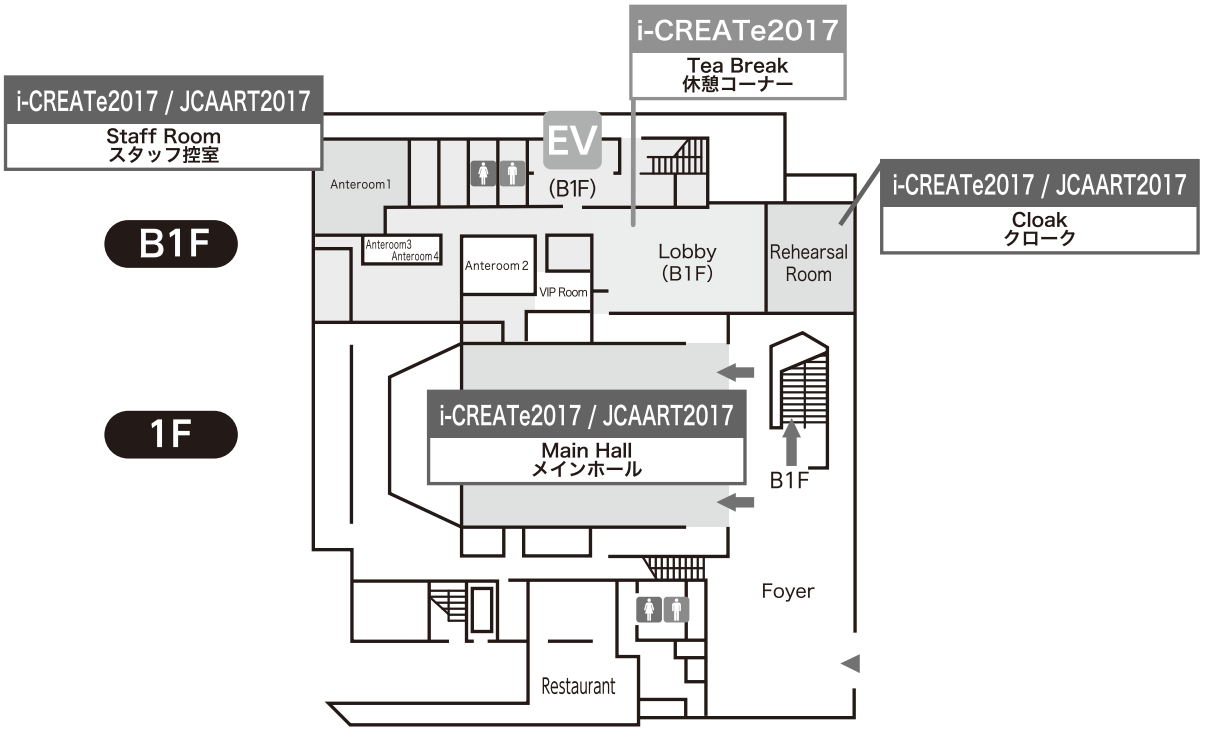
Shin Kobe

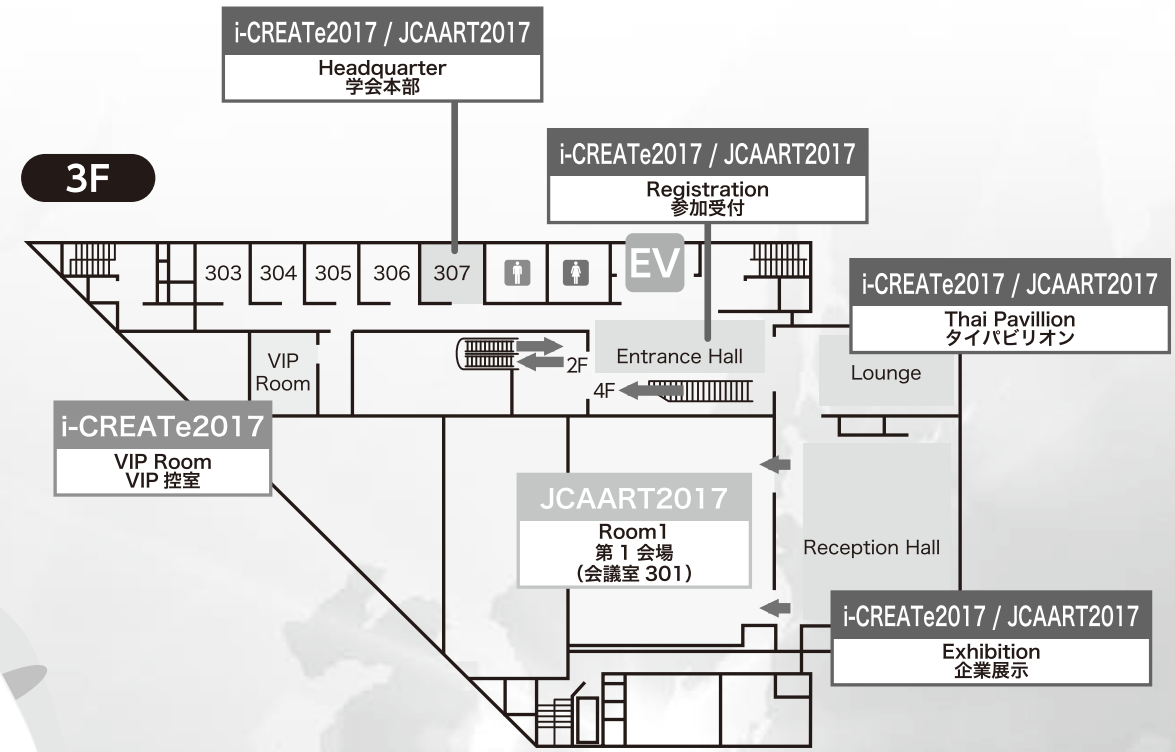


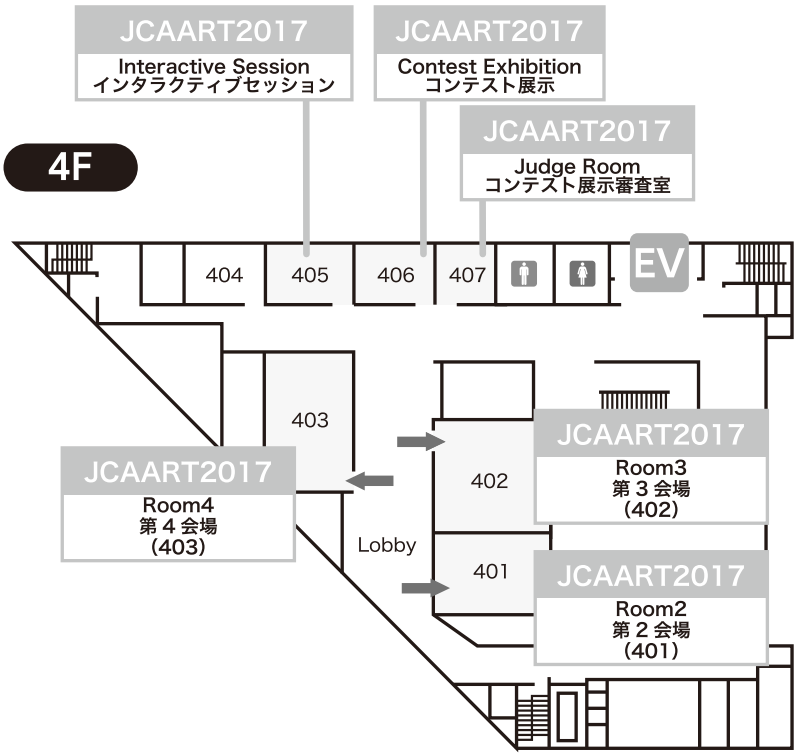
※ Seating is limited. In the event the shuttle bus reaches capacity, please wait for the next shuttle bus.
※ Depending on traffic conditions, the shuttle bus may run behind schedule.
※ Tickets are not required for the shuttle bus. Seating is on a first come, first served basis (reservations not available). Thank you for your understanding.
※ The shuttle schedule may change without prior notice. Please call to reconfirm the schedule prior to your visit.

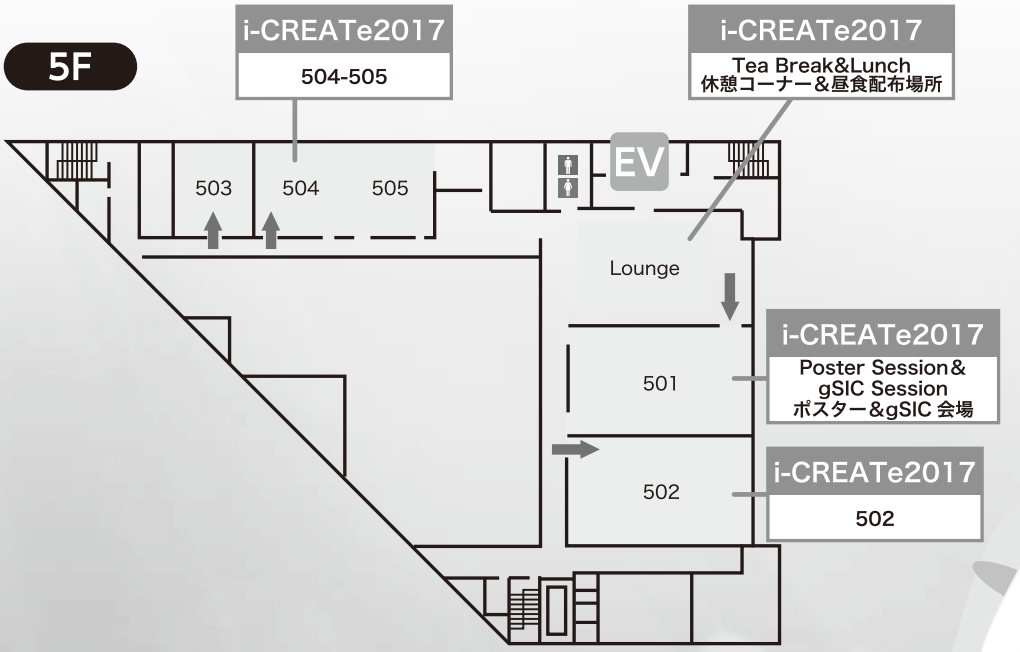
Floor Map

■Kobe International Conference Center






JCAART2017
Interactive Session
インタラクティブセッション
JCAART2017
Contest Exhibition
コンテスト展示
JCAART2017
Judge Room
コンテスト展示審査室
4F
404
405
406
407
EV
403
JCAART2017
Room4
第４会場
(403)
Lobby
402
JCAART2017
Room3
第３会場
(402)
401
JCAART2017
Room2
第２会場
(401)


5F
i-CREATe2017
504-505
i-CREATe2017
Tea Break&Lunch
休憩コーナー＆昼食配布場所
503
504
505
EV
Lounge
i-CREATe2017
Poster Session＆
gSIC Session
ポスター＆gSIC 会場
501
502
i-CREATe2017
502

Information for Participants

1. Dates

August 22 (Tue) – August 24 (Thu), 2017

*The 32nd Japanese Conference on the Advancement of Assistive and Rehabilitation Technology (32JCARRT) is held on August 22 – 24, 2017.

2. Venue

Kobe International Conference Center (KICC)

6-9-1, Minatojima Nakamachi, Chuo-ku, Kobe, 650-0046, Japan

TEL: +81-78-302-5200 FAX: +81-78-302-6485

Website: http://kobe-cc.jp/english/kaigi/index.html

3. Language

English

4. Registration

- Information and registration desks are located on 3rd floor of Kobe International Conference Center.
- Please register and receive your nametag at registration desk.
- Lunch box tickets is included in your nametag. Please receive lunch box in exchange of these tickets on August 22 and 23. Please note there is no lunch on August 24.
- All participants are required to wear their nametags in order to enter presentation rooms during this meeting.

5. Registration Desk Opening Hours

Date	Time	Place
August 22	10:00-18:00	3F, Entrance Hall
August 23	8:45-17:00	3F, Entrance Hall
August 24	9:00-11:30	3F, Entrance Hall

6. Registration Fee

(JPY)

Registration Category	On-site Registration
CREATe Asia Alliance members*1	60,000
Participant	78,000
One Day*2	30,000
Student	45,000
Person with disabilities / Person at and over 65 years old	45,000
Accompanying Person for assistance*3	Free of charge
gSIC (not over 4 persons) *4	78,000 / group
gSIC (5 persons) *4	84,000 / group
Technical Tour	3,000
Gala Dinner	7,000

*1 CREATe Asia Alliance members are as follows:

1) Australian Rehabilitation Assistive Technology Association (ARATA), Australia
2) China Association of Assistive Products (CAAP), China
3) Hong Kong Occupational Therapy Association (HKOTA), Hong Kong
4) Hyogo Institute of Assistive Technology (HIAT) / Hyogo Rehabilitation Center (HRC), Japan
5) Assistive Technology, Australia
6) Independent Living Services (ILSNZ), New Zealand
7) Korean Association of Assistive Technology Professionals (KAATP), South Korea
8) National Science and Technology Development Agency (NSTDA), Thailand
9) Rehabilitation Engineering Society of Japan (RESJA), Japan
10) Singapore Therapeutic, Assistive & Rehabilitative Technology (START) Centre, Singapore
11) Taiwan Rehabilitation Engineering and Assistive Technology Society (TREATS), Taiwan
12) University of Shanghai for Science & Technology (USST), China
13) Universiti Teknologi Malaysia (UTM), Malaysia

*2 All presenters must pay full registration fee. You are NOT allowed to have your presentation with one-day registration fee.

*3 Accompanying Person for assistance is a helper for the registered person with disabilities or aged at or over 65 years old.

*4 gSIC group registration fee is for one same presentation group. You can NOT apply group registration if you and other person are different presentation group.

7. Cloak

- Cloak is available for the following hours.
- Please note that the valuables are unacceptable.
- Please note participants to WKC forum should pick up their baggage by 12:30 on August 24.

Date	Time	Place
August 22	10:00-18:00	B1F, Lobby
August 23	8:45-18:45	B1F, Lobby
August 24	9:00-12:30	B1F, Lobby

8. Lunch Box & Refreshment

- Lunch Box will be provided at 5F on Kobe International Conference Center on August 22 and 23. Please use the ticket with your nametag.
- Refreshment will be offered on B1F and 5F of Kobe International Conference Center.

9. Gala Dinner

- Gala Dinner will be held at “Kairaku” on B1F of Kobe Portopia Hotel

  Place: “Kairaku”, B1F, Kobe Portopia Hotel

  Date & Time: August 23, 2017 18:00-20:00

  Admission fee: JPY7,000

  Dress code: Business Attire

10. Internet / Wi-Fi

- You can access the internet through your PC if your PC access to Wi-Fi. The internet access is available at the congress venue.

  SSID: i-create2017

  Password: Please check at the information board to get the password.

11. Abstract Download

- All participants are able to download all abstracts of presenters, Please access to the website and download them with the following password.
  Password: icreate2017

12. Mobile Phones / Recording / Video recording / Photo shooting

- Please power off your mobile phone or set to the manner mode in the presentation room. Please also refrain from recording / video recording / photo shooting without permission.

13. Smoking

- Smoking is prohibited in all areas of the congress venue.

14. Paging Service

- We do not make any announcement for paging someone at the venue.
- Please use message board near registration desk.

15. Message Board

- Please feel free to use message board near registration desk in the venue, if necessary.

16. ATM

- ATM in “FamilyMart” of Kobe Portopia Hotel is available for overseas participants.

Organizing Committees

Title	Name	Organization
Advisors	Thaweesak KOANANTAKOOL	National Science and Technology Development Agency, Thailand
	Pairash THAJCHAYAPONG	National Science and Technology Development Agency, Thailand
	Wei Tech ANG	Nanyang Technological University, Singapore
	Yubo FAN	National Research Center for Rehabilitation Technical Aids
	Xiaoyu ZHANG	China Association of Assistive Products, China
General Co-Chairs	Takaaki CHIN	Robot Rehabilitation Center in Hyogo Rehabilitation Center, Japan
	Hong Liu YU	University of Shanghai for Science and Technology, China
Program Co-Chairs (Scientific)	Yuichiro HONDA	Robot Rehabilitation Center in Hyogo Rehabilitation Center, Japan
	Sarun SUMRIDDETCHKAJORN	National Electronics and Computer Technology Center, Thailand
	Jue WANG	Xian Jiaotong University, China
Program Co-Chairs (SIC)	Jiro SAGARA	Kobe Design University, Japan
	Kriskrai SITTHISERIPRATIP	National Metal and Materials Technology Center, Thailand
	Olivier LAMBERCY	ETH Zuerich, Switzerland
	Renzo ANDRICH	Centre for Innovation and Technology Transfer / IRCCS Fondazione Don Carlo Gnocchi, Italy
SIC Judges	Yuichiro HONDA	Robot Rehabilitation Center in Hyogo Rehabilitation Center, Japan
	Makoto OSHIMA	Nagoya University of Arts and Sciences, Japan
	Piyawut SRICHAIKUL	National Electronics and Computer Technology Center, Thailand
	Kriskrai SITTHISERIPRATIP	National Metal and Materials Technology Center, Thailand

SIC Judges	Simon WONG	Hong Kong Occupational Therapy Association, Hong Kong
	Robyn CHAPMAN	Assistive Technology Australia Independent Living Centre NSW, Australia
	Dingguo ZHANG	Shanghai Jiaotong University, China
	Ta Chieh (Jerry) HSU	Taiwan Rehabilitation Engineering and Assistive Technology Society, Taiwan
	Jiunn-Horng KANG	Taiwan Rehabilitation Engineering and Assistive Technology Society, Taiwan
Publication Co-Chairs	Pasin ISRASENA	National Electronics and Computer Technology Center, Thailand
	Shih-Ching CHEN	Taiwan Rehabilitation Engineering and Assistive Technology Society, Taiwan
Publicity Co-Chairs	Wantanee PHANTACHAT	National Electronics and Computer Technology Center, Thailand
	Robyn CHAPMAN	Assistive Technology Australia Independent Living Centre NSW, Australia
Committees for Publicity	Siritham NARANONG	Biomedical Consortium, National Nanotechnology Center, Thailand
	Wenming CHEN	University of Shanghai for Science and Technology, China
	Simon WONG	Hong Kong Occupational Therapy Association, Hong Kong
	Chih-Wei PENG	Taiwan Rehabilitation Engineering and Assistive Technology Society, Taiwan
Conference Secretaries	Yasushi AKAZAWA	The Hyogo Institute of Assistive Technology, Hyogo Rehabilitation Center, Japan
	Sarinya CHOMPOOBUTR	National Electronics and Computer Technology Center, Thailand
	Vera YANG	Singapore Therapeutic, Assistive and Rehabilitative Technologies Centre, Singapore
Webmaster	Shy YUN	Singapore Therapeutic, Assistive and Rehabilitative Technologies Centre, Singapore

Information for Chairpersons and Presenters

1. Allocated time for Presentations

- Chairpersons are requested to be seated in the Next Chairperson's Seat 10 minutes before your session. The seat is on the right of the venue.
- All speakers of oral presentation are requested to be seated in the Next Speaker's Seat 10 minutes before your presentation.

  * Your punctuality would be highly appreciated.

<Allocated time>

Oral: 15 minutes (12min for presentation, 3 min for Q&A)

Poster: Free Discussion

Discussion time: August 22 14:00-17:00
August 23 9:30-17:30
August 24 9:15-12:00

2. Presentation Data

- There is no Presentation Preview Desk for this meeting.
- Please stop by and check your data at your presentation room while there is no session.

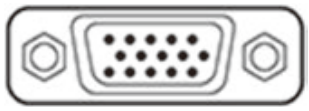
3. Personal Computer (PC) Presentations

- Please bring your presentation data on a USB flash memory stick, or on a laptop itself.

  [NOTE]
  - Macintosh users are required to bring your own laptop.
  - If video data is included in the presentation data, please bring your own laptop too.
  - PowerPoint is the only application accepted.
- Please adhere to the allotted presentation time.
- Please follow the Chairperson's lead under any circumstances.

4. Precautions When Bringing Your Own Laptop

- Please cancel the password, screensaver, and power-saving settings in advance.
- The connection for the output connector
  “Mini D-sub 15 pin”
  on the right is available.



- The resolution is XGA (1024 × 768).
  If you have a different output connector, please bring an appropriate conversion connector.
  Also, please remember to bring your computer’s AC adapter.
- Please make sure to prepare a back-up data on media though it is saved in your PC.
- Please take the laptop with you to the Operation Desk 15 minutes before your presentation. The Operation Desk is located at the front left side of the room for your session.

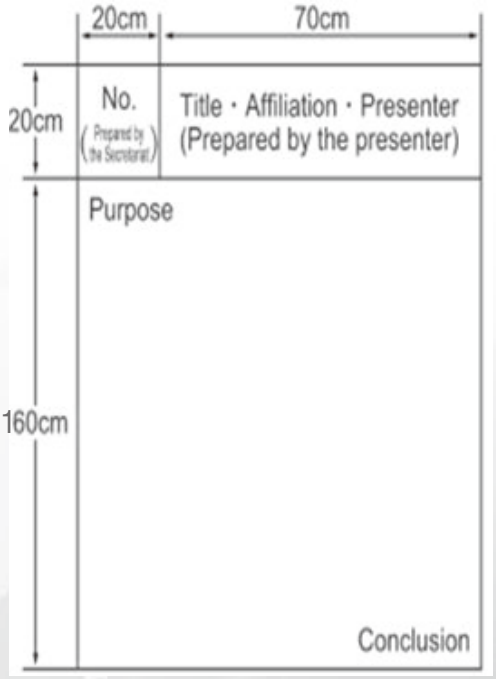
5. Precautions When Bringing Media

- All equipments are compliant for Windows 7.
  * Please note that it is not compatible with Macintosh.
- Windows PowerPoint 2007/2010/2013/2016 are acceptable.
- Please use standard fonts such as Arial, Century, Times New Roman, etc.
- If you are using video data, please bring your own laptop.
- Video data for PowerPoint presentations should be able to run in codec with default state of Windows 7 (OS) and Windows Media Player 12. To have it linked with PowerPoint, please save your data in the same folder.
- Please make sure to check your data on a different computer to see whether the data can be played without any errors.
- There should be only your presentation data saved in your media.
- Please check your copied data on other PC beforehand to avoid copying the wrong data.
- Please check your data with Virus Scanner.
- Please be sure to bring your back-up data with you.

6. Poster Presentation

	Date & Time
Poster set-up	August 22 10:00-13:00
Poster viewing/ Free Discussion	August 22 14:00-17:00 August 23 9:30-17:30 August 24 9:15-12:00
Poster removal	August 24 12:00-13:00

- Panel size is 180 × 90 cm.
- Presentation number, ribbon and pin will be provided in advance on your poster panel: please refer to the sample.
- The presenter must prepare the title for your panel.
- All poster presenters are recommended to decide your discussion time independently and show it on nearly your poster title.
- It is your responsibility to remove your posters. **The Secretariat will dispose of any posters that are left behind after the poster removal time.**



gSIC-AT@i-CREATe2017

Student Innovation Challenge (gSIC-AT) is an annual event held at the international Convention on Rehabilitation Engineering and Assistive Technology (i-CREATe).
It provides a platform to encourage students from all over the world to compete with one another in developing creative and innovative devices or solutions to improve the quality of living of elderly and people with disabilities, and to improve the quality of professional practice in rehabilitation. It showcases the extraordinary talents of these students while providing them the opportunity to work with clients and clinicians to develop these innovative ideas. There are 2 categories in this challenge.

Design Category

Students are expected to apply User-Centered Design process to produce a solution that 'makes life easier' for its users or enhance the user experience (UX) or improves the quality of professional rehabilitation practice. The solution may or may not be technology based.

Technology Category

Students are expected to apply principles in Engineering and Information Technology to design and implement Assistive & Rehabilitation Technology solution to address the issues/problems faced by the needy, their caregivers and clinicians. The solution must have engineering or technological component(s).

Judging

There are 2 rounds of judging.

Oral Presentation

Place: 5F Room 504-5 for Technology Category
5F Room 502 for Design Category
Date&Time: August 22, 2017 11:00-15:00
Presentation time: 5minutes for presentation, 2 minutes for Q&A

Prototype Demonstration

Place: 5F Room 501

Date&Time: August 22, 2017 16:00-17:00

Judges walk around all stands and interview approximately 5minutes to each presenter.

A panel of international judges of different professional backgrounds will be invited to judge on the projects. All judges' score based on the judging criteria will carry equal weight and decision of the winners need not be unanimous.

Poster & Prototype Display

All teams are required to display their poster and prototype at Room 501.

Awards

All awards will be announced at information desk on August 23, 2017 after the judgement on August 22.

Gold Award*1 for Design and Technology Category	USD 1,400 A trophy and certificates for all members
Silver Award*1 for Design and Technology Category	USD 700 A trophy and certificates for all members
Bronze Award*1 for Design and Technology Category	USD 350 A trophy and certificates for all members
Merit Award (two) for Design and Technology Category	A trophy and certificates for all members
Best Presentation Award*2 for Design and Technology Category	A trophy and certificates for all members
Best Poster Award*3 for Design and Technology Category	A trophy and certificates for all members
Best Prototype Award for Technology*4	A trophy and certificates for all members
Best Ergonomic Award for Design*4	A trophy and certificates for all members
Peers' Choice Award*5	A trophy and certificates for all members
Public's Choice Award*6	A trophy and certificates for all members

*1 Gold, Silver and Bronze Award will have award ceremony at Gala Dinner. Please check at the information desk on August 23, 2017. All members for these awards are invited to Gala Dinner.

*2 Best Presentation Award will be decided based on the presentation part.

*3 Best Poster Award will be decided based on the poster part.

*4 Best Prototype Award for Technology and Best Ergonomic Award for Design will be selected based on the prototype part.

*5 Peers' Choice Award will be selected by gSIC-AT participants. Each team is allowed to vote one team except its own team as the most deserving team.

*6 Public's Choice Award will be selected by all participants of this meeting. Please select one team after visiting gSIC-AT booths.