Japan-UK Robotics Seminar 2015

22nd April 2015
Embassy of Japan in the UK

-Programme-

16:30 **Opening remarks**
By Ambassador Keiichi Hayashi

16:40-16:55 **The New Robot Strategy in Japan**
By Mr Kazuyuki Imazato, Ministry of Economy, Trade and Industry in Japan

16:55-17:10 **Robotics in the UK**
By Mr Geoff Pegman, UK Trade & Investment

17:10-17:35 **Trends of R&D and Utilisation of Robot Technology in Japan**
By Professor Hajime Asama, University of Tokyo

17:35-18:00 **Building the UK Robotics and Autonomous Systems (RAS) Innovation Pipeline - Strategy and Exemplar**
By Professor David Lane FREng FRSE, Director, Edinburgh Centre for Robotics

18:00- **Discussion and Q&A**

18:30- **Networking reception**

- Abstracts and Biographies -

Mr Kazuyuki Imazato

Deputy Director, Industrial Machinery Division, Manufacturing Industries Bureau,
Ministry of Economy, Trade and Industry (METI)

The New Robot Strategy in Japan

From the 1980s onwards, Japan continues to maintain its status as “Robotics Superpower” in various aspects such as robot production and utilization with focus on the manufacturing field which Japan boasts to the world.

At the same time, Japan is seeing low birth rate and the aging of the population at a speed unprecedented in the rest of the world, and consequently Japan becomes an advanced country of challenging issues that, before any country else, face issues such as the decrease of the productive-age population and the expansion of social welfare spending. To cope with these issues, there is an increasing possibility to utilize robots.

On the other hand, recently in both developed countries such as Europe and America and emerging countries such as China, there is a renewed interest in robots as a key to growth, and they are rapidly catching up Japan, so that projects led by their governments are starting one after another.

In the background of the new international competition about robots, there is a full-fledged advent of the IoT age where digital data and virtual networks play a central role. In this competition, huge amount of data collected through practical and specific utilization of robots will serve all the more as a driving force for advancement of robots in data-driven innovation era.

In such a worldwide trend, Japan has a big potentiality of making utmost use of the advantage of having both robot technology cultivated so far and fields requiring issue solved by robots, taking a step toward a new industrial revolution with robots being the core, and achieving actual issue solving one by one ahead the world.

From this point of view, the Japanese government published "New Robot Strategy" in January 2015. Today, I'll introduce the brief background and the overall picture of the strategy.

Biography

2013-Date	Deputy Director, Industrial Machinery Division, Manufacturing Industries Bureau
2003	Joined METI and have experienced in structural reform of the Japanese economy and trade policy of manufacturing sector.

Master of Science: University of Tokyo(2003)

Master of Public Policy: Carnegie Mellon University(2011)

Mr Geoff Pegman
Robotics Sector Specialist, Innovation Gateway,
UK Trade and Investment (UKTI)

Robotics in the UK

This presentation will provide an overview of the robotic landscape in the UK highlighting the breadth of coverage of applications and research, as well as highlighting some of the mechanisms of public support. Robotics and Autonomous Systems (RAS) is one of the UK 8 Great Technologies. The presentation will provide an overview of the strong research capability in the UK. It will also describe some of the application areas in which there are opportunities for RAS in the UK as well as providing some snapshots of companies providing products and services for these applications.

Biography

Geoff Pegman joined the UKTI team on 1st January 2015 as a Robotics Sector Specialist. Geoff is a robotics and innovation expert with over 26 years' experience in the service robot industry. He has direct experience of directing, managing and participating in research and development programmes as well as the development of prototype equipment in the area of advanced and flexible robotics for industries as diverse as aerospace, construction, defence, food, manufacturing, nuclear, subsea and medical.

Geoff has run several successful robotics companies and also spun off several other related high-technology companies. He is very active in both UK and European robotics activities being an active member of the UK RAS SIG, the British Automation and Robotics Association (BARA) and the EC Robotics PPP (SPARC), amongst others as well as being the Vice President of the International Advanced Robotics Programme (IARP).

Professor Hajime Asama
University of Tokyo, Department of Precision Engineering

Trends of R&D and Utilisation of Robot Technology in Japan

The structure robotics research field is introduced including to the new trends of R&D of Robot Technology (RT) in Japan, and utilization of RT towards its societal dissemination is discussed, especially focusing on disaster response robots.

Biography

Hajime Asama received his B. S., M. S., and Dr. Eng in Engineering from the University of Tokyo, in 1982, 1984 and 1989, respectively. He was a Research Scientist, etc. in RIKEN Japan from 1986 to 2002. He became a professor of RACE, the University of Tokyo in 2002, and a professor of School of Engineering, the University of Tokyo since 2009. He received JSME Robotics and Mechatronics Award in 2009, RSJ Distinguished Service Award in 2013, etc.

He was the vice-president of Robotics Society of Japan in 2011-2012, an AdCom member of IEEE Robotics and Automation Society in 2007-2009, the president of International Society for Intelligent Autonomous Systems from 2014, an associate editor of Journal of Field Robotics, Journal of Robotics and Autonomous Systems, and Control Engineering Practice, etc. He is a Fellow of JSME and RSJ.

Currently, he is a member of technical committee of Nuclear Damage Compensation and Decommissioning Facilitation Corporation (NDF), a member of technical committee of International Research Institute for Nuclear Decommissioning (IRID), a member of technical committee on mockup testing facility of Japan Atomic Energy Agency (JAEA), the project leader on Disaster Response Robots of the Council on Competitiveness-Japan (COCN), etc.

His main research interests are distributed autonomous robotic systems, smart spaces, service engineering, and Mobiligence, and service robotics.

Professor David Lane FREng FRSE
Director, Edinburgh Centre for Robotics

Building the UK Robotics and Autonomous Systems (RAS) Innovation Pipeline - Strategy and Exemplar

The presentation will review the key strands and rationale behind the RAS2020 UK Robotics and Autonomous Systems Strategy aiming to create and boost the UK's RAS innovation pipeline. It was published in July 2014 by the Innovate UK RAS Special Interest Group following 18 months of workshops and dialog amongst UK stakeholders in academia, industry and government. To illustrate one specific exemplar of this in action, the presentation will review the creation of The Edinburgh Centre for Robotics, a £35M joint venture between Heriot-Watt and Edinburgh Universities, and the ROBOTARIUM national facility for research into the Interaction between robots, people and environments. As an innovation exemplar, the Centre's Ocean Systems Laboratory spun out SeeByte Ltd and Inc, providing smart software for new generations of unmanned underwater vehicles and their operators. Its products are used by over a dozen Navies worldwide, and are at the heart of the Subsea7 Autonomous Inspection Vehicle, revolutionising inspection repair and maintenance of deepwater oilfields.

http://www.offshoreenergytoday.com/subsea-7-aiv-completes-first-test-mission-for-shell-video/

Biography

David Lane graduated in 1980 with a BSc in Electrical and Electronic Engineering from Heriot-Watt University, Edinburgh, and again in 1986 with a PhD in Underwater Robotics. In 1979 he worked offshore in the North Sea as diver/maintainer for British Oceanics Ltd, and from 1980-82 as a Development Engineer at Ferranti Ltd. From 1982 he held a series of research and academic appointments, culminating in a Professorial Chair at Heriot-Watt University in 1998, and visiting Professorships at Florida Atlantic University in 1999 and Edinburgh University from 2006. In 1995 he took up Directorship of the University's Ocean Systems Laboratory and led it's development to a staff of 30 with £27M total funding from the UK Research Councils, Ministry of Defence, European Union and US Office of Naval Research.

In 2001 he founded SeeByte Ltd (http://www.seebyte.com) and as CEO until 2010 lead the company's organic evolution from startup to a multi-million dollar organization, growing at an average 45% pa during the recession, continually cash positive, with 75% of its business in exports to three continents and offices in Edinburgh, San Diego and Seattle. Under his leadership SeeByte won their first $8-figure export contract (US Navy) in 2009 and in 2010

an $8-figure new autonomous vehicle development for the offshore oil industry, in partnership with Subsea 7. In 2007 he became President of SeeByte Inc. The company won the 2010 Praxis Unico Business Impact Achieved Award and 2013 Scottish Digital Technology Award for International Growth. At exit in 2013 to Bluefin Robotics, Boston, Mass. (a subsidiary of Battelle), 43 shareholders benefited.

In 1995 he was H.Burr Steinbach Visiting Fellow at the Woods Hole Oceanographic Institution, and in 2007 was Scientific Advisor to the NATO Undersea Research Centre, La Spezia, Italy.

Currently he is Founder and Director of the Edinburgh Centre for Robotics, (www.edinburgh-robotics.org) a £35M joint venture between Heriot-Watt and Edinburgh Universities, involving some 30 world leading investigators in 12 cross disciplinary research groups across Engineering and Informatics. It includes the EPSRC Centre for Doctoral Training in Robotics and Autonomous Systems (RAS), and the ROBOTARIUM National Equipment Facility for Research into Robot Interaction. He also co-ordinates the EU FP7 Challenge 2 project PANDORA, (www.persistentautonomy.com), and leads in others (http://www.arrowsproject.eu, http://www.robocademy.eu/).

Nationally, since 2013 he chairs the BIS/TSB Robotics and Autonomous Systems Special Interest Group (RAS-SIG) reporting to Minister for Universities and Science (one of the 8 Great Technologies underpinning UK Govt industrial strategy) developing the UKs RAS innovation pipeline for jobs and growth. Since 2013 he is a Director of the euRobotics aisbl not-for-profit that shapes Horizon2020 Robotics PPP between research and industry.

He has been elected to Fellowships of the Royal Academy of Engineering, the Royal Society of Edinburgh, the Royal Geographical Society, the Institution of Engineering and Technology, the Society for Underwater Technology and the Court of Heriot-Watt University (2011-14).

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