

Japan-UK Brain Machine Interface International Workshop Statement

The Japan-UK Brain Machine Interface (hereinafter called BMI) International Workshop was held at Yurakucho Asahi Hall Square in Tokyo on 12th February, 2009. It was attended by researchers in the Strategic Research Program for Brain Sciences (hereafter called SRPBS) promoted by the Ministry of Education, Culture, Sports, Science and Technology, from Japan side, and by researchers who do BMI research in the UK, supported by the British Embassy. There were over 340 participants.

In commemoration of holding the public symposium, expectations and responsibilities for future BMI research by Japan and UK and for future friendship of both countries were stated in the opening greetings by Professor Ichiro Kanazawa (The Chairman of the Science Council of Japan), Professor John Beddington (The British government Chief Scientific Adviser and head of science and technology), Professor Shigetada Nakanishi (Program Director of SRPBS, Director of Osaka Bioscience Institute), and Professor Colin Ingram (Director of the Institute of Neuroscience, Newcastle University). After which, presentations on the latest research concerning BMI were made by researchers from Japan and UK.

Technological advances in both brain science and engineering are opening opportunities for direct interaction between the nervous system and physical devices. Research of this Brain-Machine Interface (BMI) has the opportunity to generate devices both for the benefit of able bodied people and for patients who suffer with some impairment of brain function. The field of BMI research includes implants that can be used to restore lost function of the nervous system, non-invasive devices that can be used to assist humans to perform particular functions, and methods for measurement and interpretation of brain signals that can be used to operate devices.

Both Japan and the UK have research groups which are working on various aspects of BMI research. These projects include work on devices that assist or restore movement, retinal implants to restore sight, cochlear implants to improve or restore hearing, and brain stimulators to correct abnormal activity. Some of them have started collaboration.

In Japan the "Strategy for Innovative Technology" formulated by the Council for Science and Technology Policy, Cabinet Office formulated in May, 2008, included BMI as one of innovative technologies which are expected to generate big spin-off effects into economic society, self-support technology for senior citizens and disabled people and is to be promoted intensively. Support for BMI research has been started as one research area of SRPBS by the Ministry of Education, Culture, Sports, Science and Technology since 2008.

In the UK, BMI research is supported through the Materials, Mechanical and Medical Engineering programme of the Engineering and Physical Sciences Research Council (hereafter called EPSRC). In addition, the Wellcome Trust and EPSRC have launched a

joint initiative in Medical Engineering. EPSRC is now supporting three projects in the area of Brain-Computer Interfaces.

We expressed the wish to contribute to the future development of SRPBS in Japan and of BMI research in the UK by making use of fruitful discussions at this workshop, research momentum for BMI and good bilateral relations between the two countries fostered till now and to continuously promote joint meetings, visiting exchange, and cooperation by researchers in Japan and the UK in order to make the next advances in world BMI research.

February 12, 2009

Professor Shigetada Nakanishi (Program Director of SRPBS)

Professor Colin Ingram (Newcastle University)

Professor Stuart Baker (Newcastle University)

Dr. Mitsuo Kawato (ATR Computational Neuroscience Laboratories)

Dr. Tadashi Isa (National Institute for Physiological Sciences)