

**Co-Chair's Summary
of the 7th Finland-Japan Joint Committee Meeting
on Cooperation in Science and Technology**

The seventh Finland-Japan Joint Committee Meeting (JCM) on Cooperation in Science and Technology was held on November 12th 2020 virtually taking into account the global COVID-19 situation. The Virtual JCM enabled a large number of participants on both sides, with participation of high-level representatives from relevant ministries, funding agencies, research institutions of both countries, the Embassy of Finland in Japan and the Embassy of Japan in Finland.

The Co-chairs, Under-Secretary of State Mr. Petri Peltonen of the Ministry of Economic Affairs and Employment (MEAE) of Finland and H.E. Mr. NAKANE Takeshi, Ambassador for Science and Technology Cooperation of the Ministry of Foreign Affairs (MOFA) of Japan, expressed their contentment on the development of scientific and technological cooperation between Finland and Japan based on the regular JCM organized under the bilateral Agreement on Cooperation in Science and Technology between the Government of Japan and the Government of Finland, which entered into force in 1997.

1. Review of the STI Policies

(1) Finland (MEAE and MECS)

The Ministry of Economic Affairs and Employment and the Ministry of Education, Culture and Science gave a joint presentation of the National Roadmap for Research, Development and Innovation (RDI) accepted by the Government in April 2020. The measures in the Roadmap will improve the global attractiveness of the Finnish RDI environment and encourage businesses to invest more in RDI in Finland. The overall target is to increase the level of RDI investments to equal 4% of GDP as well as introducing the target of 50% of young adults having a higher education degree by 2030. The three strategic development targets and focus areas of the Roadmap are Competences, New partnership model, and Innovative public sector. Additionally, the collaboration between Japanese Council for

Science, Technology and Innovation and Finnish Research and Innovation Council was acknowledged.

(2) Japan (CAO and MEXT)

The Cabinet Office of the Government of Japan (CAO) explained how the Council for Science, Technology and Innovation (CSTI) played a central role in STI policy making including achieving the target of 4% of R & D investment to GDP. Japan also explained the realization of Society 5.0, the promotion of the Moonshot R & D Program, and the current situation of formulating the next Science, Technology and Innovation Basic Plan starting from FY 2021.

Ministry of Education, Culture, Sports, Science and Technology (MEXT) introduced the overview of MEXT's STI policies and ongoing STI cooperation between Finland and Japan. MEXT explained that MEXT is responsible for promoting STI policy and implementing various research and development programs. MEXT also explained that several cooperative activities are taking place between Finland and Japan, such as joint research programs and mobility programs.

2. Arctic Research

(1) Japan (NIPR and MEXT)

National Institute of Polar Research (NIPR) introduced that Japan has launched the new 5-years arctic research project as national flagship project "Arctic Challenge for Sustainability II (ArCS II)" since June 2020. This project consists of 4 Strategic Goals and 2 Priority Subjects and aims to implement the research achievement in the society.

MEXT introduced about the Third Arctic Science Ministerial (ASM3) to be co-hosted by Iceland and Japan, which was postponed to May 2021 due the ongoing global effects of the COVID-19 pandemic. The overarching theme of the ASM3 is "knowledge for a sustainable Arctic".

(2) Finland (University of Helsinki)

Arctic research in Finland is mainly conducted in three universities (Helsinki, Lapland and Oulu) and three state research institutes (FMI, VTT and GTK). At the University of Helsinki,

Arctic research is conducted in seven research groups (Indigenous sustainability, Energy and climate policy, Atmospheric sciences on climate change, Ecological impacts of climate change, Long-term sustainability science, Risk management of shipping, and Climate change and Arctic geography), at the University of Lapland in three research groups (Environmental and minority law, Arctic anthropology, and Geophysics and glaciology), and at the University of Oulu in several departments by individual researchers and teams (Arctic tourism, Human-environment relations, Natural resources, Glaciers and sea ice, Terrestrial and marine ecosystems, and Arctic governance and geopolitical relations). The state research institutes focus on Arctic meteorology (FMI), energy and maritime engineering (VTT), and sustainable mining (GTK). All research groups and institutes are internationally networked, including wide cooperation with Japanese research institutions and scholars.

3. ICT, frequency utilization and technology beyond 5G

(1) Japan (NICT)

There were two presentations from Japanese side. First presentation, "R&D activities with diversification and harmonization toward B5G/6G," was presented by NICT, and includes NICT's R&D activities on the terrestrial wireless communication systems and a possible vision toward 6G requirements.

The second presentation, "Discussion on the use of the THz band in 6G," was presented by NICT, and includes the discussion on the possibility of terahertz band utilization, related NICT's activities and implication on the future Finland-Japan cooperation.

(2) Finland (University of Oulu)

University of Oulu presented the activities and results of 6G Flagship, the world's first 6G research programme. The need for research collaboration between Finland and Japan on 6G was stressed by both sides and concrete collaboration forms will need to be developed next.

4. Health

(1) Finland (MSAH)

The Ministry of Social Affairs and Health of Finland (MSAH) together with Finnish Institute of Health and Welfare, Social and Health Data Permit Authority, Business Finland and Technical Research Centre of Finland, proposed several potential policy, innovation and research cooperation activities in health data sharing, personalized health and technology assisted living for elderly. The activities of common interest should be further investigated.

(2) Japan (AIST)

AIST explained about the research activities on technology for the elderly care and collaborative actions with Finland. After presenting several research projects conducted in AIST, he highlighted the importance of understanding on users, stakeholders and their cultures/institutions for the social implementation of care technology. He also mentioned the ongoing collaborative actions with HyteAiRo project in Finland and future plan under consideration.

5. AI

(1) Finland (MEAE)

In the Finnish AI strategy presentation, it was noted that Finland was among the first countries in the world to launch a national AI strategy in 2017. The new AI 4.0 program, launched in 2020, promotes the 4th Industrial Revolution and investment in the digital transition of the economy and the society. The Global Human-Centric AI-Transformation Research Network (gHAIR) works and studies human-centric AI-transformation in an international collaboration in order to support societal transformation to the age of AI through finding balance between the public, private, and peoples' interests. Participants of JCM were informed about an initial conference to be held on 18th and 19th November with participants from Finland, Japan, and the Republic of Korea.

(2) Japan (CAO)

The Japanese side outlined the AI Strategy formulated in FY 2019 and the activities based on the Strategy to date. Some examples of human resource development, R&D system construction, and social implementation of AI were introduced.

6. Quantum Technologies

(1) Japan (CAO)

The Japanese side explained its national strategy on quantum technology, the "Tokyo Statement on Quantum Cooperation", and the concept of Quantum Technology Innovation Centers.

(2) Finland (VTT)

VTT presented the Finnish Quantum ecosystem including hardware development related to building scalable Quantum Computers. Finnish expertise in building technology and companies related to quantum sensors and devices was highlighted. Finland also has the capability of combining supercomputers with quantum computers for providing unique solutions. Finland looks for partnership in:

1. Finding use-cases for quantum algorithms in various application domains that are strong among Japanese companies (automotive materials, chemicals, etc).
2. Providing scalable components for building quantum computers and also turn-key open-access, quantum computers.

7. Smart City

(1) Finland (VTT)

VTT Technical Research Centre of Finland together with GTK – Geological Survey of Finland presented an overview of Smart City activities in Finland. Innovation ecosystems are important in the development and operation of Smart Cities with a focus on systemic innovations covering environment, society, economy, and technology. Technology is to be used to provide smart people with actionable intelligence to support informed decision-making. Innovation ecosystems such as Smart Otaniemi (smart energy), KEKO (Human centric building intelligence platforms) and innovative underground ecosystems with Geological City Models were presented together with list of different possible collaboration ideas for joint investigation.

(2) Japan (CAO)

The Japanese side explained its concepts on Smart City and “Society 5.0”, and the activities of realizing them. Both sides showed anticipation for further collaboration on smart cities.

8. Review on STI Cooperation Frameworks

(1) Japan (JST, JSPS, and AMED)

Japan Science and Technology Agency (JST) briefly introduced the activities of JST and the STI cooperation frameworks with regards to Finland. The current cooperation in Horizon 2020 under SICORP was introduced, as well as the CONCERT-Japan multilateral framework to which Finland is warmly invited to participate. JST also briefly explained the cooperation framework with the European Research Council (ERC).

Japan Society for the Promotion of Science (JSPS) gave a brief introduction of JSPS’s organization and its support for curiosity-driven research activities. JSPS talked about bilateral cooperation based on the MoU concluded with Academy of Finland and other international mobility programs. JSPS also introduced the activities of JSPS Alumni Club in Finland, which celebrated the 10th anniversary of its founding last year.

Japan Agency for Medical Research and Development (AMED) introduced the overview of AMED’s activities and international collaboration including the global alliances to promote seamless medical research and development as a government funding agency. AMED confirmed that the Strategic International Research Cooperative Program (SICP) coordinated by JST/AMED, the Academy of Finland (FA) and the Finnish Funding Agency for Technology and Innovation (Tekes) was completed in 2017. AMED also explained that AMED and Nordic countries held the workshop focused on life course approaches that make use of digital health/big-data and continued to discuss the cooperation scheme and research topics for the joint research call between AMED and NordForsk.

(2) Finland (Academy of Finland and Business Finland)

The Academy of Finland noted the role of research mobility in international scientific collaboration. While the implementation of researcher mobility and joint research seminars has been delayed due to the COVID-19 pandemic, researchers and funding agencies are

looking forward to post-COVID times and research environments, where research visits and stays are possible again. The Academy of Finland is also looking forward to the success of the collaboration between NordForsk, Nordic countries and the Japan Agency for Medical Research and Development (AMED).

Business Finland has strong collaboration dimension with Japan on innovation and foresight. Japan is the only country in the world where Business Finland has dedicated expert on both foresight and innovation. June 2020 Business Finland resigned MoC (Memorandum of Collaboration) with National Institute of Science and Technology Policy (NISTEP) for foresight for next three years. AI, Smart Cities and digitalization have become more central and important area of cooperation. There is a clear growth trend in Business Finland funding for STI cooperation with Japan. In 2019 BF funded joint projects, research mobility, research projects and industrial cooperation with Japan around 23 million Euros. In 2020 statistics, overall projects where Japan is mentioned as a partner or a target market, Business Finland has funding for around 400 Japan related projects having value of 65 million Euros.

Both Co-Chairs gave the closing remarks by highlighting the importance of continuous dialogue in further enhancing bilateral cooperation in STI between Japan and Finland. The next Joint Committee Meeting will be held in Japan and its date will be coordinated through diplomatic channels.

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