

MoST - Business Finland Joint Funding Call

I. AGREEMENT

Memorandum of Understanding for China-Finland Science & Technology Innovation Cooperation between the Department of International Cooperation of the Ministry of Science and Technology of the People's Republic of China, and Business Finland (formerly Tekes, the Finnish Funding Agency for Innovation) of the Republic of Finland

II. PRIORITIES

IoT Factory

For example including but not limited to cooperation areas such as:

1. *Analysis, prediction and optimization technologies for intelligent factory operation based on industry IoT big data.*

Key focuses including:

- ♦ Equipment state feature information acquisition technologies, and big data feature extraction technologies;
- ♦ Efficiency optimization for production line based on intelligent algorithm, and development of online optimization and analysis system for production efficiency;
- ♦ Energy consumption model of intelligent equipment, such as machine tool and robotics, optimization technologies for integrated energy management for intelligent factory, development of energy management and optimization systems;
- ♦ Real-time online precision optimization technologies for machining equipment, and online compensation technologies, enabled by big data analysis;
- ♦ Product quality prediction technologies, based on equipment operation monitoring, and development of product quality prediction systems.

2. *Data gathering, analytics, simulation, prediction and optimization technologies and big data solutions for manufactured products use phase follow up.*

Key focuses including:

- ♦ Solutions and technologies for data gathering, analytics, prediction and optimization
- ♦ Solutions for big data for manufactured products use phase follow up

Medical Science

For example including but not limited to cooperation areas such as:

1. *Molecular immune response mechanism*

Key focuses including:

- ♦ Molecular immune response mechanism of child allergic diseases in urban and rural indoor environment exposure
- ♦ Personalized health using biologic information from individuals can help to predict the risk of different diseases
- ♦ Spirometer that works with the smart phone making monitoring the lungs simple and convenient. Treatment can be optimized, while predicting and preventing asthma symptoms.
- ♦ *Environmental infection control* against airborne pathogens ; can improve the situation in healthcare facilities by preventing transmission and the quality of air.

2. *Artificial intelligence assisted healthcare*

Key focuses including:

- ♦ Artificial intelligence assisted digital pathology in accurate diagnosis and treatment of cancer
- ♦ Quick and accurate medical analysis on the basis of symptoms supplied by the user. It identifies the health issue and gives clear instructions on how to proceed with treatment.
- ♦ AI solutions that help physicians in their daily decision making in neurology.

3. *Population health*

Key focuses including:

- ♦ Analyzing care gaps, for example, assessing the relative effectiveness of different treatments, such as by how much the prognosis in the case of a myocardial infarction or stroke can be improved with a specific treatment. Imaging devices

that are suitable for any clinic for screening of various eye diseases, such as diabetic retinopathy and glaucoma.

- ♦ Generally, prevention and health promotion are the key elements. Wearable technology for fitness as well as monitoring are the suitable technologies. As well as corporate wellness and fitness monitoring at schools.

Smart and Flexible Energy

For example including but not limited to cooperation areas such as

1. Planning and operation of interconnected energy systems for future cities

Key focuses including:

- ♦ Architecture design and modeling, theory and methodology study of interconnected energy systems for future cities;
- ♦ Optimization and management technologies for future urban interconnected energy systems;
- ♦ Key technologies of interconnected energy systems for development and utilization of clean energies, and integration of high proportion distributed renewable energies;
- ♦ Demonstration application of interconnected energy systems for future cities;

Also:

- ♦ Analysis and prediction of energy consumption characteristics of individual and group users;
- ♦ Market structure, pricing mechanism and trade mode for multiple energy supply sources;
- ♦ Economic evaluation theory and method of interconnected energy systems;
- ♦ Integration capacity evaluation of energy system of distributed renewable energies.

2. Real-time simulation and intelligent control of hybrid grid

Key focuses including:

- ♦ Real-time online risk identification, through research of mirror systems and adaptive intelligent simulation models;

- ♦ Intelligent stability, through research of wide-area application and stability systems for hybrid grid, and online visual close-loop test for hybrid grid security and stability systems;
- ♦ Remote testing and real-time close-loop of hybrid grid control systems.

3. *High performance smart grids and network automation*

Key focuses including:

- ♦ Solutions for distributed energy generation, intelligent power management with high level of digitalization and demand response
- ♦ Solutions for network automation with improved quality and continuity of service with affordable investments (compared to non-optimized network)
- ♦ Solutions for network automation with goals for significantly less repair costs (less maintenance work), more reliable electricity distribution (less interruption to power lines)

Intelligent Transportation

For example including but not limited to cooperation areas such as

1. *Network information interaction and service for new energy vehicles*

Key focuses including:

- ♦ Development of integrated vehicle terminal, featuring 5G connectivity, Beidou high-precision navigation, vehicle network perception, service and alert;
- ♦ Technologies and standards for information exchanges, security, optimization and coordination between multiple terminals and cloud;
- ♦ Identification and early warning of driving behaviors, vehicle monitoring and energy consumption optimization, integrated evaluation method for safety/ecological driving;
- ♦ Diagnosis system combining local and cloud data;
- ♦ Analysis and service platform of big data for new energy vehicles.

2. *Application of new energy vehicle networking in multi-domains*

Key focuses including:

- ♦ Information fusion, feature extraction, and analysis technologies of heterogeneous data from multi-domain and multi-source for new energy vehicle;
- ♦ Credible information interaction mechanism for the cooperative operation of new energy vehicles in multi-domain and multi-application-mode;
- ♦ Car-car coupling mechanism and optimization of coordinated operation of traffic system, in the case of mixed traffic with connected and non-connected vehicles;
- ♦ Active and dynamic regulation of congested areas, cooperative optimization of traffic organization;
- ♦ Developing networked management and control platform of multi-mode urban traffics

3. Application of Mobility as a Service concepts

Key focuses including:

- ♦ Solutions for establishing applications for connecting unimodal systems for multimodal one
- ♦ Solutions focusing on consumer centric applications for providing smooth and seamless transportation experience using multiple different transportations methods
- ♦ Solutions helping to reduce congestion in big cities with intelligent / AI systems proving true savings in energy, emissions and consumed time

III. NUMBER OF PROJECTS TO BE FUND

Around 10 projects.

IV. FUNDING AVAILABLE

MoST is to provide in total 20M RMB for Chinese consortium partners. Company partners in a project are required to provide at least the same amount of funding to that of MoST's grant.

Business Finland provides funding for Finnish companies only. Business Finland funding is not fixed and depends on the number of qualified applications. Normal Business Finland funding principles are applied: Maximum funding percentage of the project costs for SME's is generally 50 % grant or 70 % loan and for large companies 40 % grant or 50 % loan depending on the type of project. Project costs are not limited, but

must be in line with the resources and targets of the company. Typically projects range from 100 k€ to 1 M€

For more information, see <https://www.businessfinland.fi/en/for-finnish-customers/services/funding/in-brief/>.

V. OTHER REQUIREMENTS

- 1) Project consortia must include at least one Finnish company and one Chinese partner.
- 2) This call encourages academia-industry cooperation. Business Finland only accepts applications from companies operating in Finland. Research organizations and academia may act as subcontractors.
- 3) This call encourages enterprises to participate, especially joint application by multiple companies and research institutes;
- 4) China/Finland partners are asked to collaborate on the basis of complementarity, equality and mutual benefit. Both sides should have balanced inputs and work packages in a projects;
- 5) China/Finland partners need to have a clear IPR agreement ready before applying;
- 6) In principle, the implementation period of the project shall not exceed 3 years. Personnel exchanges are encouraged within a project;
- 7) Chinese partners need to submit their application to MoST and Finnish companies to Business Finland. Applications submitted only to one side are not regarded. Applications must include a joint project plan where the work of each consortium partner is clearly described.

Finnish companies should submit their application through the Business Finland submission system: <https://www.businessfinland.fi/suomalaisille-asiakkaille/asiointipalvelu/>. (Huom! Hakuilmoituksessa pyydetty viitetieto: Suomi-Kiina haku). **Deadline for applications is 10. December 2018.**

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