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# International research activities

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## 1. International research activities of the NILIM

The following four policies are basic policies for the international strategy of the NILIM, based on the important research themes of the NILIM and the international policies of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT):

- (1) Reinforcement of understanding of foreign technical policy trends related to important research themes of the NILIM
- (2) Promotion of international collaboration
- (3) Reinforcement of activities for international standardization
- (4) Promotion of exporting infrastructures and systems

Based on the basic policies mentioned above, we have held or joined international conferences between two or more countries to collect detailed information on technical trends, and have also actively worked on international standardization. In addition, in expectation of the diffusion of our excellent infrastructure-related technologies, we are promoting cooperation with mainly Southeast Asian governmental research institutes. To prepare standards for traffic safety and environmentally friendly pavements with increased local adaptability, we are jointly conducting studies based on a road map. In FY2015, the NILIM organized various international conferences, including a technical discussion to understand the traffic volume with increased local adaptability, and a cooperative workshop with the Institute of Road Engineering (IRE) of the Ministry of Public Works and Housing in Indonesia, based on collaborative research, where we exchanged opinions about future collaborative research. We simultaneously promoted collaboration with the Japan International Cooperation Agency (JICA) experts, and the invitation of mid-career and young researchers.

## 2. Organizing international conferences

### 2.1 Japan-US-EU Trilateral ITS Conference (US: July 23 to 30, 2015)

Between the Japanese and US governments, the Road Bureau of MLIT and the US Department of Transportation's Research and Innovative Technology Administration (RITA) signed a memorandum for cooperation in the field of ITS in October 2010. In addition, between the Japanese and European governments, the Road Bureau of MLIT and the Information Society & Media Directorate-General of the European Commission (currently the Directorate General for Communications Networks, Content and Technology) signed a memorandum for cooperation concerning Cooperative Systems in the field of ITS field in June

2011. Based on these memorandums, the Japan, US, and European Commissions have exchanged opinions and conducted cooperative activities in the ITS field. In this fiscal year, individual working groups on automated driving, probe data, and evaluation tools had meetings in the US cities of Ann Arbor and Boston, and the participants exchanged information about their countries, reported on the progress of shared works, and checked on the details of future works.

### 2.2 18th conference between US Department of Transportation, Federal Highway Administration and NILIM, regarding bridges and structures (US: January 14 to 15, 2016)

At the time of the revision of the Agreement between Japan and US on Cooperation in the Research and Development of Science and Technology (the Japan-US Science and Technology Agreement) in 1994, "bridges and structures" was newly added as a cooperation subject, and Federal Highway Administration (FHWA) of the US Department of Transportation, the Road Bureau, and the NILIM of MLIT exchanged information regarding revised technical standards and political measure trends. In this fiscal year, the conference was held in Washington DC in the US, and the participants from Japan and the US discussed and exchanged opinions about the technical standards, and preparation condition of political measures related to the design, construction, and maintenance of road bridges. In particular, we understood the problems associated with the sophistication of inspection and durability design, in a dialogue with the US government, which called on individual states to maintain and upgrade their road bridges based on periodic checkup data.

### 2.3 15th Japan and Indonesia Research Collaboration Workshop (Japan: February 5 to 9, 2016)

Based on the Cooperation Arrangement concerning Joint Research and Development in the field of Roads and Bridges between the NILIM and the Institute of Road Engineering (IRE) of the Ministry of Public Works and Housing in Indonesia, which was agreed to on November 2014, the 15th Japan and Indonesia Research Collaboration Workshop was held in Tsukuba City, Ibaraki, Japan. In this workshop, the participants reviewed the utilization guideline for asbuton (locally produced natural asphalt), which was supposedly buried in large quantities around the Buton Island of Indonesia, discussed activities to slightly stabilize the quality of asbuton by the addition of an adulterant, reviewed technologies to completely extract asphalt from asbuton, and exchanged opinions regarding factory tours and

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future activities. In addition, they visited a model of the nationwide roadside stations (Michi-no-eki), "Motegi," which was particularly recognized as a station that continuously worked as an excellent regional activation site, and exchanged opinions about the activities and operation of the station.

#### 2.4 Japan-South Korea joint study group (Urban Planning) (South Korea: February 17 to 20, 2016)

Since the NILIM signed a memorandum regarding cooperation with the Korea Research Institute for Human Settlements, the main national land research institute of South Korea, in November 2012, we have cooperatively researched common and different tasks regarding urban redevelopment.

In this fiscal year, as South Korea's efforts related to the low-carbon urban development and relocation of the capital, we interviewed local government officials of Incheon City and Jeju-Do, which had promoted green city activities, model cities corresponding to climate change, and new sustainable urban planning, to understand the latest status. Moreover, concerning the current status of the relocation of the capital for the purpose of balanced development of the nation, we researched and exchanged opinions about the preparation status of innovative cities, and the effects of urban activation by transferring public agencies in typical rural cities such as Busan City and Jeju Island (Seogwipo City).

#### 2.5 Joint research on Hydrology, Water Resources and the Effects of Global Climate Change on Them, with US Geological Survey (US: February 22 to 23, 2016)

Under the Japan-US Science and Technology Agreement (in the global science and global environment field) called "Hydrology, Water Resources and the Effects of Global Climate Change on Them," the NILIM and the Public Works Research Institute have conducted joint research on hydrology, water resources, and the effects on climate change with the US Geological Survey (USGS) since 1992, and have organized a total of nine joint workshops in the past. At this time, we reviewed the collaborative research activities of both countries after the 9th workshop held in February 2014, and agreed on future collaborative research and orientation regarding new tasks, such as forecasting to provide advanced notices and warnings about floods, which are seriously required in Japanese society. In addition, we effectively collected information and exchanged opinions concerning the latest research conditions and trends regarding three concrete collaborative research themes under the joint research (flood observation and modeling, mountain stream sediment discharge observation and modeling, and the collaboration of CommonMP and iRIC).

#### 2.6 16th Japan and Indonesia Research

#### Collaboration Workshop (Indonesia: February 29 to March 3, 2016)

Based on the Cooperation Arrangement concerning Joint Research and Development, agreed on by the NILIM and the IIRE of the Ministry Department of Public Works and Housing in Indonesia, the 16th Japan and Indonesia Research Collaboration Workshop was held in Jakarta City, Bali, Indonesia. In this workshop, in cooperation with the Public Works Research Institute, we organized individual workshops for regional development, traffic data collection technologies, pavements, and tunnels, and exchanged opinions regarding the progress of the collaborative studies and future activities.

At the same time, jointly with the Japan Society of Civil Engineers (JSCE), PWRI, and IRE, we held an open seminar with the theme of regional development in Jakarta City, Indonesia. The head of the Regional Infrastructure Development Agency of the Ministry of Public Works and Housing in Indonesia, the head of the Research and Development Agency of the Department of Public Works and Housing in Indonesia, Professor of Tokyo Metropolitan University (Tetsuo Shimizu), and the Director of the NILIM Road Traffic Department participated in the workshop, and made presentations. More than 120 engineers from Indonesia and Japanese resident officers, etc., also joined the workshop.

