

**The mid-term Conference of IRE and NILIM Joint Research  
HELD IN TSUKUBA, JAPAN  
3<sup>rd</sup> October to 5<sup>th</sup> October, 2017**

Institute of Road Engineering in Indonesia (IRE) and NILIM have carried out joint research of road and traffic fields.

The mid-term Conference of IRE and NILIM Joint Research was held in Tsukuba, Japan by NILIM, Japan and IRE, Indonesia on 3<sup>rd</sup> October to 5<sup>th</sup> October 2017.

The activities of The Conference are as follows;

- 1) The mid-term Conference (The main conference)
  - i ) Keynote speech by Director-General of NILIM  
and Head Representative of ARD\*<sup>1</sup> MPWH\*<sup>2</sup> of Indonesia
  - ii ) Plenary session by researchers of 5 fields
- 2) Technical visit
  - i ) Site visit on trial construction of AsButon Guss asphalt
  - ii ) Open house of facilities of NILIM and PWRI
  - iii) Site visit on Ohashi Junction
  - iv) Site visit on Construction site of Tokyo Outer Ring Road

(\*1) ARD : Agency for Research and Development

(\*2) MPWH : Ministry of Public Work and Housing

Total of 53 people, including six researchers from the IRE, participated the conference. It includes ordinary participants from outside of NILIM and PWRI.

### **1. The mid-term Conference (The main conference)**

On 4th October 2017, The main conference was held at NILIM, in Tsukuba city.

Until now, the research has been conducted in each field individually, for example, workshops were held in each field.

In this conference, Indonesian researchers and Japanese researchers of 5 fields assembled in the same place. They conducted the cross-sectoral presentation and discussion.

#### **i ) Keynote speech by Director-General of NILIM and Head Representative of ARD MPWH of Indonesia**

In morning session, keynote speeches held by Dr. Fujita, Director-General of NILIM, and Dr. Madi Hermadi, Head Representative of ARD MPWH of Indonesia.

Dr. Fujita spoke about main function of NILIM, they are: "Conducting research and preparing technology standards", "Supporting disaster-response activities", "Technology

consulting and technological capability enhancing", "Research coordinator". Moreover, he spoke about new technology and innovation, the importance for a greater effect of infrastructure, and the application to maintenance of infrastructure, as the prospects for the future.

Dr. Madi Hermadi spoke that the government of Indonesia is aware of the importance of infrastructure as the foundation of development in various fields, Indonesia has many demand of infrastructure, technologies are developing rapidly, but technical guidelines etc. are not yet available. Moreover, he said, this cooperation should be maintained and developed.



Keynote speech by Dr. Fujita



Keynote speech by Dr. Madi Hermadi

## ii ) Plenary session by researchers of 5 fields

In afternoon session, research progress was reported by researchers of 5 fields: "Road-side station" "Traffic Data Collection" "Road Environment" "Pavement" "Tunnel & Underground Structures".

《Outlines of presentations》

### ① Road-side station

- Researchers developed the planning guideline for planning and designing road-side station (in Indonesia "RosSita") that is incorporated the concept of Michi-no-Eki in Japan.
- In Bali, "RosSita" will open in 2018.

### ② Traffic Data Collection

- Inductive Loops & Piezoelectric Sensor (LPS), the conventional traffic volume measuring equipment in Indonesia, have some problems.
- Researchers studied the application of Image Processing Technology (IPT) to traffic counting, as a technology to compensate for problems of LPS.
- Researchers got the knowledge about applicability and optimum camera settings of IPT.

### ③ Road Environment

- Currently, motorcycle is the main transport in Indonesia.
- Estimation results of change of CO<sub>2</sub> emissions when the road traffic mode was converted in Indonesia and Japan.

- Researchers confirmed that motorcycles have less CO2 emissions and the effectiveness as environmentally friendly road transport mode. They confirmed that by the field test on CO2 emissions of motorcycle and 4-wheel vehicle.

#### ④ Pavement

- The draft of "Guideline of AsButon Guss asphalt" was developed. AsButon is Indonesian natural rock Asphalt, and AsButon Guss asphalt pavement has the function as water-proofing layer on the steel deck.

- Researchers are planning the trial construction of Asbuton Guss asphalt on Steel Deck in Indonesia.

#### ⑤ Tunnel & Underground Structures

- "Technical guideline on Auxiliary method for mountain tunnel" was developed. It is needed to construct the tunnel in poor ground condition.



Presentation by Tunnel field researchers



Participants of the mid-term conference

## 2. Technical visit

On 3rd & 5th October 2017, 4 technical visits were conducted as sub events of the conference.

### i) Site visit on trial construction of AsButon Guss asphalt

On 3rd October 2017, participants visited the trial construction of AsButon Guss asphalt mixture by a private pavement company.

### ii) Open house of facilities of NILIM and PWRI

On 3rd October 2017, participants visited experimental facilities in site of NILIM and PWRI, "The test course", "Three-dimensional large-scale shaking table", "Verification facility of non-destructive testing technology for bridge", "Oceanic and coastal experiment facility".



Trial construction of AsButon Guss asphalt



Verification facility of non-destructive testing technology for bridge

### iii) Site visit on Ohashi Junction

On 5th October 2017, participants visited Ohashi Junction which connects “Central Circular Route” and “Metropolitan Expressway Route 3”.

There is about 70m difference in height between 2 routes, therefore Ohashi Junction connects 2 routes by way of 2 loops for ups and downs (there are 4 loops as total of climb and down).

At first, participants drove through the Junction by bus, when they observed facilities for safety driving, such as color-coded guidance.

Next, staffs of Metropolitan Expressway Company Limited explained uniqueness and construction technology of Ohashi Junction and Yamate tunnel to participants.

In addition, participants visited the ventilation facility and ecological restoration spaces which is set up with the Junction.

### iv) Site visit on Construction site of Tokyo Outer Ring Road

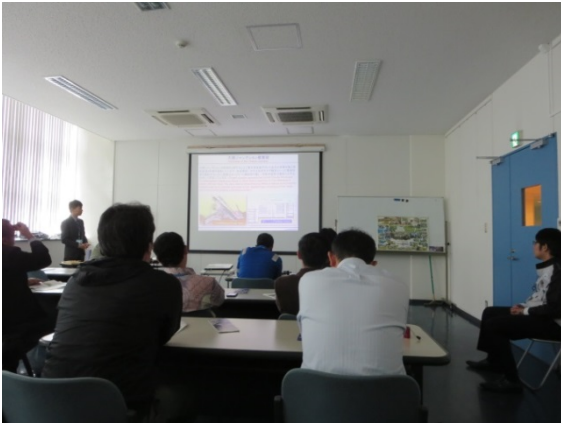
On 5th October 2017, participants visited the construction site of Tomei Junction of Tokyo outer ring road. In February 2017, 2 shield tunnel machines to each tube started from this

site.

At First, the explanation of construction technology was conducted by staffs of MLIT's Tokyo Outer Ring Road office, NEXCO EAST and NEXCO CENTRAL.

Next, participants observed construction facilities, such as shield pit, stockyard of segment and stockyard of soil which had discharged from shield machines.

In addition, staffs explained to participants that they are managing the motion of construction vehicles by GPS, for the prevention of traffic jam in neighboring roads.



Explanation about Ohashi Junction



Construction site of Tokyo outer Ring Road

### 3. Reference (History of the Cooperation)

The National Institute for Land and Infrastructure Management (NILIM) and the Institute of Road Engineering (IRE) renewed cooperation arrangement in Indonesia, February 2014.

Under this agreement, NILIM and IRE have been continually sharing research information by jointly holding technical seminars and exchanging researchers to strengthen links between both research institutes and to form international human networks, thereby to contribute the growth of Indonesia.

2009.06	Pre-meeting in Jakarta and Bandung
2009.11	Tsukuba, Memorandum of Cooperation agreed
2010.03	Bandung, (1st Joint Workshop for targeting the themes)
2010.06	Tsukuba, joint meeting for Bali coming symposium
2010.10	International Symposium in Bali (2nd Joint Workshop to declare the strategy for cooperative researches)
2011.01	Jakarta, (3rd Joint Workshop to make the Road maps(1) )
2011.06	Sulawesi, (4th Joint Workshop to make the Road maps(2) and site observation
2011.09	Technical Tour in Japan for modernizing experimental Equipment and Facilities of RDCRB (IRE)
2011.10	Lombok, (5th Joint Workshop / Bilateral Seminar)
2012.03	Jakarta and Bandung, (6th Joint Workshop including River and Water Resource issue)
2012.06	Batam, (7th Joint Workshop (Bridge/ Tunnel) and Open Seminar (Long Span Bridge and Tunnel Technology))
2012.06	Trilateral Workshop for the Interim Report in Tsukuba
2013.01	Jakarta, (8th Joint Workshop (Road Environment/ IPT/ Traffic Safety/ Pavement/ Tunnel)
2013.08	Padalarang-Bandung, (9th Joint Workshop (IPT/ Traffic Safety/ Pavement/ Tunnel))
2013.11	Tokyo, (10th Joint Workshop (Tunnel/ Pavement))
2014.02	Jakarta, Labuan Bajo and Denpasar, (Cooperation Arrangement renewed, 11th Joint Workshop (Road Side Station of Corridor 5/ Road Environment/ IPT/ Tunnel/ Pavement)
2014.03	Tsukuba, (12th Joint Workshop (Michinoeki/ Pavement))
2014.10	Jakarta, (13th Joint Workshop (Tunnel))
2014.11	Bali, Flores and Buton, (14th Joint Workshop (Road environment/ Road Side Station/ AsButon)
2016.02	Tsukuba, (15th Joint Workshop and Site visit (Pavement/ AsButon/ Road Side Station)
2016.02	Jakarta, Buton Island and Bali, (16th Joint Workshop and Site visit (Michinoeki/ Traffic Data Collection/ Pavement/ Tunnel)

2016.11 Bandung, Jakarta, (17th Joint Workshop and Site visit (Road Environment))  
2017.03 Bali, (18th Joint Workshop (Pavement))