

**Forum Report**

# Everyone's Mobility by ITS

**The 16th  
ITS Asia-Pacific Forum  
FUKUOKA 2018**

**May 8-10, 2018  
Fukuoka International Congress Center**



**ITS AP Forum  
FUKUOKA**

**May 8-10, 2018**

# About the Forum



**Date** May 8-10, 2018

**Venue** Fukuoka International Congress Center

**Organizer** The 16th ITS Asia-Pacific Forum FUKUOKA 2018 Executive Committee

**Executive Chair**  
  
**Kazuki Nakao**  
Senior adviser,  
Nishi-Nippon Railroad Co.,Ltd.

**Executive Vice Chair**  
  
**Iwao Nihashi**  
Chairman,  
Toyota Motor Kyushu,inc

**Executive Vice Chair**  
  
**Hiroto Yasuura**  
Trustee and  
Executive Vice President,  
Kyushu University

**Executive Vice Chair**  
  
**Hiroshi Fujiwara**  
Chairman, President &  
Chief Executive Officer,  
Broadband Tower, Inc.

**Host City**  
  
**Soichiro Takashima**  
Mayor of Fukuoka city

**Co-organized** ITS Asia-Pacific

**Partner** ITS Japan

**Supported**

- The Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society, Cabinet Secretariat

Cabinet Office, Government Of Japan

Kyushu Bureau of Telecommunications, MIC

Kyushu Bureau of Economy, Trade and Industry, METI

Kyushu Regional Development Bureau, MLIT

Fukuoka Prefecture

Fukuoka City

Japan International Cooperation Agency

KYUSHU ECONOMIC RESERCH CENTER

The Society of Instrument and Control Engineers

Society of Automotive Engineers of Japan

Japan Trucking Association

Japan Society of Civil Engineers

The Nihon Bus Association

Fukuoka Convention & Visitors Bureau

Fukuoka Prefecture Tourist Association
- Kyushu Tourism Promotion Organization

Kyushu Economic Federation

Kyushu Branch, Japan Civil Engineering Consultants Association

Japan Society of Traffic Engineers

Information Processing Society of Japan

The Japanese Society for Artificial Intelligence

Japan Federation of Hire-Taxi Associations

The Institute of Electrical Engineers of Japan

IEICE Engineering Sciences Society

IEICE Kyushu Section

The Japan Society of Mechanical Engineers

The Robotics Society of Japan

TOKYO BAR ASSOCIATION LEGAL SERVICE JOINT CETER AI DEPARTMENT

The Japanese Association Traffic Psychology

Fukuoka Association of Corporate Executives

Fukuoka Chamber of Commerce & Industry

## Everyone's Mobility by ITS

**Safe and secure society**

**Smart mobility**

**Next generation mobility**

**Infrastructure technologies for practical ITS**

**Development of human resource and education**



# About the Venue

 Only access to Full Conference Registrants

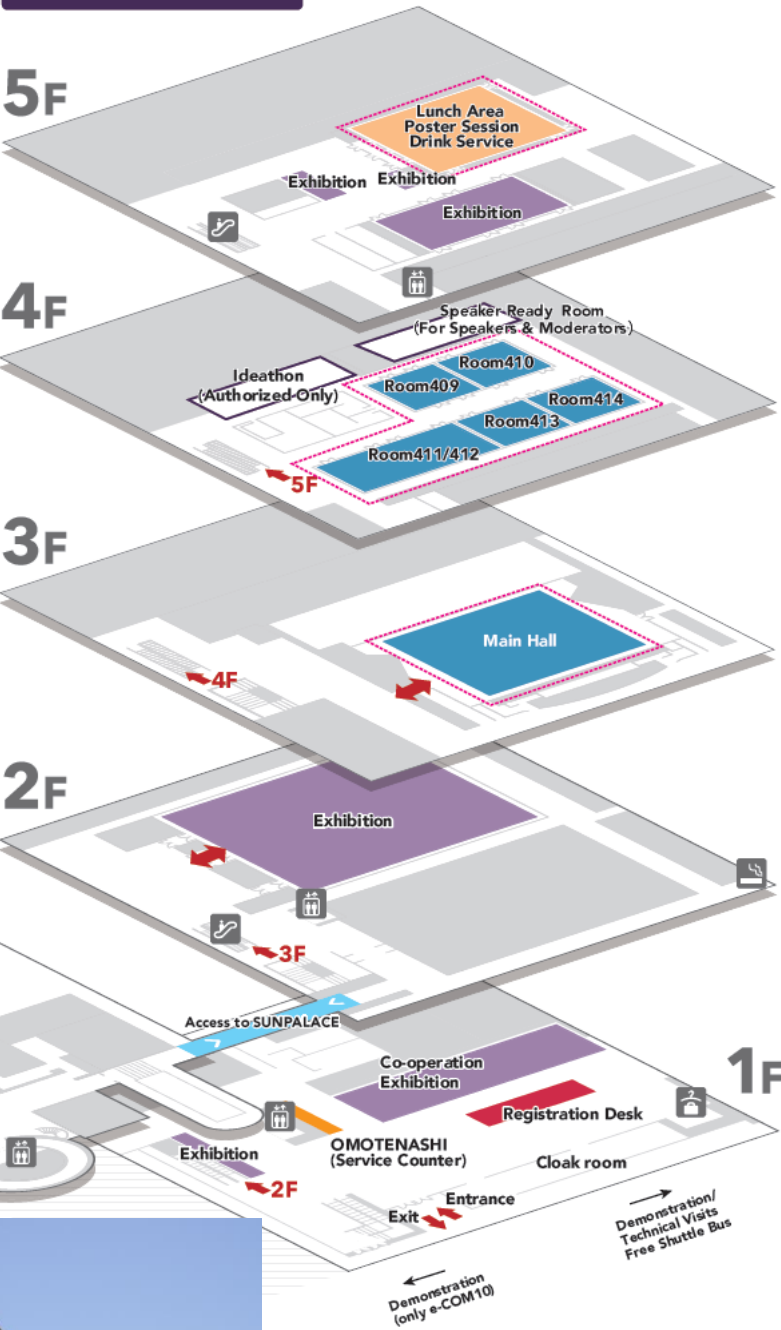
## Registration open

May. 7th, 15:00-19:00
May. 8th, 08:00-17:00
May. 9th, 08:00-17:00
May. 10th, 08:00-13:00

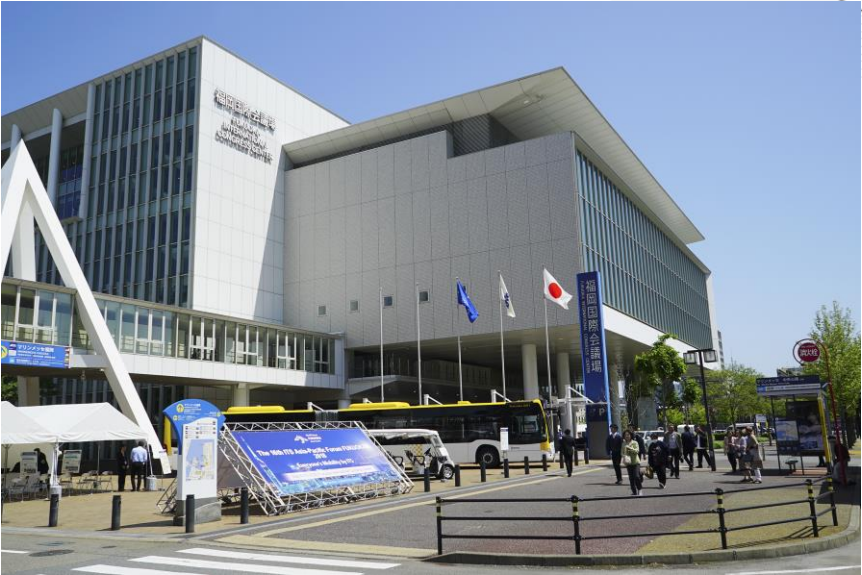
## Speaker Ready Room

May. 7th, 15:00-19:00
May. 8th, 08:00-18:30
May. 9th, 08:00-18:30
May. 10th, 08:00-12:30

## Fukuoka International Congress Center



## Fukuoka Sunpalace



# Sponsors



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# Sponsors

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# Program At a Glance

## DAY 1/ May 8

	Main Hall	Room411/412	Room413	Room414	Room409	Room410		
9:20	Opening Ceremony							
10:30	<b>PL01</b> Impact on society by new era of mobility							
12:00								
13:30	<b>HL01</b> Government Panel - Automated driving for the realization of Society5.0							
14:00		<b>HS01</b> ITS for handicapped persons and vulnerable road users	<b>SIS01</b> Intelligent infrastructure for new mobility	<b>TS01</b> Automated Vehicle	<b>TS02</b> Safe Driving (1)	<b>TS03</b> Traffic Management	Ideathon	Exhibition
15:30								
16:00	<b>ES01</b> ITS Asia-Pacific Updates I	<b>HS02</b> Infrastructure Technologies for Autonomous Driving Implementation	<b>SIS02</b> The prospective of connected motorcycle	<b>TS04</b> Autonomous Driving & Vehicle	<b>TS05</b> Safe Driving (2)	<b>TS06</b> Traffic State Estimation		
17:30								Automated Driving Demo/ Demonstration
19:00	Gala dinner (Charged)							

## DAY 2/ May 9

	Main Hall	Room411/412	Room413	Room414	Room409	Room410		
9:00	<b>PL02</b> ITS, Contributing to the solution of the social challenges			<b>TS07</b> Connected Car	<b>TS08</b> Driver Assistance	<b>TS09</b> Traffic Risk and Congestion Management		
10:30								
11:00	<b>HL02</b> Smart card, a gigantic infrastructure of society	<b>SIS03</b> Innovation for better mobility		<b>TS10</b> Sensing	<b>TS11</b> Driver Monitoring	<b>TS12</b> Smart Parking	Ideathon	Exhibition
12:30								
14:00	<b>HS03</b> Automated driving for community transportation	<b>SIS04</b> Smart and safe city realized by utilization of traffic data	ITS Asia-Pacific Workshop	<b>TS13</b> Image Analysis	<b>TS14</b> Safety Mechanism	<b>TS15</b> Smart City	Ideathon	Automated Driving Demo/ Demonstration
15:30								
16:00	<b>ES02</b> ITS Asia-Pacific Updates II	<b>SIS07</b> Cyber security in ITS	<b>SIS06</b> International standardization on Cooperative ITS and Automated Driving by ISO/TC204	<b>TS16</b> Travel Time Estimation	<b>TS17</b> Behaviour Analysis	<b>TS18</b> Electronic Toll Collection		
17:30								

17:30 ▶ 19:30 **PS** Poster Session at Lunch Area

## DAY 3/ May 10

	Main Hall	Room411/412	Room411/413	Room414	Room409	Room410		
9:00	<b>HL03</b> ITS discussed from the view of Internet industry	<b>HS04</b> Regional ITS	<b>SIS05</b> Mobility Challenges in Low Car-Dependency Communities	<b>TS19</b> Big Data and Machine Learning (1)	<b>TS20</b> Bus and Passenger Management	<b>TS21</b> Next-Generation Urban Transport System		
10:30								
11:00	<b>SIS08</b> The key to MaaS success	<b>HS05</b> Construction of the traffic data unification platform	<b>SIS09</b> ITS deployment opportunities from the viewpoint of financing, policy and technology	<b>TS22</b> Big Data and Machine Learning (2)	<b>TS23</b> Application	<b>TS24</b> Infrastructure	Ideathon	Exhibition
12:30								
13:00	Closing Ceremony							Automated Driving Demo/ Demonstration

## DAY 4/ May 11

8:00 ▶ 18:00 Post Congress Tour (Charged)

**PL**

Plenary Sessions

**ES**

Executive Sessions

**SIS**

Special Interest Sessions

**HL**

Host High Level Panels

**HS**

Host Selected Sessions

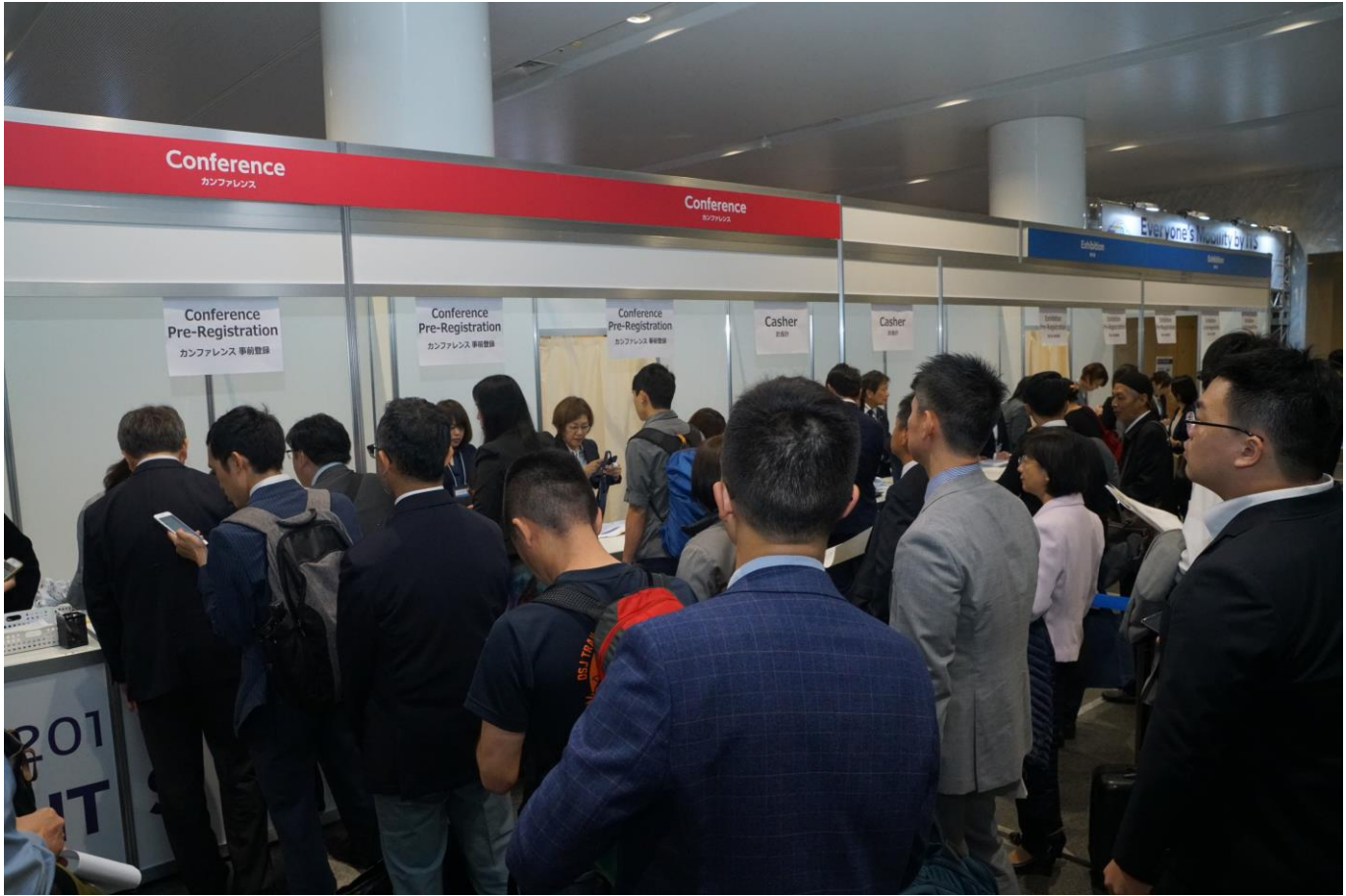
**TS**

Technical Sessions

**PS**

Poster Session

# Reception





# Opening Ceremony



## ◆ Welcome Speech 1 Organizer / Host City

Kazuki Nakao  
The 16th ITS Asia-Pacific Forum FUKUOKA 2018 Executive  
Committee Executive Chair

Soichiro Takashima  
Mayor of Fukuoka city

## ◆ Guest Speech

Manabu Sakai  
State Minister for Internal Affairs and Communications

Hiroshi Ogawa  
Governor of Fukuoka Prefecture / Chairman, Association for the  
Promotion and Advancement of the Northern Kyushu Automotive  
Industry in Asia (FUKUOKA)

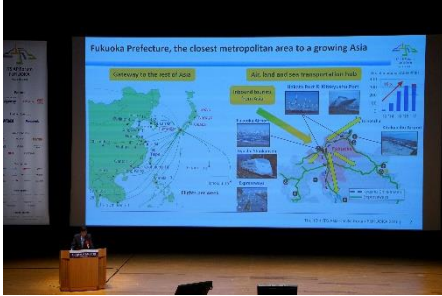
## ◆ Welcome Speech 2 ITS Asia-Pacific

Hajime Amano  
ITS Asia-Pacific Secretary General



# Session

## PL01 - Impact on society by new era of mobility



Hiroshi Ogawa  
Governor of Fukuoka Prefecture, Japan  
**Towards Innovative Mobility**



Keiji Yamamoto  
Managing Officer  
Toyota Motor Corporation, Japan  
**Envisioning Smart Mobility Society  
in the Connected Future**



Russell Shields  
Chair of Ygomi LLC, United States  
**Secure Connectivity for Future Mobility**



Noni Purnomo  
President Director,  
Blue Bird Group Holding, Indonesia  
**Pandora in Progress -Impacts on  
society by new era of mobility-**



Veni Shone  
President of LTE Product Line,  
Huawei Technologies Co., Ltd., China  
**Connected Car & V2X Enables  
New Experience of Transportation**

## PL02 - ITS, Contributing to the solution of the social challenges



Yoshiaki Takeuchi  
Director-General of the Radio Department,  
Ministry of Internal Affairs and Communications, Japan  
**ITS contributing to the solution of the  
social challenges**



Hiroto Yasuura  
Trustee and Executive Vice President,  
Kyushu University, Japan  
**Challenges in University Campus**



Jui-Lin Liou, Deputy Director,  
Taipei City Traffic Engineering Office,  
Taipei City Government, Chinese Taipei  
**Transportation policy in Taipei**



Chong Kheng Chua  
Deputy Chief Executive, Infrastructure and  
Development, Land Transport Authority, Singapore  
**Towards a People-centric land  
transport eco-system**



Dannis Walsh  
General Manager, Department of Transport and  
Main Roads, Queensland Government, Australia  
**Intelligent transport system (ITS) driving  
the future prosperity of our communities**



Jamie Leather  
Chief of Transport Sector, Sustainable Transport and  
Climate Change Department, Asian Development Bank  
**ITS Solutions to Social and  
Transport Challenges**



# Session

## | ES01 - ITS Asia-Pacific Updates I



Taro Ishi  
Waseda University, Japan



Dean Zabrieszach  
President, ITS Australia, Australia



William Lam  
Head of Department of Civil & Environmental,  
The Hong Kong Polytechnic University, Hong Kong



Umiyatun Hayati Triastuti  
Director of Research & Development Center,  
Ministry of Transportation, Indonesia



Siewmun Leong  
Council Member, ITS Malaysia, Malaysia

## | ES02 - ITS Asia-Pacific Updates II



Edward Chung  
Professor, Department of Electrical Engineering,  
Hong Kong Polytechnic University, Hong Kong



Young-Kyun Lee  
Executive Director, Center for Overseas Business,  
ITS Korea, Korea



Mohammed Hikmet  
President, ITS New Zealand, New Zealand



Ricardo Sigua  
Professor, Institute of Civil Engineering,  
University of the Philippines Diliman, The Philippines



Sorawit Narupiti  
Associate Professor, Civil Engineering (Transportation),  
Faculty of Engineering, Chulalongkorn University, Thailand

## HL01 - Government Panel - Automated driving for the realization of Society5.0



**Masaji Matsuyama**

Minister of State for Measures for Declining Birthrate, Minister of State for "Cool Japan" Strategy, Minister of State for the Intellectual Property Strategy, Minister of State for Science and Technology Policy, Minister of State for Space Policy



**Koji Hachiyama**

Counsellor, National Strategy Office of ICT  
Cabinet Secretariat, Japan



**Toshihiro Sugi**

Director of Automated Driving planning Office,  
National Police Agency, Japan



**Gaku Nakazato**

Director, New Generation Mobile Communications Office,  
Land Mobile Communications Division, Radio Department,  
Telecommunications Bureau, Ministry of Internal Affairs  
and Communications, Japan



**Naohiko Kakimi**

Director, Electric Vehicle, ITS and Automated driving  
Promotion Office, Ministry of Economy,  
Trade and Industry, Japan



**Masato Sahashi**

Director, International Affairs Office,  
Engineering Policy Division Road Transport Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism,  
Japan



**Takashi Nishio**

Director, ITS Policy and Program Office, Road Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism, Japan

# Session



## HL02 - Smart card, a gigantic infrastructure of society



Akio Shiibashi  
President, JR EAST MECHATRONICS CO., LTD ,Japan



NGUYEN HOANG HAI  
General Director, Urban Transport Management  
and Operation Center(TRAMOC), Hanoi Department  
Of Transport(HDOT). Vietnam



Kentaro Yasuda  
Nishi-Nippon-Railroad Co.,Ltd., Japan



Naoki Tani  
NTT DOCOMO, INC., Japan

## HL03 - ITS discussed from the view of Internet industry



Hiroshi Fujiwara  
Chairman, President & Chief Executive Officer,  
BroadBand Tower, Inc. ,Japan



Ram Shallom  
Vice President, Business Development and Marketing  
APAC Autotalks, Israel



Yuta Iguchi  
Partner - Million Steps, Via Representative in Japan

## ITS Asia-Pacific Workshop

Shigetoshi Tamoto, Senior Vice President ITS Japan ,Japan  
Masakatsu Ura, Sales director, Nishitetsu information system Co.,Ltd, Japan  
Jianjun Li, Cennavi, China  
Eddie Lim, Sales Director, Commercial Large Enterprises, NCS Pte. Ltd., Singapore  
Dong Hwan Min, Seoul Metropolitan Government, Korea  
Mark Hsiao, Vice President, International Integrated Systems, Inc, Chinese-Taipei





## | SIS01 - Intelligent infrastructure for new mobility

Weiyun Jiao, Vice Secretary-General, China ITS Industry Alliance, China  
Masakazu Shiota, Director Engineering, Qualcomm, Japan  
Andrew Mehaffey, Director in New South Wales, HMI, Australia  
Young-Jun MOON, Chief Director, Dept. of National Transport Technology R&D, KOTI, Korea  
Ning HE, Chief Scientist, Genvict, China

## | SIS02 - The prospective of connected motorcycle

Chien-Pang Liu, MOTC, Chinese-Taipei  
Ming-Whei Feng, VP & General Director/ Smart System Institute, Institute for Information Industry, Chinese-Taipei  
Ricardo Sigua, Professor, Institute of Civil Engineering, University of the Philippines Diliman, The Philippines  
Tomoya Kitani, Associate Professor, College of Informatics, Academic Institute, Shizuoka University, Japan  
Leong Lee Vien, Associated Professor, University Sains Malaysia, Malaysia

## | SIS03 - Innovation for better mobility

Weiyun Jiao, Vice Secretary-General, China ITS Industry Alliance, China  
Jianqiang WANG, Professor, Tsinghua University, China  
Richard Harris, International Director of ITS UK, United Kingdom  
Mohit Sindhwani, Head of Innovation & Technology, Quantum Inventions Pte Ltd, Singapore  
Jinling HU, Chief Engineer, Datangnetwork, China  
Norio Yamaguchi, Director, CPS BusinessPromotion Office, SoftBank Corp., Japan  
Majid Sarvi, Professor in Transport for Smart Cities, the University of Melbourne, Australia

## | SIS04 - Smart and safe city realized by utilization of traffic data

Fumihiko Sugiyama, IoT Solution Department Director (Asis Market Development), Tripodworks Co.,Ltd., Japan  
Hiroaki Tsumori, New Technology & Products Development Manager, Murata Electronics Americas  
Ir.Bambang Subiyanto, Chief Lembaga Ilmu Pengetahuan Indonesia(LIPI) ,Indonesia  
Sorawit Narupiti, Associate Professor of Civil Engineering (Transportation) Faculty of Engineering, Chulalongkorn University, Thailand

## | SIS05 - Mobility Challenges in Low Car-Dependency Communities

Dauwels Justin, Associate Professor, Singapore  
Erwin De Gelder, Research scientist,TNO, Netherlands  
Grace Ong, Director,Transportation Technology,LTA, Singapore  
Eley Querner, Vice President Digital Service, TÜV SÜD, Singapore

## | SIS06 - International standardization on Cooperative ITS and Automated Driving by ISO/TC204

Haruo Ozaki, ISO/TC204 HoD of Japan / Toyo University, Japan  
Masanori Misumi, ISO/TC204/WG14 Convenor / Mazda Motor Corporation, Japan  
Jun Shibata, ISO/TC204/WG3 Convenor / Japan Digital Road Map Association, Japan  
Satoshi Ueda, ISO/TC204/WG18 Expert / ITS Technology Enhancement Association (ITS-TEA), Japan  
Weiyun Jiao, ISO/TC204 HoD of China / Research Institute of Highway, Ministry of Transport, China  
Sang Keon Lee, ISO/TC204 HoD of Korea / Korea Research Institute for Human Settlements, Korea





## | SIS07 - Cyber security in ITS

Andrew Chow, President, ITS Singapore, Singapore  
Justin Dauwels, Associate Prof, Nanyang Technological University, Singapore  
Vrizlynn Thing, Head, Cyber Security Cluster, Institute for InfoComm Research, A\*Star, Singapore  
Chuan Wei Hoo, CTO, ST Electronics (InfoSecurity) Pte Ltd, Singapore  
Vera Jin, CEO, Sopra Steria Asia, Singapore  
Hidehiko Akatsuka, Director, Technology Planning & External Affairs, Denso International Asia Pte Ltd, Japan

## | SIS08 - The key to MaaS success

Muhan Wang, Director, MOTC, Chinese-Taipei  
Brian Negus, Director, ITS Australia, Strategic Advisor, Royal Automobile Club of Victoria (RACV), Australia  
Mikko Koskue, Program Director, MaaS-Intelligent Vehicle and Mobility Solutions, Business Finland, Finland  
Chien-pang Liu, MOTC, Chinese-Taipei

## | SIS09 - ITS deployment opportunities from the viewpoint of financing, policy and technology

Nobuyuki Ozaki, Senior Fellow TOSHIBA Infrastructure Systems & Solutions Corporation, Japan  
Changju Lee, Economic Affairs Officer Transport Policy and Development Section, Transport Division United Nations Economic and Social Commission for Asia and the Pacific The United Nations  
Daniel A. Levine, Senior Officer World Bank Group Social, Urban, Rural and Resilience Global Practice Tokyo Development Learning Center (TDLC) Program  
Kawahara Shuntaro, Senior Advisor, Infrastructure and Peacebuilding Department, Japan International Cooperation Agency, Japan  
KI-JOON KIM, Principal Transport Specialist Sector Advisory Cluster Sustainable Development and Climate Change Development  
ASIAN DEVELOPMENT BANK







## I HS01 - ITS for handicapped persons and vulnerable road users

Tomonori Yako, Senior Executive Officer, Uhuru Corporation, Japan  
Ken Kamura, President, Come Luck Laboratory, Japan  
Toshiya Kikuchi, President and CEO, Miraio Inc., Japan  
Daisuke Azuma, Professor, Faculty of Engineering, Kurume Institute of Technology, Japan

## I HS02 - Infrastructure Technologies for Autonomous Driving Implementation

Satoru Nakajo Ph.D., Chief Project Manager, Infrastructure Business Group Leader, Mitsubishi Research Institute Inc., Japan  
Tutomu Nakajima, President, Dynamic Map Platform Co., Ltd., Japan  
Moon J. Lee, Vice President General Manager Japan/Korea, HERE Technologies, Japan  
Yasuhide Shibata, Senior General Manager, High-precision Positioning, Systems Dept., Mitsubishi Electric Corporation  
Electronic Systems Group., Japan  
Kiyohiro Yamauchi, General Manager, IoT Alliance & Sales, ZENRIN Co., Ltd., Japan

## I HS03 - Automated driving for community transportation

Naoya Ota, Director, Center for Research on Adoption of NextGen Transportation Systems, Gunma University, Japan  
Hidenori Yoshida, Head of ITS Division, National Institute for Land and Infrastructure Management, Japan  
Takekazu Inoue, The Japan Research Institute, Japan  
Toshihiro Sugi, Director of Automated Driving planning Office, National Police Agency, Japan  
David Cist, Geophy Vice President of Research and Development, Geophysical Survey Systems, Inc. the United States

## I HS04 - Regional ITS

Itsuki Yoshida, Associate Professor, Fukushima University, Japan  
Yasuhiko Kumagai, Professor, Kochi University of Technology, Japan  
Hitoshi Morita, Professor, Nagasaki Prefectural University, Japan  
Jun Matsumoto, Michinori Holdings, Inc. Japan

## I HS05 - Construction of the traffic data unification platform

Hisashi Ooi, Associate Professor, Faculty of Economics System Department, Oita University, Japan  
Fumihiko Nomura, Director, Planning Division, Fukuoka National Highways Office, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan  
Yoshinori Mikura, Manager, General Management Division Expressway Operation Department, Kyushu Branch, West Nippon Expressway Co., Ltd., Japan  
Akihiko Tanaka, Officer, Kyushu Bus Association (KBA). (Manager [Bus Transportation Systems], Bus Business Division Nishi-Nippon Railroad Co., Ltd.), Japan





## I TS01 - Automated Vehicle

**Moderator :** Yasuhiro Shiomi (Ritsumeikan University, Japan)

### **92: Scenario-Based Safety Assessment Framework for Automated Vehicles**

Jeroen Ploeg, Erwin de Gelder (TNO, Netherlands), Martin Slavik, Eley Querner (TUV SUD Asia Pacific Pte Ltd, Singapore), Thomas Webster and Niels de Boer (Nanyang Technological University, Singapore).

### **36: Modeling Speed Profile of Two-way Two-lane Expressways with Probe Car Data**

Makoto Kasai (Akita College, Japan), Jian Xing (Nippon Expressway Research Institute Company Limited, Japan) and Shin-Ichi Narushima (East Nippon Expressway Company Limited, Japan)

### **35: Evaluation of system providing real time traffic information for automated vehicles based on probe data**

Kentaro Takaki, Shigeki Nishimura and Shoichi Tanada (Sumitomo Electric Industries, Japan)

### **60: The Effect Evaluation Method of Changing Wheel Loads for Vehicle Dynamic Performance**

Mizuki Yamamoto and Toshio Ito (Shibaura Institute of Technology, Japan)

## I TS02 - Safe Driving (1)

**Moderator :** Kazuaki Goshi (Kyushu Sangyo University, Japan)

### **9: Miniaturization and Field Trials of Assistive Devices for Safe Driving at a Crossing with No Traffic Lights Using 920MHz band**

Shintaro Uno (Aichi University of Technology, Japan)

### **58: Estimation of Driver Drowsiness Change in Automated Driving using Heart Beat Analysis**

Naoki Hashimoto and Toshio Ito (Shibaura Institute of Technology, Japan)

### **134: Driver State Analysis of Take-over from Automated to Manual Driving**

Toshio Ito and Akihiro Abe (Shibaura Institute of Technology, Japan)

### **127: Evaluation of blind-spot warning during lane change**

Tsutomu Kaizuka, Huang Li (The University of Tokyo, Japan), Masanori Kosugi, Mitsuhiro Kawada, Shinobu Sasaki (TOKAI RIKI CO., LTD., Japan), Manabu Shimodaira, Katsutoshi Inagaki (PIONEER CORPORATION, Japan) and Kimihiko Nakano (The University of Tokyo, Japan)



## I TS03 - Traffic Management

**Moderator :** Koji Inoue (Kyushu University, Japan)

**124: Deploying an Integrated Urban Traffic Event Information Management System in Taiwan- The Case of Kaohsiung City**

Chi-Chung Tao (Tamkang University, Chinese-Taipei), Meng-Chieh Lin, Yu-Chao Chang (KingwayTek Co., Ltd., Chinese-Taipei), Chi-Hwa Chen, Tung-Ling Wu and Yu-Feng Ho (Institute of Transportation, MOTC, Chinese-Taipei)

**23: Traffic Management Based on a Novel Road Traffic Prediction System for the Event of Macau Grand Prix**

Ngoc Vai Chiang (Transport Bureau of Macau SAR, Macao), Lap Mou Tam (University of Macau, Macau), Kin Hou Lai (Transport Bureau of Macau SAR, Macau), Ka In Wong (Institute for the Development and Quality, Macau) and Wai Meng Si Tou (Transport Bureau of Macau SAR, Macau)

**38: The Simulation Analysis of Tunnel Traffic Management for Suhua Highway Mountain Section Improvement Project**

Pin-Chun Liu and Cheng-Hsiu Tsou (CECI Engineering Consultants, Inc., Chinese-Taipei)

**29: Development of the Agent-based Unied Simulation Environment for ITS Services**

Ryo Fujii, Takahiro Ando, Kenji Hisazumi, Tsunenori Mine, Tsuneo Nakanishi and Akira Fukuda (Kyushu University, Japan)

## I TS04 - Autonomous Driving & Vehicle

**Moderator :** Ryozo Kiyohara (Kanagawa Institute of Technology, Japan)

**61: Development of Autonomous Driving Set Box for Mobility Scooter**

Yuichiro Nakayama and Toshio Ito (Shibaura Institute of Technology, Japan)

**116: TomTom Enables Autonomous Driving with the HD Map Loop**

Andy Marchant, Tomaso Grossi (TomTom, Netherlands), Bouke Douma (TomTom, Japan) and Filip Ballegeer (TomTom, Belgium)

**53: Exploring the Relationship between Fleet Size and Vehicle-Kilometres Travelled in Autonomous Mobility on-Demand Systems**

Farid Javanshour, Hussein Dia (Swinburne University of Technology, Australia) and Gordon Duncan (Autodesk Inc, United Kingdom)

**46: Social Impact of Transportation Technical Innovation - The Case of Autonomous Vehicles -**

Wei Chien-Hung and Chen Yu-Yu (National Chang Kung University, Chinese-Taipei)

**110: Implimentation of Mutual Concessions of Autonomous Cars Using Deep Q-Network**

Ichitaro Ogawa, Soichiro Yokoyama, Tomohisha Yamashita, Hidenori Kawamura (Hokkaido University, Japan), Akira Sakatoku, Tadashi Yanagihara, Tomohiko Ogishi and Hideaki Tanaka (KDDI Research Inc., Japan)



## | TS05 - Safe Driving (2)

**Moderator :** Kazunori Shidoji (Kyushu University, Japan)

**63: USE OF THE DRIVING DIAGNOSIS FUNCTIONS TO PROVIDE GUIDANCE ON SAFE DRIVING**

Jun Sakano, Hiroyuki Oishi, Tomonori Sugiyama and Yoshio Hamada (Yazaki Energy System Corporation, Japan)

**49: Use Of The Capability Of The Drive Recorder To Detect An Inter-Vehicle Distance For Effective Driver Training**

Hiroyuki Oishi, Yuuichi Kobayashi, and Takeoki Aochi (YAZAKI Energy System Corporation, Japan)

**56: Development of System for Assessing Unsafe Driving Act of Elderly Driver**

Tomoki Furukawa, Hiriofumi Mori, Hatsuo Yamasaki, Muneo Yamada and Tomoaki Nakano (Meijo University, Japan)

**94: A Study on the Foot Position to Prevent the Pedal Misapplication**

Kunitomo Aoki and Hirofumi Aoki (Nagoya University, Japan)

**48: A LoRaWAN-based Safe Driving Monitoring System**

Kazuaki Goshi, Takuya Kameoka, Haruka Nakashima, Masaki Hayashi (Kyushu Sangyo University, Japan), Yasuaki Sumida (Chikushi Jogakuen University, Japan) and Katsuya Matsunaga (Kyushu University, Japan)

## | TS06 - Traffic State Estimation

**Moderator :** Shigemi Ishida (Kyushu University, Japan)

**64: Effect of Different Road Pricing Strategies on a Multimodal Network with a Hysteretic Macroscopic Fundamental Diagram**

Seham Hemdan, Amr M. Wahaballa and Fumitaka Kurauchi (Gifu University, Japan)

**119: TRAFFIC OPTIMISATION USING COORDINATED GREEN TRAFFIC SIGNALS - Approaches, Challenges and Strategies -**

Carissa Lu Ming Ma, Simon Ho, and Germaine Tay (Land Transport Authority, Singapore)

**128: Automatic Extraction of Passing Scene through Signalized Intersection by Detecting Continuous Traffic Signal Candidates from Event Data Recorder**

Mikuni Motoi, Haruki Kawanaka (Aichi Prefectural University, Japan), Md. Shoaib BHUIYAN (Suzuka University of Medical Science, Japan), and , Koji Oguri (Aichi Prefectural University, Japan)

**17: Development of a carpool app as a smart travel choice**

Chih-Lin Chung, Chia-Yi Pan, Chin-Fong Lee, Wan-Zhen Yu and Yue-Lang Cheung (Tamkang University, Chinese-Taipei)

**62: Traffic State Estimation Using Traffic Measurement from the Opposing Lane - An Error Analysis by Fluctuation of Input Data -**

Katsuya Kawai (Mitsubishi Electric Corporation, Japan), Atsushi Takenouchi (Tohoku University, Japan), Masahiko Ikawa (Mitsubishi Electric Corporation, Japan) and Masao Kuwahara (Tohoku University, Japan)



## | TS07 - Connected Car

Moderator : Dr. Vrizlynn Thing (A\*Star, Singapore)

### **73: Controlling Sensing Information Dissemination for Collective Perception in VANET**

Kaito Furukawa (Shizuoka University, Japan), Mineo Takai (University of California, USA) and Susumu Ishihara (Shizuoka University, Japan)

### **45: Achieving Secure Vehicle-to-vehicle Key Establishment in LTE-A Networks**

Qinglei Kong and Maode Ma (Nanyang Technological University, Singapore)

### **76: Adopting V2X Technology to Improve Motorcycle Safety**

Yen-Yu Chen (Vehicle Safety Certification Center, Chinese-Taipei), Chien-Pang Liu, Mu-Han Wang (Ministry of Transportation and Communications, Chinese-Taipei), Chih-Ching Chang (China Engineering Consultants, Inc, Chinese-Taipei), Tien-Pen Hsu (National Taiwan University, Chinese-Taipei), I-Heng Meng, Chi-Sheng Lin (Institute for Information Industry, Chinese-Taipei)

### **140: Comparative Analysis of the Accident Collision Features of Motorcycle and Bicycle to Propose Collision Warning Strategies Using V2X**

Tien-Pen Hsu, Wei-Lun Hsiao and Wan-Ching Ho (National Taiwan University, Chinese-Taipei)

### **75: Implementing Smart Intersections by Adopting V2X Technology to Improve Safety**

Yi-Chuan Wang and Hui-Sheng Feng (Bureau of Transportation Taichung City Government, Chinese-Taipei)

## | TS08 - Driver Assistance

Moderator : Koji Oguri (Aichi Prefectural University, Japan)

### **30: Study on Improvement in Reliability of Driver Arousal Technique with Physiological Magnetic Stimulation**

Masashi Tsukada, Shugo Takegawa, Tomoaki Nakano, Muneo Yamada (Meijo University, Japan) and Kaneo Mohri (Nagoya Industrial Science Research Institute, Japan)

### **31: Study on the Examination of the Driver Arousal Method by Physiological Magnetic Stimulation - Examination on the Influence of Experiment Procedure on Verification Results**

Yoshihide Hayashi, Masashi Tsukada, Tomoaki Nakano, Muneo Yamada (Meijo University, Japan) and Kaneo Mohri (Nagoya Industrial Science Research Institute, Japan)

### **33: Study on the Examination of the Driver Arousal Method by Physiological Magnetic Stimulation - Study on the Effect of Fatigue on Verification Results -**

Atsushi Hibi, Masashi Tsukada, Tomoaki Nakano, Muneo Yamada (Meijo University, Japan) and Kaneo Mohri (Nagoya Industrial Science Research Institute, Japan)

### **66: Awake from slumber during automatic driving**

Shigeyuki Yamabe (Tohoku University, Japan), Shuichi Kawaguchi, Haruhiko Nakatsuji, Rintaro Kuroda (Alpine Electronics, Inc., Japan) and Fumihiko Hasegawa (Tohoku University, Japan)





## | TS09 - Traffic Risk and Congestion Management

Moderator : Greg Blocker (TransCore, USA)

### **10: Tensor-based Anomalous Traffic Congestion Pattern Discovery in Large-scale Urban Areas with Probe Vehicle Data**

Stanislav Lykov and Yasuo Asakura (Tokyo Institute of Technology, Japan)

### **14: The Area Traffic Control Systems in Tainan City**

Shang Yee Tung, Wei-Ming Ho, Ching-Huang Hsu, Chen-Chien Huang (IISI, Chinese-Taipei), Yang-Cheng Lin, Po-Chang Huang (Tainan City Government, Chinese-Taipei)

### **129: Challenge to Forecast Traffic Congestion Level using Weather Information**

Hiroaki Ikeuchi (The University of Tokyo, Japan), Kiichiro Hatoyama (Nagaoka University of Technology, Japan), Ryota Kusakabe and Ikumi Kariya (The University of Tokyo, Japan).

### **81: Implementing Coordinated Real-time Regional Traffic Control to Solve Traffic Congestion**

Yi-Chuan Wang and Hui-Sheng Feng (Bureau of Transportation Taichung City Government, Chinese-Taipei)

## | TS10 - Sensing

Moderator : Susumu Ishihara (Shizuoka University, Japan)

### **34: Study on Simultaneous-Walking and Simultaneous-Cycling Detection System Using the Neural Network**

Takahiko Murayama, Masato Ito, Hatsuo Yamasaki, Tomoaki Nakano and Muneo Yamada (Meijo University, Japan)

### **32: Construction of deterrence system of simultaneous-walking and its validity**

Masato Ito, Astushi Ishizuka, Takumi Yamamoto, Hatsuo Yamasaki, Tomoaki Nakano and Muneo Yamada (Meijo University, Japan)

### **144: Initial Evaluation of Acoustic Train Detection System**

Koji Sato, Shigemi Ishida, Junpei Kajimura, Masato Uchino, Shigeaki Tagashira and Akira Fukuda (Kyushu University, Japan)

### **137: Design of Ultra Low Power Vehicle Detector utilizing Discrete Wavelet Transform**

Kazuo Kubo, Chengyu Li, Shigemi Ishida, Shigeaki Tagashira and Akira Fukuda (Kyushu University, Japan)

### **141: Exploring the potential of cellular-based vehicle probing (CVP) data in application of transportation — the experience of deployment, testing and validation**

Yen-Yu Chen (Vehicle Safety Certification Center, Chinese-Taipei), Chien-Pang Liu, Chung-Han Lin and Mu-Han Wang (Ministry of Transportation and Communications, Chinese-Taipei)



## | TS11 - Driver Monitoring

**Moderator :** Shintaro Ono (Honda Research Institute / The University of Tokyo, Japan)

**89: Clustering for Eye-Gaze Tracking Data of Drivers supported by Drive Assist Agents**

Naoto Mukai, Satoko Takashima, Namiki Yamanaka (Sugiyama Jogakuen University, Japan), Kazuhiro Fujikake, Takahiro Tanaka and Hitoshi Kanamori (Nagoya University, Japan)

**152: The Development of An Intelligent Driver Behavior Monitoring System For Safety Improvement**

Hooi Ling Khoo (Universiti Tunku Abdul Rahman, Malaysia)

**57: The Effect of Unconscious Learning to Driver Attention**

Shuji Sudo and Toshio Ito (Shibaura Institute of Technology, Japan)

**70: Development and Evaluation of a Driving Monitor System for Elderly Drivers**

Akifumi Tsuyuki and Tatsuru Daimon (Keio University, Japan)

**77: The Application of Electronic Tag to Analyze Driving Behaviors**

Yi-Chuan Wang and Hui-Sheng Feng (Bureau of Transportation Taichung City Government, Chinese-Taipei)

## | TS12 - Smart Parking

**Moderator :** Hiroshi Kawasaki (Kyushu University, Japan)

**143: Development and application of smart city an evidence of use eTag with smart parking service**

Hao Weo Lin, Yi-Shan Chuang and Chia-Chi Wu (FETC, Chinese-Taipei)

**102: An Industrial Perspective on 3D Mapping Car-parking Searching System: Evolutional Cases of Practical Deployment**

Shao-Nung Chang (National Taiwan University of Science and Technology (NTUST), Chinese-Taipei)

**115: Smart Parking Guidance Management System for Tourist Attractions of North Taiwan Area.**

Sun Yu, Chen Wei Teng, Tang Hsiao Ling, and Justin Su (Sunsy International Ltd., Chinese-Taipei)

**109: From Parking Service to Innovation Service: An Exploratory Case Studies of Smart Parking Management in Taiwan**

Shao-Nung Chang (National Taiwan University of Science and Technology, Chinese-Taipei)

**15: The Traffic Information Analysis and Monitoring Platform for EcoMobility World Festival in Kaohsiung City**

Ching-Huang Hsu, Wei-Ming Ho, Han-Yun Li, Chih-Kang Wang (International Integrated System Inc. (IISI), Chinese-Taipei), Sheng-Feng Hung (Kaohsiung City Government, Intelligent Transportation Center, Chinese-Taipei)

## | TS13 - Image analysis

**Moderator :** Masayuki Kanbara (Nara Institute of Science and Technology, Japan)

**21: Design and Implementation of High accuracy People Counting System in Tramcars based on 3D vision**

Ngoc Tuan Huynh, Masanobu Hasegawa, Ba-Thai-Dien (CM Engineering Vietnam, Vietnam), and Yuji Fujimura (CM Engineering Japan, Japan)

**50: Study on Effect of Artificial Image Noise to the Accuracy of Convolutional Neural Network**

Mohd Hafiz Hilman Mohammad Sofian and Toshio Ito (Shibaura Institute of Technology, Japan)

**101: DEVELOPMENT OF I2V INFORMATION COLLECTION/DISTRIBUTION SYSTEM USING EDGE SERVER TO SUPPORT AUTONOMOUS DRIVING SYSTEM**

Takeshi Suehiro, Kyoko Hosoi and Kenichi Nakura. Eiji Yamamoto, Masashi Mitsumoto, Mamiko Arai, Seiji Kozaki and Yoshiaki Tsuda (Mitsubishi Electric Corporation, Japan)

**147: DEVELOPMENT AND EVALUATION OF A TRAFFIC MEASUREMENT SYSTEM USING HOG FEATURE AND SUPPORT VECTOR MACHINE**

Hirofumi Matsuda and Koji Makanae (Miyagi University, Japan)

**145: Quantitative Evaluation of the Number and the Blur Size of Input Images in Super Resolution of On-Vehicle Fisheye Camera**

Teruhisa Takano, Shintaro Ono (The University of Tokyo, Japan), Hiroshi Kawasaki (Kyushu University, Japan) and Katsushi Ikeuchi (Microsoft, USA)

## | TS14 - Safety Mechanism

**Moderator :** Yuji Inoue (Toyota Info Technology Center Co. Ltd., Japan)

**139: Lightning Protection for Electric Railway In Indonesia - Telecommunication and Signalling System**

Reynaldo Zoro, Ruslam Rachmadi Pakki (Bandung Institute of Technology, Indonesia) and Roni Komar (Indonesia Railway Company, Indonesia)

**149: Making it easier for Pedestrians to Cross Roads in Singapore with Green Man +**

Tan Beng Hwee Francis (Land Transport Authority of Singapore, Singapore)

**11: Managing the Risks of Accidents by Platooning Small Public Transport in Shared Space**

Makoto Itoh, Hikaru Takatori, Sari Yamamoto and Masayuki Kawamoto (University of Tsukuba, Japan)

**83: Disaster sensor using AI-based composite material stress-luminescent particles for risk detection system of cut earth slope disruption**

Kyosuke Akachi, Keiji Shibata, Kenji Matsuda, Seungwon Lee, Takahisa Ohji, Kenji Amei and Yuukou Horita (University of Toyama, Japan)

## | TS15 - Smart City

**Moderator :** Kiichiro Hatoyama (Nagaoka University of Technology, Japan)

**85: An Empirical Study on CO2 Reduction Effect Measurement of Ultra-Compact Electric Vehicle Using IoT Device**

Hideki Kato (Toyota Transportation Research Institute, Japan), Hidekazu Suzuki (Meijo University, Japan) and Yasuhide Nishihori (Toyota Transportation Research Institute, Japan)

**13: Simulation on Social and Economic Benefits of VICS WIDE service**

Shinya Adachi, Yasuhiko Iwasaki, Kazuhiko Mizushima (Vehicle Information and Communication System Center, Japan) and Hisatomo Hanabusa (i-Transport Lab., Japan)

**96: Smart Roadside Safety in Taipei, Taiwan**

Hj Huang, Cy Chen, Tc Yeh and JI Liu (Taipei City Traffic Engineering Office, Chinese-Taipei)

**93: Big Data drives Smart City Traffic Management**

Phil Allen (TomTom, New Zealand)

**47: Smart Bus Terminal Development for Multimodality**

De-Jun Wang (Wan Da Tong Enterprise Co., Ltd, Chinese-Taipei), Ya-Wen Chen (National Taiwan University, Chinese-Taipei), Ying- Lin Wu (Wan Da Tong Enterprise Co., Ltd, Chinese-Taipei) and S. K. Jason Chang (National Taiwan University, Chinese-Taipei)

## | TS16 - Travel Time Estimation

**Moderator :** Tomio Miwa (Nagoya University, Japan)

**87: Arrival Time Estimation and Visualization based on Bus Traffic Data**

Hitomi Imai, Kei Hiroi and Nobuo Kawaguchi (Nagoya University, Japan)

**42: Travel time estimation in a road network by using traffic probe data**

Takashi Owada, Ryuichi Tani and Kenetsu Uchida (Hokkaido University, Japan)

**24: Analysis of Travel Time Reliability on Road Hierarchy in Winter Traffic Conditions using ETC2.0 Probe Data**

Tosporn Arreeras, Masaki Kanbe, Takumi Asada and Mikiharu Arimura (Muroran Institute of Technology, Japan)

**146: An Adaptive Approach for Predicting Bus Travel Time over Unstable Intervals**

As Mansur and Tsunenori Mine (Kyushu University, Japan)

**28: Developing an intelligent travel time prediction system - an exploratory approach**

Wei-Fang Niu and Ming-Chorng Hwang (China Engineering Consultants, Inc., Chinese-Taipei)

## | TS17 - Behaviour analysis

Moderator : Itaru Kitahara (Tsukuba University, Japan)

### **86: Driving behavior and characteristics of eye movements during inattentive driving**

Xi He and Kazunori Shidoji (Kyushu University, Japan)

### **88: Analysis of bike usage behavior for designing the bicycle-sharing system in Takaoka city**

Yuya Umawatari, Shinya Chida, Kyosuke Akachi, Shina Takano, Keiji Shibata and Yuukou Horita (University of Toyama, Japan)

### **117: EFFECT OF THE MOVING-LIGHT-GUIDE-SYSTEM ON CAR-FOLLOWING BEHAVIOR AT SAG**

Yuuta Tabira and Yasuhiro Shiomi (Ritsumeikan University, Japan)

### **97: Use of Innovative Cellular-based Probes to Explore Travel Behavior and Identify Potential Terminal Locations for Freeway Bus System on Taipei and Yilan Corridor**

S. K. Jason Chang (National Taiwan University, Chinese-Taipei), Chia-Hung Chueh (Datarget Innovation, Chinese-Taipei), Ta-Wei Shen (Trivect Consultants Inc., Chinese-Taipei), Ya-Wen Chen (Advanced Public Transportation Research Center, Chinese-Taipei), Chao-Neng Chang, Chih-Yueh Chen (Institute of Transportation, MOTC, Chinese-Taipei) and Shin-Yun Tsai (Trivect Consultants Inc., Chinese-Taipei)

### **121: Development and Validation of Behavior Modification Program Using Gamification and GPS data**

Ryota Nakashima, Yoshihiro Sato and Takuya Maruyama (Kumamoto University, Japan)

## | TS18 - Electronic Toll Collection

Moderator : Masao Kuwahara (Tohoku University, Japan)

### **16: Use of EPS data to explore user behavior of Taipei's bikesharing system**

Chih-Lin Chung and Shu-Yuan Li (Tamkang University, Chinese-Taipei)

### **155: The Integration of eTag and 4G OBU Data for Intelligent Transportation Information Platform in Taiwan**

Liang-Tay Lin, Pei Liu, Chao-Fu Yeh, Pei-Ju Wu, Chi-Chuang Huang and Ho-Sheng Chang (Feng-Chia university, Chinese-Taipei)

### **37: A new ETC system by fusion of RFID and deep visual information**

Geng Yang (Shenzhen Genvict Technologies Co., Ltd., China) Jane You (The Hong Kong Polytechnic University, Hong Kong), Tao Xiang, Ning He Shenzhen Genvict Technologies Co., Ltd., China), Zhenhua Guo ( Tsinghua University Shenzhen Graduate School, China) and Qin Li (Shenzhen Genvict Technologies Co., Ltd., China)

### **22: Smartphone Payment for Highway Toll Collection**

Wen-Jing Huang (CECI Engineering Consultants, Inc., Chinese-Taipei)

### **51: The Evaluation of Travel Demand Modelling Using Electronic Toll Collection Data**

Dung-Ying Lin, Shu-Chiao Lin, Meng-Rung Tsai, Ke-Li Kuo, I-Ting Lin and Chien-Hung Wei (National Cheng Kung University, Chinese-Taipei)





## | TS19 - Big Data and Machine Learning (1)

Moderator : Takuya Maruyama (Kumamoto University, Japan)

### **103: Classification of Road Surface Anomalies Using Ensemble Methods with Deep Convolutional Neural Network**

Pitiphum Posawang, Satidchoke Phosaard, Suphakit Niwattanakul (Suranaree University of Technology, Thailand) and Wasan Pattara-Atikom (National Electronics and Computer Technology Center (NECTEC), Thailand)

### **39: Approach Deep Learning Method for Online Traffic Congestion Prediction Model with Freeway Big Data Analysis**

Shiang-Jeng Wang, Cheng-Hsiu Tsou and Chi-Li Lin (CECI Engineering Consultants, Inc., Chinese-Taipei)

### **26: A Study on Applying Deep Q-Learning Network to Isolated Intersection Adaptive Signal Control**

Chia-Hao Wan and Ming-Chorng Hwang (CHINA ENGINEERING CONSULTANTS, INC., Chinese-Taipei)

### **68: Predicting Intermodal Journey Transit Time Using Big Data Analytics through the Implementation of Machine Learning Alogarithm and Computer Vision**

Ikhlas Bahar, Muhammad Amin Bakri, Syahri Ramadhan, Farras Afif and Sutan Faizal Lubis (PT. Brilyan Trimatra Utama, Indonesia)

### **18: Evaluating The Safety Of Blockchain**

Congcong Ye, Guoqiang Li, Hongming Cai (Shanghai Jiao Tong University, China) and Yonggen Gu (Huzhou University, China)

## | TS20 - Bus Passenger Management

Moderator : Mariko Okude (Hitachi Ltd., Japan)

### **153: Trial of assistive technologies on buses in Singapore to help Persons with Disabilities**

Suvi Schwab and Steve Robinson (INIT Asia-Pacific Pte. Ltd., Singapore)

### **41: Signal-Based Speed Control for Automated Bus at Signalized Intersections**

Bo Yang (The University of Tokyo, Japan), Takayuki Ando, Wataru Kugimiya, Masaya Sakamoto, Keiji Aoki (Advanced Smart Mobility Co., Ltd, Japan), Tsutomu Kaizuka and Kimihiko Nakano (The University of Tokyo, Japan)

### **111: Simulation and Visualization of Bus Operation with Passengers using Actual Bus Management Information**

Takehiro Arai, Kei Hiroi and Nobuo Kawaguchi (Nagoya University, Japan)

### **78: Adopting Connected Vehicle Technology to Improve Bus Service Accessibility for Blind and Visually Impaired Passengers**

Yi-Chuan Wang and Hui-Sheng Feng (Bureau of Transportation Taichung City Government, Chinese-Taipei)

### **90: Warning Notification for Potential Collisions for Passenger Anxiety Reduction on Autonomous Wheelchairs**

Taishi Sawabe, Shouhei Ota, Masayuki Kanbara (Nara Institute of Science and Technology, Japan), Norimichi Ukita (Toyota Technological Institute, Japan), Tetsushi Ikeda (Hiroshima City University, Japan), Luis Yoichi Morales Saiki (Nagoya University, Japan), Atsushi Watanabe (SEQSENSE Inc, Japan) and Norihiro Hagita ( Nara Institute of Science and Technology, Japan)





## | TS21 - Next-Generation Urban Transport System

**Moderator :** Shoshi Mizokami (Kumamoto University, Japan)

**123: Consideration of system architecture for MaaS model in Japan**

Yosuke Hidaka (East Japan Railway Company, Japan)

**20: Next-generation Urban Transport System “Ha:mo RIDE” in Toyota City**

Akinori Nakagaki, Masaya Douyama and Naohiro Yamada (Toyota Municipal Government, Japan)

**40: Mobility as a Service, Mobility on Demand: the way forward**

Richard Harris (HMI Technologies, United Kingdom)

**44: Toyota SAKURA Project Activities - Application of Next Generation Vehicles as Mobile Power Generators -**

Mikiko Kato, Tomomi Hayashi, and Daiki Mori (Toyota Municipal Government, Japan)

## | TS22 - Big Data and Machine Learning (2)

**Moderator :** Ryo Kanamori (Nagoya University, Japan)

**105: Integrated Zonal Fare for Urban Transit Systems based on Smart Card Big Data**

Che-Hsun Huang (Trivect Consultants INC., Chinese-Taipei), S. K. Jason Chang, Ya-Wen Chen (National Taiwan University, Chinese-Taipei) and Ta-Wei Shen (Trivect Consultants INC., Chinese-Taipei)

**113: Clustering of tram users spatio-temporal characteristics from smart card data**

Takumasa Morita, Shoshi Mizokami (Kumamoto University, Japan) and Yoshiaki Nakamura (Kozo Keikaku Engineering Inc., Japan)

**154: Destination Estimation of Passenger Trip Based on Smart Card Data**

Chao-Fu Yeh and Chi-Hua Lu (Feng-Chia university, Chinese-Taipei)

**67: Evaluating the Influence of Speed on Intercity Bus Accident Severity in Thailand using GPS Data**

Suharit Masmek and Agachai Sumalee (The Hong Kong Polytechnic University, Hong Kong)



## | TS23 - Application

Moderator : Kenya Satoh (Doshisha University, Japan)

### **79: Estimating willingness-to-pay for autonomous pickup services for agriculture products in rural areas of Japan**

Makoto Chikaraishi (Hiroshima University, Japan), Sachiyo Fukuyama (The University of Tokyo, Japan), Hironori Yamane (Fukken Co., Ltd., Japan), Mitsutaka Sawa (Docon Co., Ltd., Japan) and Eiji Hato (The University of Tokyo, Japan)

### **5: The Application and Solution of Speech Recognition in Mobile Ticketing**

Yu-Ting Wu, Tzu-Yuan Chiu, and Nai-Cheng Chin (Taiwan High Speed Rail Corporation, Chinese-Taipei)

### **100: Development of Shared Electric Vehicles in Taiwan**

S.K. Jason Chang, Li-An Yu and Ya Wen Chen (National Taiwan University, Chinese-Taipei)

### **19: Increasing Participants of Smartphone-based Travel Survey in Two Afghanistan Cities: Effects of Reward and Female Survey Conductors**

Quadratullah Zwak, Yoshihiro Sato and Takuya Maruyama (Kumamoto University, Japan)

## | TS24 - Infrastructure

Moderator : Takashi Oguchi (The University of Tokyo, Japan)

### **98: Enhanced Security System for Electric Vehicle Charging Infrastructure Using the SCMS Certification Scheme**

Sanggyoo Sim, Jaeson Yoo, Eui-Seok Kim and Seung-Hwan Ju (Penta Security Systems, Inc., South Korea)

### **151: ITS R&R Experiment Field for Mobility on Roads and Tracks**

Shihpin Lin, Toshiyuki Sugimachi, Tsutomu Kaizuka, Kenji Kouno, Yoshihiro Suda and Kimihiko Nakano (The University of Tokyo, Japan)

### **135: Mobile Vehicle Cloud Computing in Challenged Network Environment in Disaster Situations**

Yoshitaka Shibata, Masaki Otomo (Iwate Prefectural University, Japan), Goshi Sato (NICT Resilient ICT Research Center, Japan) and Noriki Uchida (Fukuoka Institute of Technology, Japan)

### **133: Mobility Information Infrastructure by A New N-Wavelength Wireless Communication Method and IoT Road Condition Technology**

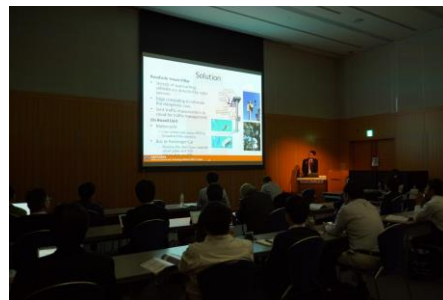
Yoshitaka Shibata, Kenta Ito (Iwate Prefectural University, Japan), Goshi Sato (NICT Resilient ICT Research Center, Japan), and Noriki Uchida (Fukuoka Institute of Technology, Japan)

# Session





# Session



# Poster Session

May 9 17:30-19:30 ▶ Lunch Area

Moderator : Tsuneo Nakanishi (Fukuoka University, Japan) & Sungjoon Hong (Pacific Consultants Col. Ltd., Japan)

## Traffic Management and ITS Application

### 1: Traffic Management at Gelora Bung Karno Stadium and Surrounding Areas during Asian Games 2018

Ahmad Munawar and Atar Koswara Rusli (Gadjah Mada University, Indonesia)

### 7: Urban mobility ITS application deployments in Japan

Junichi Hirose (HIDO, Japan)

### 12: Field Test of Traffic Information in VICS WIDE Service

Shinya Adachi, Yasuhiko Iwasaki and Toshihiro Matsumoto (Vehicle Information and Communication System Center, Japan)

### 80: The Study on ITS Application for Enhancing Tour Buses Safety

Shu-Fang Lai (Takming University of Science and Technology, Chinese-Taipei) and Chin-Chen Lin (Telenet International Corp., Chinese-Taipei)

## Vision-based detection mechanism

### 72: Development of Number Count System for Oncoming Vehicle using On-vehicle Camera

Yoshito Yabuta and Takayoshi Yokta (Tottori University, Japan)

### 99: A lane detection method based on 3D-LiDAR

Yu-Fang Wang and Yi-Shueh Tsai (Automotive Research & Testing Center, Chinese-Taipei)

### 132: New Simulation Approaches for Vehicular Ad-Hoc Network Development

Sara Ouabbou and Takumi Miyoshi (Shibaura Institute of Technology, Japan)

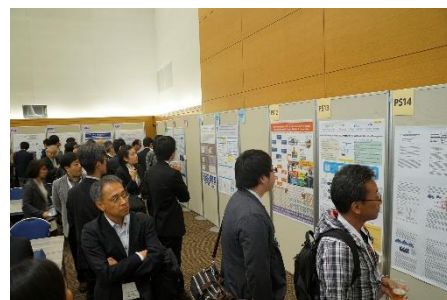
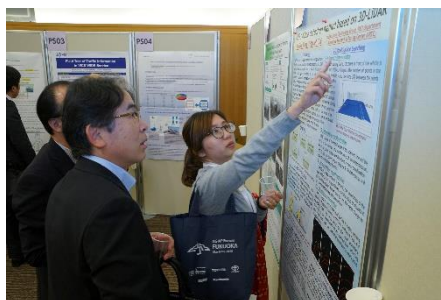
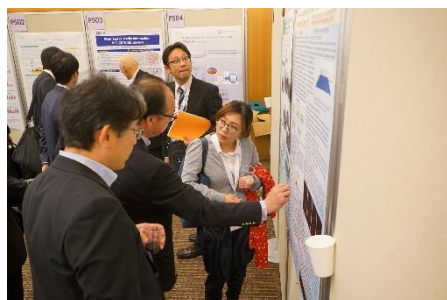
## Safety and Security

### 6: Plan and Implementation of Enterprise Information Security Protection Mechanism and Information Security Management System

Chia-Nan Yen and Cheng-Hsun Weng (Taiwan High Speed Rail Corporation , Chinese-Taipei)

### 108: Model-based Hybrid MAC protocol for traffic accident avoidance system at intersection

Yutaro Aizawa, Toshikuni Miyazaki and Ryuji Kohno (Yokohama National University, Japan)





# Poster Session

## Data Collection and Utilization

### 25: Development of a Mobile Application to Collect Passenger Data for Regional Public Transportation

Kentarō Inenaga (Kyushu Sangyo University, Japan)

### 55: A Feasibility Study to utilize ETC2.0 Probe Data for Bus Vehicle Operation Management

Takayuki Hirasawa, Koichi Sakai, Yoshihiro Suda (The University of Tokyo, Japan), Okuto Yamaguchi (Tobu Business Solution Corp., Japan), Takeshi Hayaki, Eiichi Tokonami (Mobile Create, Japan), Isao Fujimoto, and Mitsuteru Kawabata (System Keep Yard, Japan)

### 65: Digital River - Capitalizing the value of Open Data Movement for IoT, enabling connected vehicles as open platforms

Tomo Yamaguchi (Solace Corporation, Japan), Queenie Tse (Solace Corporation, Hong Kong), Sumeet Puri and Phil Scanlon (Solace Corporation, Singapore)

### 150: A Comparative Study between AADT, Centrality Measures and Surveyed Traffic Volume Data

Lilian Pun-Cheng (The Hong Kong Polytechnic University, Hong Kong)

## Driver behaviour and Assistant in Automated Driving

### 3: The Development of intelligent Connected-Driver Advisory System(C-DAS) for Energy efficiency Management - A case study of Taiwan High Speed Rail

Yi-Yiung Jen, Ming-Chang Yang and Yen-Chen Lai (Taiwan High Speed Rail Corporation, Chinese-Taipei)

### 52: Study on Effective Tasks for Keeping Driver's Arousal Level High in Automated Driving

Akihiro Abe and Toshio Ito (Shibaura Institute of Technology, Japan)

### 59: Analysis of Driver Behaviour during Fuel-saving Driving using CAN Information

Kenichi Sato and Toshio Ito (Shibaura Institute of Technology, Japan)

### 148: Development and Perspectives of Automated Driving in China

Honghai Li, Jian GAO, and Sheng YIN (Research Institute of Highway Ministry of Transport, China)

## Smart Mobility

### 4: Introduction of Taiwan High Speed Rail Smart Mobility Service

Wen-Hui Chiang (Taiwan High Speed Rail Corporation, Chinese-Taipei)

### 107: The Smart Mobility in Kaohsiung

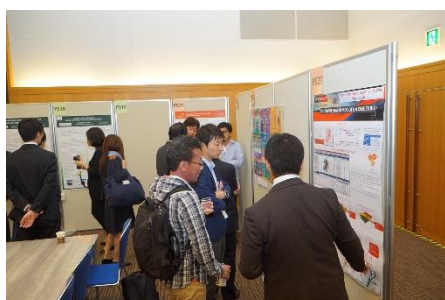
Chien-Sheng Hao, Shing Ho and Chih-Ming Lin (Kaohsiung Rapid Transit Corp., Chinese-Taipei)

### 131: Smart Mobility for Smart Tourism

Suhono Harso Supangkat (Bandung Institute of Indonesia, Indonesia), Pratama Havidia Rahman Suhono (Ritsumeikan Asia Pacific University, Japan), Hafsa Aliya Rahma Suhono and Sri Ratna Wulan (Bandung Institute of Indonesia, Indonesia)

### 156: PTV's Contribution to the Evolution of MaaS, A Case Study

Paul Speirs (PTV Group, United Kingdom)



# Technical Visits

This tour visits the following places:

Traffic Management Center, Fukuoka Prefectural Police  
Fukuoka city Chubu Water Treatment Center  
Hydrogen Station Nishitetsu Tenjin Expressway Bus Terminal

①May 8th 12:50～15:20 ②May 9th 09:30～12:00 ③May 9th 12:50～15:20 ④May 10th 09:30～12:00



## Traffic Management Center, Fukuoka Prefectural Police

Life has become convenient a way with the development of motorized society; the motor vehicles have caused many problems such as traffic accidents, traffic jams, emission gases, and noises. Among them, emission gases and noises are categorized as a pollution, and have even been recognized as such for a quarter of a century. In this situation, the members of the Traffic Control Center have been making the utmost efforts to alleviate the problems by “making the roads effectively usable” or, in other words, “creating a safe and smooth traffic”.



## Fukuoka city Chubu Water Treatment Center Hydrogen Station

Mitsubishi Kakoki Co., Fukuoka city, National University Corporation Kyushu University, Toyota Tsusho Corporation jointly carry out the demonstration project of the system to produce hydrogen from sewage biogas obtained from sewage sludge at the Chubu Water Treatment Center in Fukuoka city and supply hydrogen to fuel cell vehicles, commissioned research from the National Institute for Land and Infrastructure Management. Currently over 20% of sewage biogas obtained by digesting water sludge remains unused in Japan, but biogas have potential to supply enough energy to people. Through this demonstration project, they aim to build a supply chain by producing hydrogen from sewage sludge and supplying it to the hydrogen station.



## Nishitetsu Tenjin Expressway Bus Terminal

A lot of people has used here as the inbound and outbound hub terminal of buses in Kyushu. In 2015 this places has made a fresh start as "Nishitetsu Tenjin Expressway Bus Terminal". All travelers are welcomed to visit with rich hospitality mind and facility so they can spend a relaxed time.

### Supported by

Fukuoka Prefectural Police

### Sponsored by

Fukuoka City  
Nishi-Nippon Railroad Co., Ltd.



# Automated Driving Demo

## Automated driving demonstration for local community (e-COM10)

In the aging society, it is difficult to support the mobility of tourists and local residents due to lack of personnel. In this demonstration, we will conduct public transportation experiences using "low speed electric community bus" aiming at social implementation of autonomous driving which are focusing "mobility in depopulated areas", "mobility to sightseeing spots", and "transportation of people and goods".

What is necessary for the automatic driving technology to spread to society in the Asia-Pacific region? What kind of scene should be applied and what should be addressed to realize that? Hoping for the opportunity to think about the above, we will perform level 3 automatic driving by using public roads around the venue.

This demonstration will be carried out by Gunma University, Center for Research on Adoption of NextGen Transportation Systems, which tackles research, development and advanced human resources development for "social implementation" of the next generation mobility system.



Supported by

Center for Research on Adoption of NextGen Transportation Systems

## A self-driving demonstration for safe transportation

Careless driving and reckless driving that causes traffic accidents have backgrounds of social problems such as aging drivers or staff shortages in forwarding and transportation industries.

In this demonstration we provide trial drive of autonomous technology which enables safety transportation anytime and anywhere for everyone using self-driving bus.

- We provide Level3 self-driving cruise in order to make an opportunity to consider what is necessary to spread autonomous technology in the society of Asia Pacific region, and on what occasion it is expected to be applied, and what is to work on to implement the technology.
- The demonstration is performed in limited section on the route of shuttle bus between international/domestic terminals of Fukuoka Airport.
- The demonstration is conducted by SB Drive Corp. that aims to realize new mobility services and Advanced Smart Mobility Co., Ltd. that researches and develops autonomous technology.

Please take Free Airport Shuttle Bus to join this Demonstration. it takes 30 mins. Please see the timetable on Page 71



Supported by

Fukuoka Prefecture  
SB Drive Corp.  
Advanced Smart Mobility Co., Ltd.  
Nishi-Nippon Railroad Co., Ltd.



# Automated Driving Demo

## Demonstration of autonomous precision docking control

- JTEKT Corporation was established in January 2006 through the merger of Koyo Seiko Co., Ltd., a world-class bearing manufacturer, and Toyoda Machine Works, Ltd., a machine tool manufacturer excelling in world-leading technologies. Combining the most advanced technologies and the manufacturing passion of the two companies, JTEKT is now a trusted systems supplier of automotive components, bearings and machine tools, providing customers with world-class No.1 products and only one technology that result in ongoing contributions to society.
- This demonstration introduces the autonomous precision docking control strategy, which aims at minimizing the gap between the entrance of the bus and the platform. Autonomous precise docking control will contribute to smooth embarkment and disembarkment of passengers including disabled or parents with strollers. [Contents] Autonomous steering maneuver in training course, Docking control at bus stop (Steering and Braking)



Supported by  
JTEKT Corporation

## Driverless Autonomous Driving by Remote Monitoring and Operation

Driverless autonomous driving (level 4 self-driving) is demonstrated by monitoring driver-view video from remote office (Fukuoka International Congress Center). Visitors can experience ride on the autonomous car with autonomous driving of a sloping road and S-shaped curve and remote manual operation assuming trouble of autonomous driving. Ensure of stable mobile communication environment in order to realize uninterrupted video communication becomes the key issue to realize the technology. We have a plan to realize low latency communication by 5G and last one mile mobility service.



Supported by  
KDDI Research, Inc., / KDDI CORPORATION / Tier IV, Inc. / AISAN Technology Co., LTD.

# Demonstration

## Driving technique demonstration (simulated driving) by the instructor of driving training center.

- Nishitetsu Bus training center has established in 1955 and it has accumulated know-how of safety driving through its history.
- It is rare to have a training facility by bus operator in Japan. This center has safety driving education program for each driver and the instructor of this center will demonstrate the driving technique. This driving demonstration requires the correct feel of the size of bus, handling technique and pedal control not to contact obstacles in the course.

### [List of demonstration]

#### 1. Slalom

Drive left and right without contacting the obstacles in the course. It requires the correct feel of the size of bus, handling technique and pedal control

#### 2. S-Curve

It requires the feel of the tire position and the length of the bus (overhang).

#### 3. Parking

Park by driving backwards between buses. It requires the feel of the size of the bus and proper handling and high level driving technique.



Supported by

Nishi-Nippon Railroad Co., Ltd.

## ITS Connect Demonstration

ITS Connect commercially launched in October 2015 in Japan. This system is utilizing a dedicated ITS frequency of 760MHz provides driver with information such as traffic signal and the presence in blind spots of pedestrians and other vehicles that cannot be detected by on-board sensors. Through the demo, participants can experience the following four scenarios at an intersection:

Vehicle-to-Infrastructure communications:

- 1.Red Light Caution
- 2.Signal Change Advisory
- 3.Right-Turn Collision Caution

Vehicle-to-Vehicle communications:

- 1.Emergency Vehicle Notification

NB. Participants may not experience all these services because of the traffic situation during the ride



Sponsored by

Toyota Motor Corporation



# Demonstration

## AI Bus ride

It is a free on-demand transfer service that connects facilities such as Fukuoka International Convention Center and its surrounding tourist attractions and hotels. Anyone who is a conference / exhibition registrant can ride by installing the application.

Please use it as a method of transportation to and from the conference center.

Let's visit the sights of the city using free time between sessions.

By using the coupon obtained using this "AI bus ride", you can gain the benefits of meals and shopping.

Please experience the mobility which realizes optimum operation while automatically calculating in real time and switching the route by AI.

### What is AI Bus ride?

It is a new transportation system that combines the advantages of a taxi (demand type) and a route bus (combination type).

In response to a pick-up request from a smartphone application, AI calculates and operates the vehicles and the pick-up order which are optimal from multiple vehicles.



### Sponsored by

NTT DOCOMO, INC.  
Mirai Share Co., Ltd.

## Traffic Signal Prediction System (TSPS) Demonstration

The demonstration to experience the three functions of Traffic Signal Prediction System (TSPS) which is standardly installed in Honda's Accord Hybrid. The three functions are, Passing Support, Stopping Support, and Starting Support. This system is designed to support smooth driving and environmental countermeasures by using traffic signal information obtained from road-side infrastructure system, such as infrared beacons. When a vehicle passes through a signalized intersection, the system provides recommended speed or optimal deceleration-starting timing on the on-board display for smooth passing. Moreover, while waiting for the traffic light to turn green, the remaining red-light time is displayed to prevent a delay in resuming driving. With this support system, fuel economy enhancement and smooth driving support will be implemented by restraining unnecessary acceleration and deceleration when driving through the traffic signals.



### Sponsored by

Honda Motor Co., Ltd.





## What is "Ideathon"?

"Ideathon" is a coined word combining "idea" and "marathon". It is an event by group work which is done for creating new ideas. We hold international ideathon with the theme of ITS which lasts for 4 days.

From the viewpoint of youth generation, students provide and share new ideas about ITS specialized services and products that combine elemental technologies and advanced technologies such as IoT fields. Each team is formed with about six students from Japan and abroad. Members of each team discuss a given theme, provide and share many ideas in brainstorm style, and brush up to create new values for services and solutions to social problems. We hold a presentation competition on the final day, and teams who proposed excellent ideas would be awarded.

## Aim

The main purpose of this event is to train next generation human resources with the theme of ITS. Overseas students gather from various fields and create ideas for themes. Participants learn about economic, social and cultural differences as well as technology, and seek solutions through communication, and cultivate global minds and acquire analytic reasoning, complex problem solving, collaboration skills, and teamwork.

May 7	
Day 1	<b>Orientation, Seminar and Lecture</b> <b>•Venue</b> : FUKUOKA CITY SCIENCE MUSEUM <b>•Public participation:</b> None (Authorized Only)
May 8	
Day 2	<b>Ideathon I</b> <b>•Venue</b> : Fukuoka International Congress Center (4F) <b>•Public participation:</b> None (Authorized Only) <b>Gala Dinner</b> <b>•Venue</b> : Kawabata Shopping Arcade <b>•Public participation:</b> Interact with GALA Dinner attendees
May 9	
Day 3	<b>Ideathon II</b> <b>•Venue</b> : Fukuoka International Congress Center (4F) <b>•Public participation:</b> None (Authorized Only)
May 10	
Day 4	<b>Presentation Contest</b> <b>•Venue</b> : Fukuoka International Congress Center (4F) <b>•Public participation:</b> None (Authorized Only *Ideathon Sponsors and Participants) <b>Award Ceremony</b> <b>•Venue</b> : Fukuoka International Congress Center (Main Hall) <b>•Public participation:</b> Allowed (Full Conference registrant)

## Ideathon Sponsors

**ADVANTEST®**

P A S O N A  
**TECH**



**ZENRIN**





## Authentication service using "Transportation IC card"

All Full conference attendees will receive "nimoca card" (Transportation IC card) by "Nimoca Co., Ltd" at the registration counter of the conference.

In the conference hall, this card can also be used as an admission pass to the session area and the lunch venue where only the conference attendee can enter and also as a lunch exchange ticket.

Outside of the venue, you will have free rides of Nishitetsu bus in the Fukuoka city by using this card during the week of this conference.

Please experience various services by nimoca card, such as transportation use, electronic money, digital free ticket, admission control and digital ticket certification.



**Full conference registrant**

**ITS AP Forum  
FUKUOKA**  
May 8-10, 2018



**Nishitetsu Bus  
Fukuoka area free ticket  
May 7-12 2018**

**nimoca**

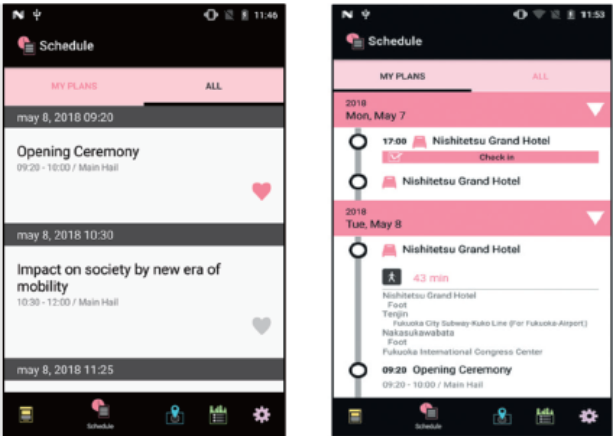
**Sponsored by**

JR East Mechatronics Co., Ltd.  
Nishi-Nippon Railroad Co., Ltd.  
NIMOCA CO., LTD.

## Hospitality application for smartphone

This application allows you to select and register events such as sessions and demonstrations that you want to participate in, so that you can assemble your schedule and receive push notifications before the event starts.

You can also quickly search for transportation and time between key points such as the Fukuoka International Congress Center and the official hotels.



**Sponsored by**

JORUDAN Co., Ltd.



# Gala Dinner May 8 19:00-21:00



Enjoy the bite of local specialties and the festive atmosphere in the most popular shopping avenue of Fukuoka. Join the Gala Dinner!

### Venue

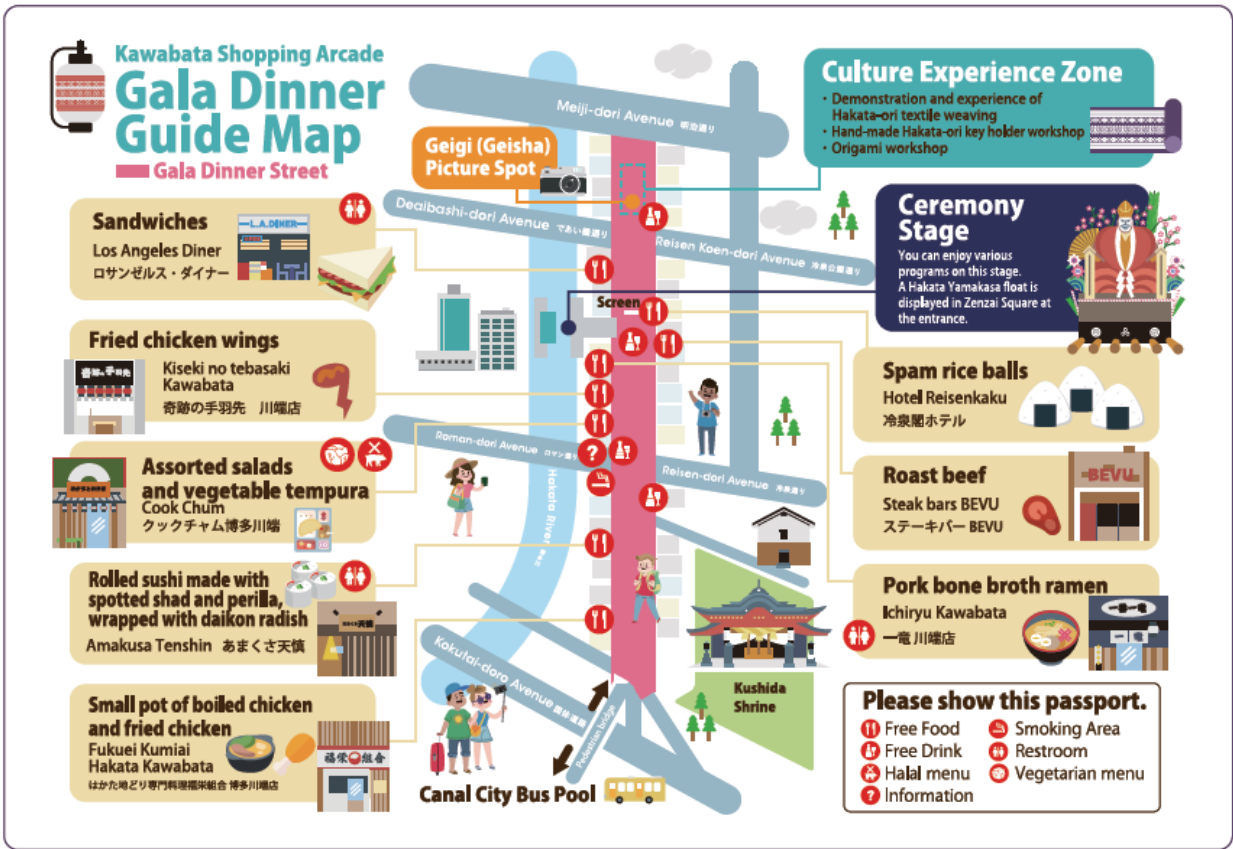
Kawabata Shopping Arcade  
\*Pre-registration required.  
JPY10,000

### Stage Program

19:00 Opening Address・Toast(Professor Yasuura,  
Executive Vice Chair of the Executive Committee)  
19:15 Japanese Drum Performance (Japan Marvelous Drummers)/Dinner time  
19:45 Chindon (Street Musicians) Performance  
21:00 End of Event

### Free Shuttle Bus (Departure Time) (Fukuoka International Congress Center)

17:00
17:30
18:00
18:30
19:00





# Gala Dinner May 8 19:00-21:00





# Post Congress Tours May 11

08:00	Dep. Hakata Station Chikushi Gate (In front of Lawson)
9:00-10:50	TOYOTA MOTOR KYUSHU, INC.
11:30-12:15	JICA Kyushu Café [Lunch]
13:00-14:15	Zenrin Company, Limited
15:00-16:30	YASKAWA Electric Corporation.
18:00 Arr.	Hakata Station



Toyota Motor Kyushu Miyata Plant has won multiple J.D Power awards over the years, including last year (2017) they have achieved the world's No. 1 "Platinum Award". Enjoy the qualified technologies through this inspection.

Zenrin has been providing effective digital maps for car navigation systems and personal computer. See how the map for automatic driving is made.

YASKAWA Innovation Center is established as a facility to convey the fun and wonders of manufacturing as well as the robotics technology. In this tour we will not only visit the Yaskawa Electric Mirai-kan but also the world's first robot manufacturing a robot.





# About the Venue(Exhibition Layout)

## Co-operation Exhibition 1

### **Honda Motor Co.,Ltd.**

#### **Towards realizing of “enjoying the freedom of mobility”**

Honda's motorcycles have been beloved by people around the world as tools to make people's lives colorful at will and also as comfortable and convenient transportation means. Honda produced approx. 17 million units of motorcycle in 2016.

In the exhibition, mainly big motorcycle models including Gold Wing Tour are presented from production models of Kumamoto factory of Honda Motor Co., Ltd. which is the mother factory of motorcycle production.

The Gold Wing Tour undergoes the first full-model change in the last 17 years applying many advanced technologies, such as Honda's proprietary DCT technology. We also introduce motorcycles, such as CRF1000L with V2X technology having the advanced HMI (Human Machine Interface), from the ITS field. Please try many models and enjoy our motorcycles with wonderful experience.

---

## Co-operation Exhibition 2

### **TOYOTA MOTOR KYUSHU, INC., TOYOTA MOTOR CORPORATION, Sumitomo Electric Industries, Ltd., Kurume Institute of Technology**

#### **Connected to broaden mobility world**

There are dramatic change around the automobile industry such as the ICT technology, IoT and big data, AI. The majority of automobiles will be connected to the network and create the new value and services in the near future. We will introduce the safe, comfortable, convenient and ecological society achieved by the car communicating with road infrastructure and pedestrians. We also introduce the new possibility of mobility by the autonomic wheel chair with an AI engine.

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## Co-operation Exhibition 3

### **KDDI and KDDI Research, Inc.**

#### **The demonstration of the remote monitoring of the car.**

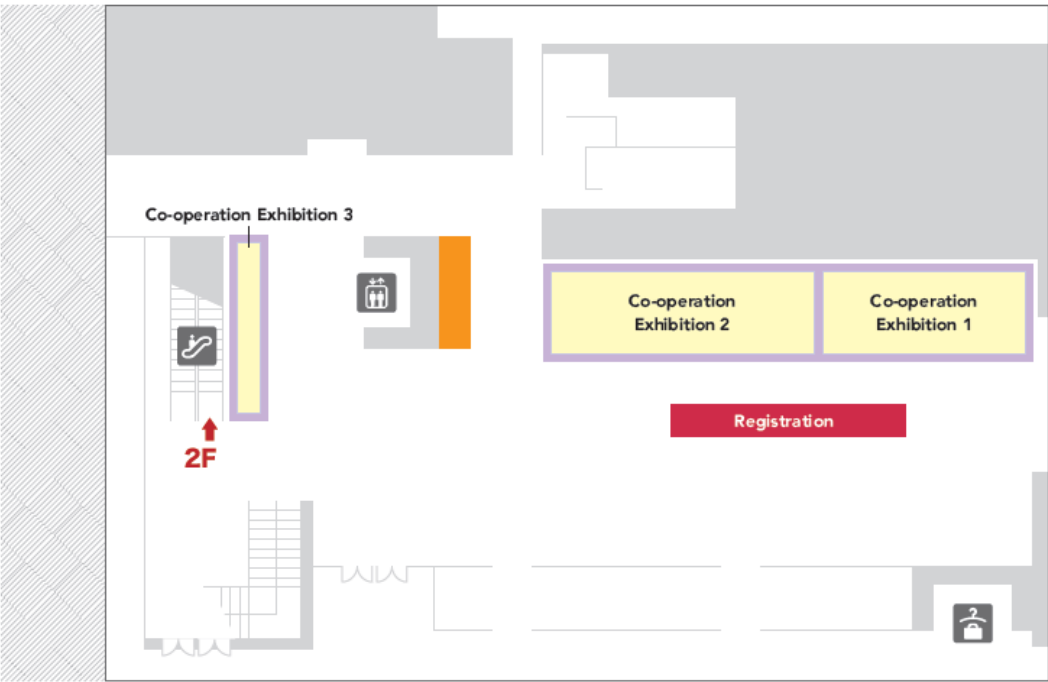
Here, you can see a demonstration of the remote monitoring of the car.

At the Nishitetsu driving school, we will also demonstrate automatic driving.

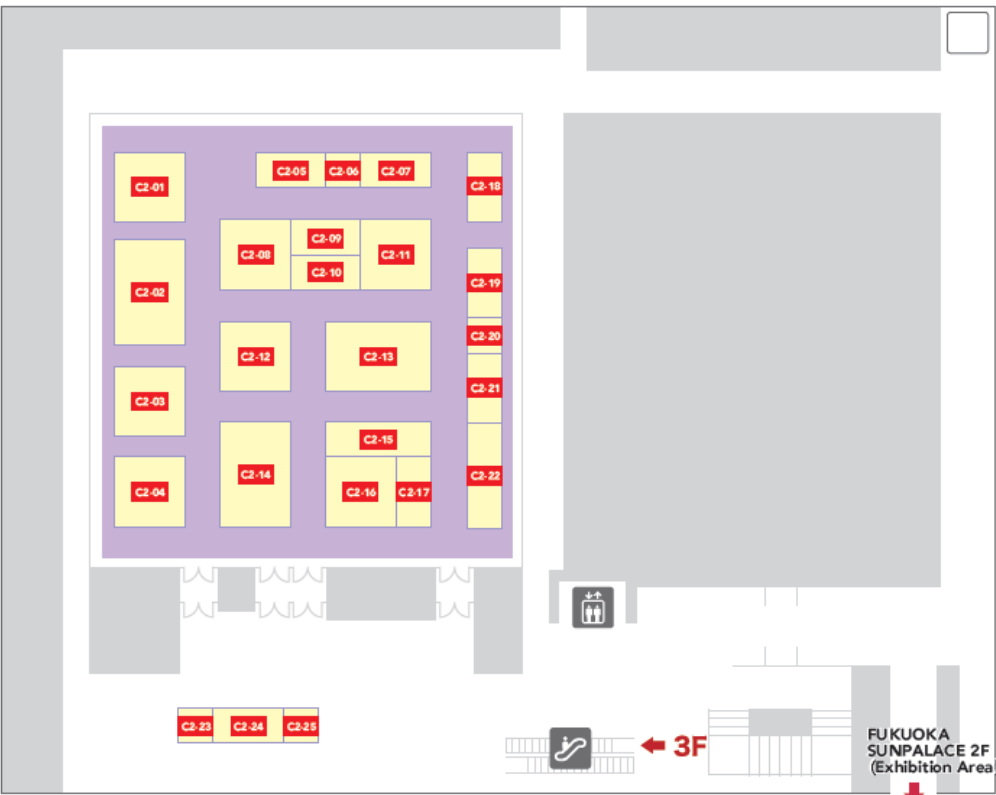
Driverless autonomous driving (level 4 self-driving) is demonstrated by monitoring driver-view video from the remote office (Fukuoka International Conference Center). Visitors can experience riding in the autonomous car with autonomous driving on a sloping road and S-shaped curve. If problems occur, the remote manual operation system will automatically take control. Ensuring a stable mobile communication environment in order to realize an uninterrupted video communication, becomes the key issue to creating this technology. We have a plan to achieve low latency communication using 5G and the last mile mobility service.

# About the Venue(Exhibition Layout)

## Fukuoka International Congress Center 1F



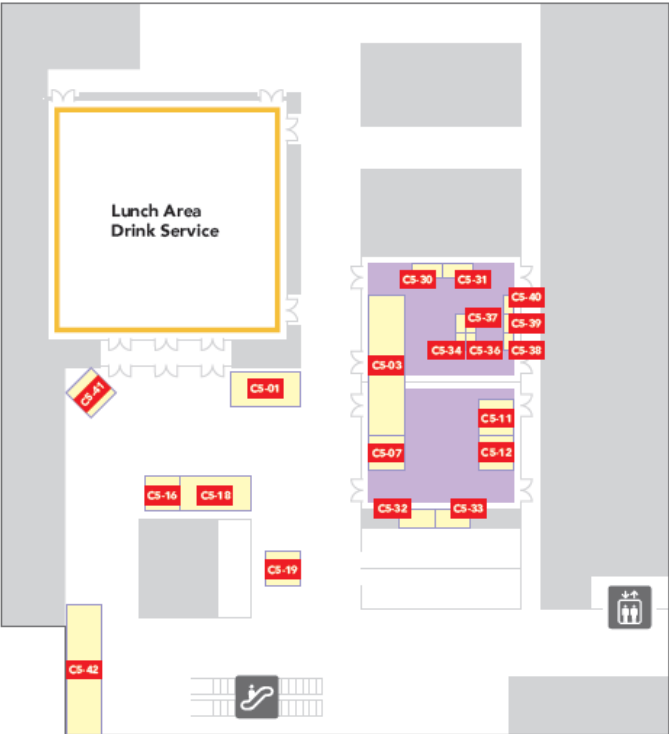
## Fukuoka International Congress Center 2F



- C2-01 KDDI CORPORATION
- C2-02 TOYOTA MOTOR CORPORATION
- C2-03 JTEKT Corporation
- C2-04 Panasonic Corporation /  
Panasonic System Solutions  
Japan Co., Ltd.
- C2-05 Mitsubishi Electric Corporation
- C2-06 Dynamic Map Platform Co., Ltd.
- C2-07 Zenrin Co., Ltd
- C2-08 DENSO CORPORATION
- C2-09 PS Solutions Corporation
- C2-10 Vehicle Information  
and Communication  
System Center
- C2-11 Honda Motor Co., Ltd.
- C2-12 ITS Korea
- C2-13 ITS Taiwan
- C2-14 China ITS Industry Alliance
- C2-15 ITS Asia-Pacific
- C2-16 ITS Singapore
- C2-17 ITS Australia / Cohda Wireless /  
ATC-BRAUMS  
(Aldridge Traffic Controllers)
- C2-18 Oki Electric Industry Co., Ltd.
- C2-19 PTV Group Japan
- C2-20 Infracoms Pte Ltd /  
MobileMark Inc.
- C2-21 Toshiba Infrastructure  
Systems &  
Solutions Corporation
- C2-22 INCREMENT P  
CORPORATION
- C2-23 AISIN SEIKI Co., Ltd.
- C2-24 AICHI STEEL CORPORATION /  
Advanced Smart Mobility Co., Ltd.
- C2-25 Sumitomo Electric Industries, Ltd. /  
Sumitomo Electric System  
Solutions Co., Ltd

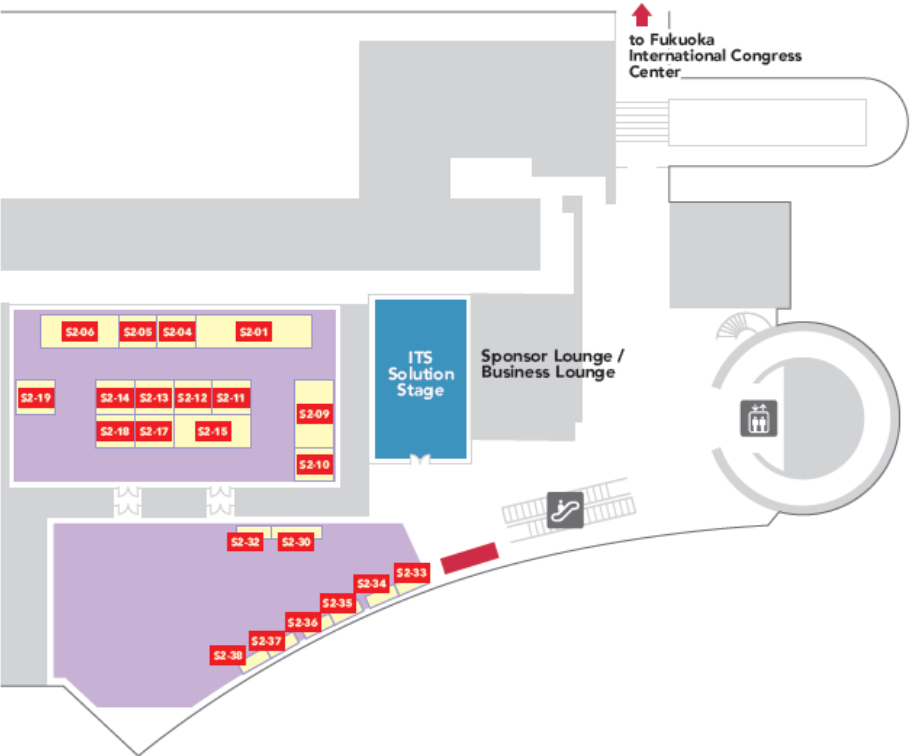
# About the Venue(Exhibition Layout)

## Fukuoka International Congress Center 5F



- CS-01 NTT DATA CORPORATION / NTT DOCOMO, INC.
- CS-03 Association for the promotion and Advancement of the Northern Kyuushu car industry(FUKUOKA)
- CS-07 IT Access Co., Ltd. / ACCESS CO.LTD. / AdaCore
- CS-11 TRIART, Inc.
- CS-12 Ministry of Land , Infrastructure , Transport and Tourism Kyushu Regional Development Bureau
- CS-16 Business Finland
- CS-18 Nichibei Denshi Co.,Ltd.
- CS-19 Aimsun Pty. Ltd. / Urban Development Engineering & Consulting Inc.
- CS-30 West Nippon Expressway Engineering Chugoku Co.,Ltd.
- CS-31 West Nippon Expressway Facilities Co., Ltd.
- CS-32 ITS Info-communications-Forum
- CS-33 The Fifth Generation Mobile Communications Promotion Forum
- CS-34 West Nippon Expressway Engineering Shikoku Company Limited
- CS-36 Fukuoka AI Community
- CS-37 Fukuoka Growth Next (Alter Booth, Inc. / Skydisc, Inc.)
- CS-38 Ministry of Economy, Trade and Industry
- CS-39 Road & Sewerage Bureau, Fukuoka City Government
- CS-40 FUKUOKA Smart EAST
- CS-41 NIMOCA CO., LTD.
- CS-42 Fukuoka Special Souvenirs by Fukuoka Convention & Visitors Bureau

## FUKUOKA SUNPALACE 2F

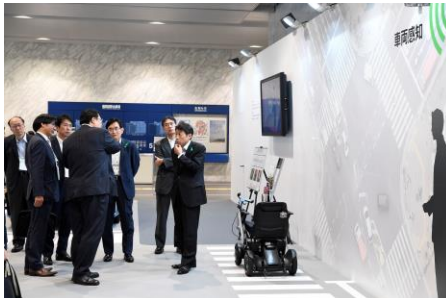


- S2-01 Nishi-Nippon Railroad Co., Ltd.
- S2-04 NIPPON SIGNAL CO.,LTD
- S2-05 JAPAN MAYDAY SERVICE CO., LTD
- S2-06 Weathernews Inc.
- S2-09 Tokai Denshi Inc.
- S2-10 FUKUYAMA CONSULTANTS CO., LTD.
- S2-11 Solace Corporation
- S2-12 Mitsubishi Heavy Industries Machinery Systems, Ltd.
- S2-13 Toyota Tsusho Corporation
- S2-14 Murata Manufacturing Co., Ltd.
- S2-15 FORUM8 Co.,Ltd.
- S2-17 T&S Ltd.
- S2-18 ADVANTEST CORPORATION
- S2-19 Citilabs Inc
- S2-30 NEC
- S2-32 QTnet, Inc.
- S2-33 TomTom
- S2-34 IHI Corporation
- S2-35 Yazaki Energy System Corporation
- S2-36 FUJITSU LIMITED
- S2-37 Clarion Co., Ltd.
- S2-38 DeNA Co., Ltd.

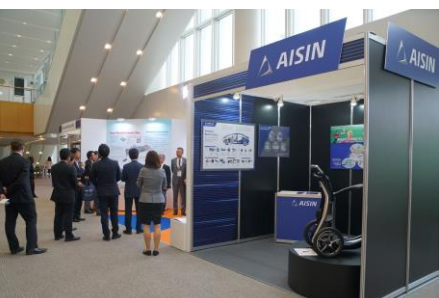
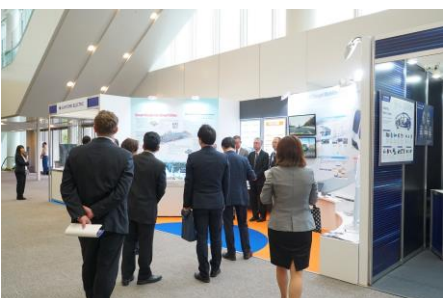
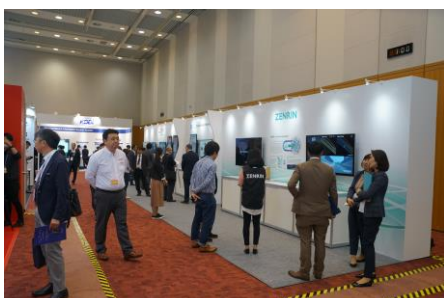
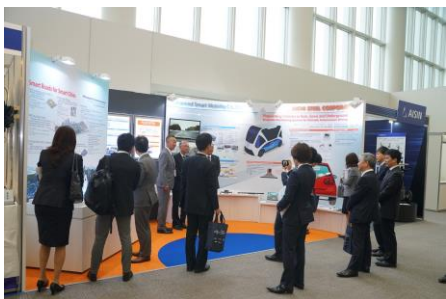
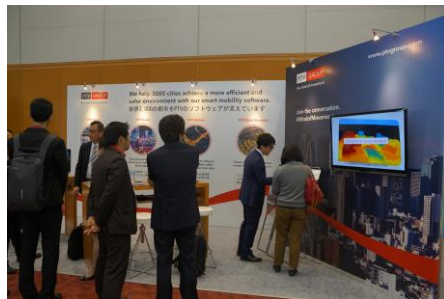


# About the Venue(Exhibition Layout)

## Exhibition 1F



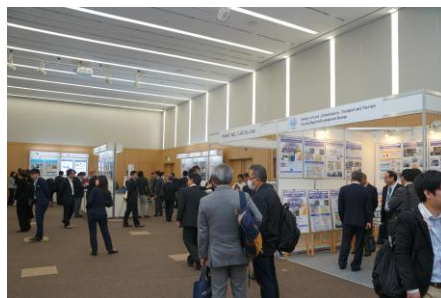
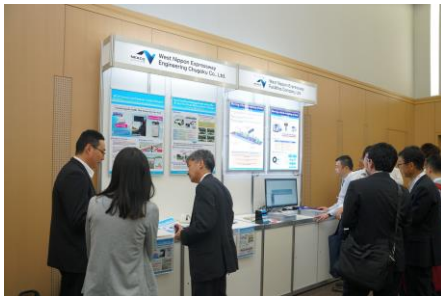
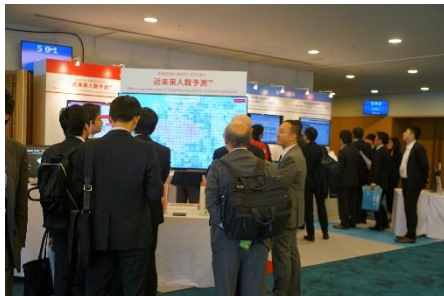
## Exhibition 2F





# About the Venue(Exhibition Layout)

## Exhibition 5F



## Exhibition Sunplace 2F



# ITS Solution Stage



## May 8

12:00-12:40	<b>Widely Used Port Cloud Service.</b> <b>Achieve the business smartification in the container port.</b> Seiko IT Solution Co.,Ltd
13:00-13:40	<b>Approaching the AI/IoT Era with OPTiM Robotics</b> OPTiM Corporation
14:00-14:40	<b>Differentiating our new business with Digital technologies by Sampo Japan Nipponkoa</b> Sampo Japan Nipponkoa Insurance Inc.
15:00-15:40	<b>Legal Liability of Autonomous Driving Car Accidents in Japan</b> TOKYO BAR ASSOCIATION LEGAL SERVICE JOINT CENTER AI DEPARTMENT
16:00-16:40	<b>Introduction of IoT device security solution utilizing block chain</b> IBC Co.,Ltd

## May 9

10:00-10:40	<b>Regional Economic Vitalization with ITS focusing on Logistics Industry</b> Kyushu Economic Research Center (KERC)
11:00-11:40	<b>DeNA's initiatives to realize ITS-based future mobility services</b> DeNA Co., Ltd.
12:00-12:40	<b>Solace: The proven enterprise-class data movement platform for the connected vehicle projects in the world</b> Solace Corporation
13:00-13:40	<b>Mobility Data Exchange</b> <b>Transportation Point of View</b> Cisco Systems G.K.
14:00-14:40	<b>MR is mixed reality. We are new impressions to consumers in a new technology. Guest Mr.matsuzaki from Qtnet</b> T&S Ltd,
15:00-15:40	<b>Government's policy efforts of autonomous vehicles and the required IT infrastructure</b> NTT Communications Corporation
16:00-16:40	<b>Smart Transport in a Smart Nation</b> Intelligent Transportation Society (ITS) Singapore

## May 10

10:00-10:40	<b>Peer-to-peer (P2P) software infrastructure technology supports car-to-car and road-to-vehicle communication</b> TRIART. Inc.
11:00-11:40	

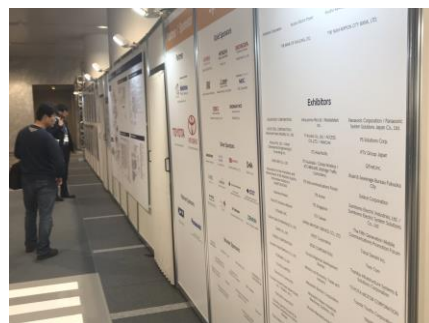




ITS Solution stage



Other





# Lunch Room





# Closing Ceremony



The 16th ITS Asia Pacific Forum  
Fukuoka 2018

Thank You!



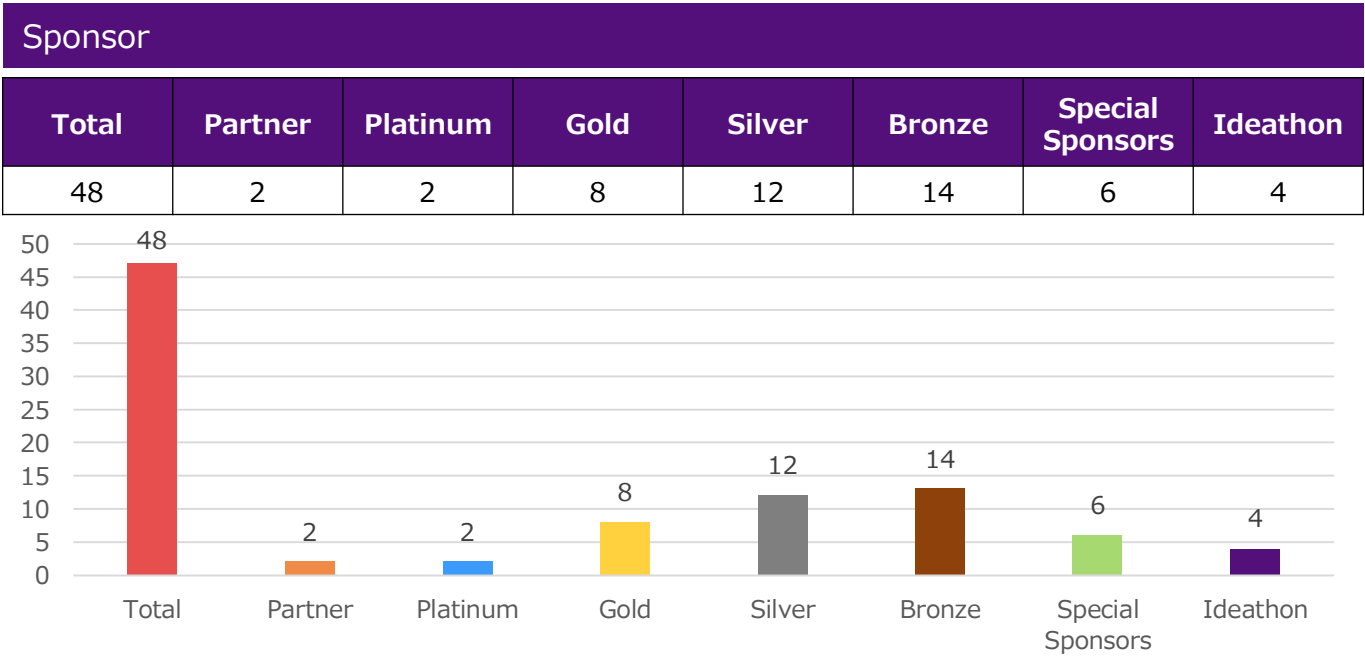
ITS AP Forum  
FUKUOKA

May 8-10, 2018





Registration				
	Total *(1)+(2)+(3)	Full Conference	Exhibition	Ideathon
Registration	3518	1066	2358	94



Ideathon			
No.	Team	Title	Award
1	S.C. Tire	Safety for all condition	Sponsor : Pasona Tech
2	GIPS	Young driver assist devices using GPS technology	
3	Team IMS	Intersection Monitoring System	
4	Team AZ	kikansha to vehicle	Sponsor : Advantest
5	speed fire	lane controller at different vehicles speed	
6	Kreator	Security Scanner (SS)	
7	Distance Feeling ~lovers,family, and car	Automaatic distance control system	
8	Infinity	Blind spot detector	
9	JHS	Facial recognition	
10	ultron	To apply the video data of drive recorder to deep learning	Best Award
11	sakura	real time pedestrian detection	Sponsor : TOYOTA
12	TOI-FAZ	The future without accidents	
13	KLM	Facial Conscious Evaluation (FaCE)	Sponsor : Zenrin





**ITS AP Forum  
FUKUOKA**

May 8-10, 2018