June 22, 2016
CYNN HOTEL, Chengdu, China

Shigetoshi TAMOTO
Vice President, ITS Japan

Update on Japanese ITS activities
ITS Japan: Organization

1994 Founded as VERTIS
2005 Registered as Legal Entity
(NPO: Nonprofit Organization)

Honorary Chairman
Dr. Shoichiro Toyoda

Chairman
Mr. Shinichi Sasaki

Vice Chairmen
Professor Masao Sakauchi
Mr. Kazumasa Fujie

General Assembly
(regular members)

Board of Directors
(Chairman, Vice-Chairman, Directors, Auditor)

Secretary Committee

Standing Permanent Committee
(Executive Directors, Fulltime Directors)

Fulltime Director Committee

General Affairs Committee
Planning Committee
International Committee

Project Oriented Committee or Group

8 Activities (As June of 2016)

ITS Committee for Shaping New Mobility & Energy Services
Leading members of ITS Japan

Permanent Standing Committee

Leading members of ITS Japan

Permanent Standing Committee

No. of Members: 239 (As of 2016.5.9)
Honorary Members: 3
Standard Members: 174 (Private Sector: 153, Organization: 21),
Special Members: 16, Supporting Members: 52
Roles and Positioning of ITS Japan

Roles of ITS Japan

- Promoting ITS R&D and deployment
- ITS World Congress Asia-Pacific area contact
- Asia-Pacific ITS Forum Secretariat
- Liaison among ITS-related public and private organizations and academia
- Supporting ITS-related standardization activities
ITS R&D, Deployment and Challenges in Japan

First Stage
(Development and Field Evaluation)
- Car Navigation
- ETC
- Driving Safety
- Traffic Management
- Road Management
- Public Transportation
- Commercial Vehicle Operation
- Pedestrian Support
- Emergency Vehicle Operation

Second Stage
(Accelerated Deployment)
- Road Traffic Safety
- Smoother Traffic Flow
- Convenience
- Stimulation of Economy
- Platform / Standardization

New Challenges
(ITS for Sustainability)

Comprehensive ITS Plan
ITS Promotion Guidelines
ITS Future Vision (ITS Japan)

Sustainable Mobility

1995
Yokohama WC

2004
Nagoya WC

2013
Tokyo WC

ITS Future Vision (ITS Japan)
Market Penetration of On-Board Units

Years required for 10 Million units to penetration in market

- Car Navigation: 15 years
- ETC: 7 years
- VICS: 5 years

(As of Mar. 2015)

Source: MLIT, JEITA, ITS-TEA (Prepared by ITS Japan)
National ITS project (2008-2012)

Roadmap

1. Road traffic safety
   - Driving Safety Support
     - I to V services
   - Advanced Safety Vehicles

2. Sustainable urban transportation
   - Probe data application
   - Enhanced transit systems
   - Personal mobility vehicles

3. Sustainable freight systems
   - Shared freight systems
   - Product tracking system

4. Enabling technologies
   - Evaluation of CO₂ emission
     - Automated platoon

Projects

- Large scale field operation tests
- Passable route
- Quantitative evaluation of CO₂ emission reduction
- Trilateral report
- Connected vehicle systems
- Integrated information platform for daily service and disaster
- Automated driving systems

Focus area to continue

- 80 km/h
- 4m separation
Encouraging results

Rear end collisions were reduced by 60%

The accidents at Sangubashi Curve

“Congestion ahead. Danger of rear-ending.”

“High accident curve ahead. Watch your speed”

Source: Ministry of Land, Infrastructure, Transport and Tourism
Dynamic Route Guidance
with Real-time Information

Highway Network
Surrounding Tokyo

Dynamic Route Guidance
- Real-time information & analysis
- Vehicle - Infrastructure communication

Source: Ministry of Land Infrastructure, Transport, and Tourism
Cooperative ACC for deployment

ACC: Adaptive Cruise Control

Heavy goods vehicles
• Cooperative ACC is expected to be the first application of technologies developed and proven for automated platoon.
• Vehicles automatically maintain distance and minimize speed fluctuation using sensors and vehicle to vehicle communication.
• Fuel efficiency and safety will be enhanced and drivers’ work load will be reduced.
• Congestion will also be significantly mitigated.

Passenger cars
Services in operation in Tokyo

- Safety Assistance
- Traffic Information
- Dynamic Route Guidance
Traffic Management

For safety and smooth flow, traffic signals are systematically controlled by measuring and predicting traffic flow.
Deployment of UTMS

UTMS: Universal Traffic Management Systems

ITCS: Integrated Traffic Control Systems (47)
AMIS: Advanced Mobile Information Systems (47)
HELP: Help system for Emergency Life saving and Public safety (47)
PTPS: Public Transportation Priority Systems (40)
MOCS: Mobile Operation Control Systems (9)
EPMS: Environment Protection Management Systems (3)
PICS: Pedestrian Information and Communication Systems (36)
DSSS: Driving Safety Support Systems (6)

Source: UTMS Society of Japan
Road Traffic Fatality and Measures

Number of people killed in traffic accidents

Statistics: National Police Agency, Japan
ITS in Strategies of the Government

“Japan Revitalization Strategy” - JAPAN is BACK – (2013.6.14)

Strategic Market Creation Plan

- Development of next-generation safe, convenient and economical infrastructure
  - Developing driving safety support and self-driving systems and creating environment
  - Creating information service environment by big data relating to vehicles

Declaration to be the World’s Most Advanced IT Nation (2013.6.14)

- Becoming an IT Utilization Society at the World’s Highest Levels
  (Public-Private ITS Initiative/Roadmaps, 2014.6.3)
  - Strategies on Automated Driving Systems and the Utilization of Road Transport Data
    to Build a Society with the World’s Safest and Smoothest Road Traffic -

Comprehensive Strategy on Science, Technology and Innovation

- Bridge of Innovation toward Creating the Future – (2013.6.7)

Development of Next-Generation Infrastructure as a Top-runner in the World

SIP-adus:
- Cross-ministerial Strategic Innovation Promotion Program (SIP)
- Innovation of Automated Driving for Universal Services (adus) (2014.4.17)
Societal challenges toward 2030

- Declining Birthrate and Aging Population
- Conversion to Renewable Energy and Global Warming Prevention
- Stagnant Economy
- Urgent Need to Improve Pedestrian Safety and Disaster Management
Aging Population in Japan

Statistics: Cabinet Office, Government of Japan

Population (x 10,000)

Ratio of 65 and older
Fatal Crash caused by Violation

- Careless Driving
- Insufficient Safety Check
- Priority Violation
- Stop Sign
- Ignorance
- Inappropriate Operations
- Wrong Lane
- Looking Aside
- Over Speeding
- Pedestrian Interference

Source: National Police Agency, Japan
Advanced Driving Assistance

**Built-in Assist (Built-in)**
- Passive Safety
  - Seatbelt
  - Airbag
  - Body Structure
- Active Safety
  - Pre-crush Braking
  - Speed and Distance Control
  - Lane Keeping Assist

**Cooperative Assist (V2I, V2V)**
- Traffic Information, Warning
  - Obstacles detection
- Merging Assistance
- Dynamic Route Guidance

**Available in the market**

**Advanced Driving Assist**
- Lateral and Longitudinal Control
- Platoon Control

**Fully Automated Driving**

**Automated driving**
Cross-Ministerial Strategic Innovation Promotion Program (SIP)  
Innovation of Automated Driving for Universal Services  

“SIP- adus”  

- Mobility Bringing Everyone a Smile -  

Inclusive society, where diverse people in diverse communities actively participate in generating values, will enhance both wellness of individuals and economic development. Automated driving technologies integrated with social innovations should provide everyone with mobility to fully exercise his or her capacity, enabling sustainable development of the society.
SIP Automated Driving System

Social Benefits
- Drastic reduction of traffic fatality
- Enhanced mobility for the aged
- Reduction of traffic congestion
- Reduction of driving workload
- Field validation
- Social acceptance

Technology innovation
- Highly advanced driving assistance
- Innovative transportation systems with information and communication technologies
- Integrated approach (hardware, software, human factors)
- Cross disciplinary collaboration
- Regulatory reform
- Public-private collaboration

Automated Driving System (built-in and connected)

Business incubation
- Auto and electronic industries
- Creation of new industrial sectors
- International harmonization

Technologies for Automated Driving

On-board Technologies

- Sensing
- Decision
- Operation

GNSS
Camera
Lider
Rader
Built-in sensors

Precise digital map
V to X

Human Machine Interface

Platform
Security, Simulation, Shared database, etc.

HMI

Coordination

人との協調
謝々

http://www.its-jp.org/