**Session 1: Global ITS update** 

# ITS deployment for

# connected vehicles and people



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CACS (1973~1979)



#### CACS: The <u>Comprehensive Automobile Traffic Control System</u>





# ITS action plan in Japan (1996)





1. Car Navigation



4. Traffic Management



7. Commercial Vehicle Operation





5. Road Management



8. Pedestrian Support



3. Driving Safety



6. Public Transportation



9. Emergency Vehicle Operation



## **Market Penetration of On-board Units**





1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 Source: Ministry of Land, Infrastructure, Transport and Tourism









## **Framework of VICS Services**





Common digital map is shared by both public and private sectors



# **Vehicle to Infrastructure Cooperation**





#### **Information on Dangers Ahead**



#### Live Image Feed



#### **Merging Assistance**



# **ITS-Safety 2010 Demonstration**









NISSAN









MAZDA



**SUBARU** 



DAIHATSU



**SUZUKI** 



**MITSUBISHI** 









**NISSAN DIESEL** 



**FUSO** 



YAMAHA



Mercedes-Benz



Volkswagen



Kawasaki





HONDA





#### **Vehicle to Infrastructure Cooperation**

#### Safety Assistance

#### **Traffic Information**

Dynamic Route Guidance















# Theme: Open ITS to the Next

Date: October 14th – 18th, 2013

# Venue: Tokyo International Forum (Opening Ceremony)Tokyo Big Sight(Session & Exhibition )





# Second phase of connected vehicles









**ITS Spot & mobile network** 





## Automated and connected vehicle technologies

- Built-in features of driver assistance will be integrated with connected vehicle technologies for safety and efficiency.
- Evolutional process will continue toward higher level of automated driving by introduction of commercial products.
- Demonstration, exhibition and discussions by global auto manufacturers are organized at Tokyo World Congress.

## **ITS Big Data, business opportunities and public services**

- Huge volume of probe data are collected through navigation systems and mobile communication devices.
- With such 'Big Data', new services for personal mobility and business operations as well as public applications for policy performance measures and emergency operations are rapidly emerging.
- Leaders from both private and public sectors are invited for vigorous discussions on its potential and implications. Demonstrations and site visits are also arranged.



# **Technologies Ready for deployment**



## **Automated Platoon**



- Trailing vehicles automatically follow the leading vehicle maintaining specified distance.
- Fuel efficiency and safety will be enhanced and drivers' work load will be reduced.

### **Cooperative ACC**



- Vehicles automatically maintain distance and minimize speed fluctuation using sensors and V to V communication.
- Congestion will be significantly mitigated and fuel efficiency and safety will be enhanced.

ACC: Adaptive Cruise Control



# Intelligent Traffic Management System



#### **Conventional Traffic Information System**



**Fixed sensor data** 

**Central Tokyo** 





**Traffic Control Center** 







**Central Tokyo** 



# Probe data with road closure information



ITS Japan

# Technologies to evaluate CO<sub>2</sub> reduction





## **ITS World Congress Tokyo**





http://www.itsworldcongress.jp