



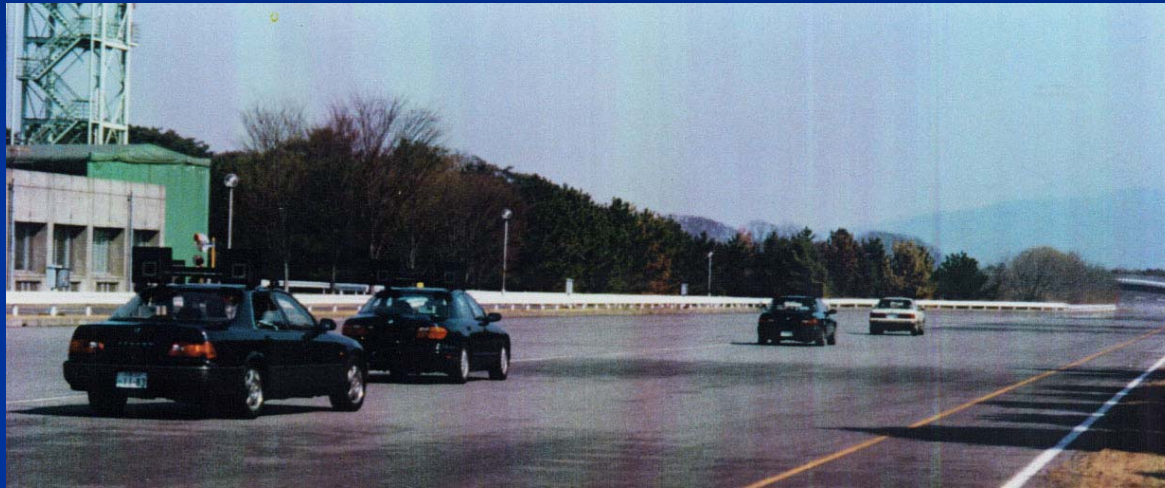
VSC R & D in METI Group

Japan Automobile Research Institute

ITS Center

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IVC with Infrared



- Protocol: slotted ALOHA
- Communications & gap measurement
- Driver Assistance

IVC with 5.8 GHz DSRC



- Protocol: CSMA
- Cooperative driving with 5 automated vehicles

Studies on Standardization

- Studies at JARI/ITS-Center (Japan Automobile Research Institute, formerly JSK)
 - Since 2002
 - For mainly ISO/TC204
- Potential Items of IVC Standardization
 - Message, data
 - Applications
 - Communication Protocol (Upper and middle layers)

Current Activities on IVC Standardization in JARI ITS Center

- Concept Reference Model of IVC
 - Categorize IVC applications ,requirements
 - Select proper communication method
- Experiments on Com System with 5.8 GHz
 - Quality evaluation under urban traffic condition
(Joint experiment with ASV and IVC groups)
 - Investigate multi-hop function for safe application
- International Information Exchange

Multi-hop Experiment in 2005

- Small hopping time (about 2 msec)
 - Wider communication area with low PER
 - A simple multi-hop function for safety
- ⇒ Standard evaluation method for multi-hop function



Conclusions

- Long History on VSC R&D
- Both independent and cooperative R&D in Government Agencies on VSC
- Many Issues
 - Media
 - Propagation
 - Deployment scenario