

3rd. Asia Automobile Institute Summit

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Introduction of JARI

Mitsuo Yonezawa

General Manager

Global Networking

Japan Automobile Research Institute

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JARI's History and Location

Apr. 1969: Japan Automobile Research Institute (JARI) established

Oct. 2005: Shirosato Test Center completed and entered service



Kanto Region, Japan



Shirosato Test Center



Tsukuba Research Facility

Tsukuba Research Facility

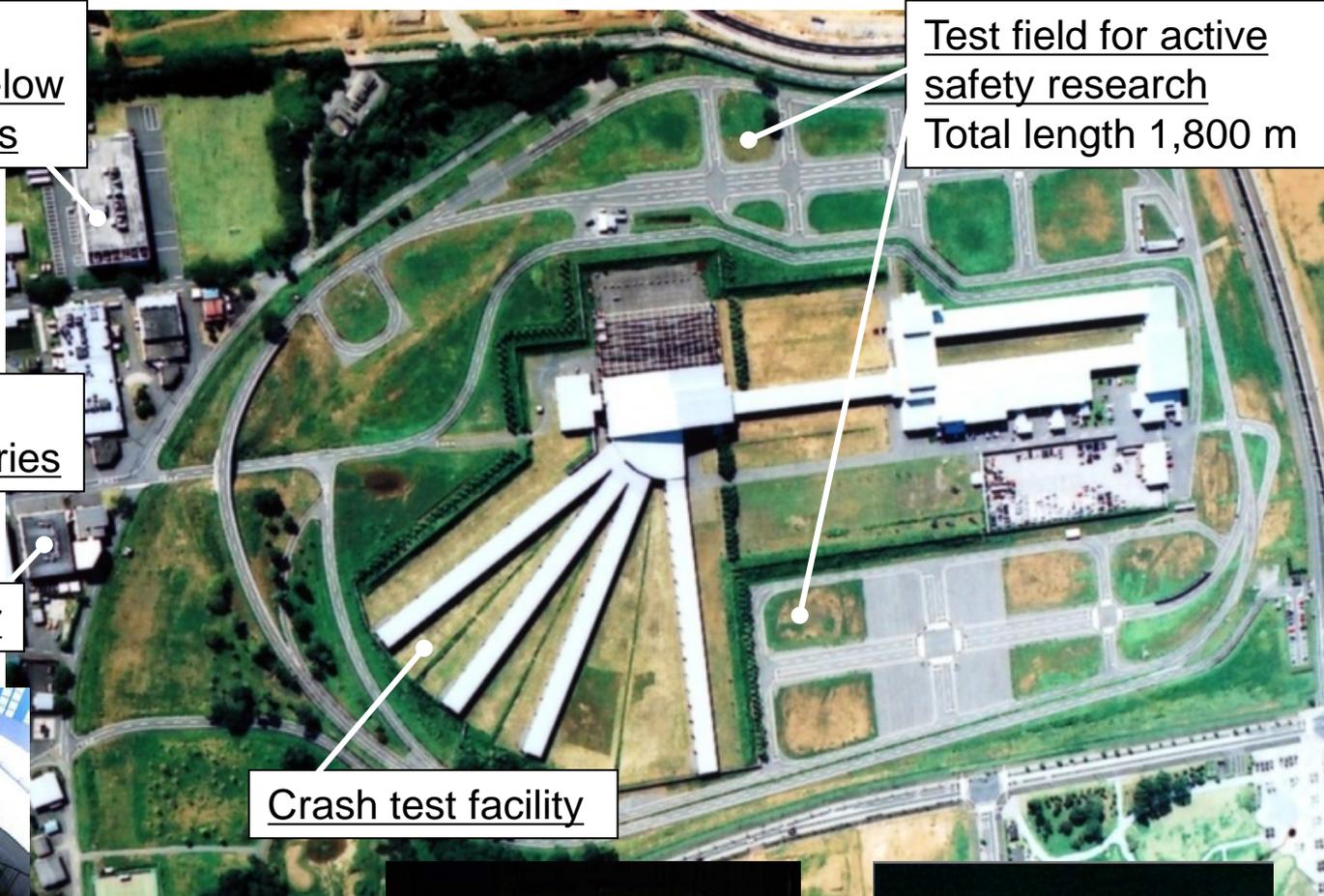
Laboratory for heavy-duty ultra-low emission vehicles

Laboratories for EV, FC and Batteries

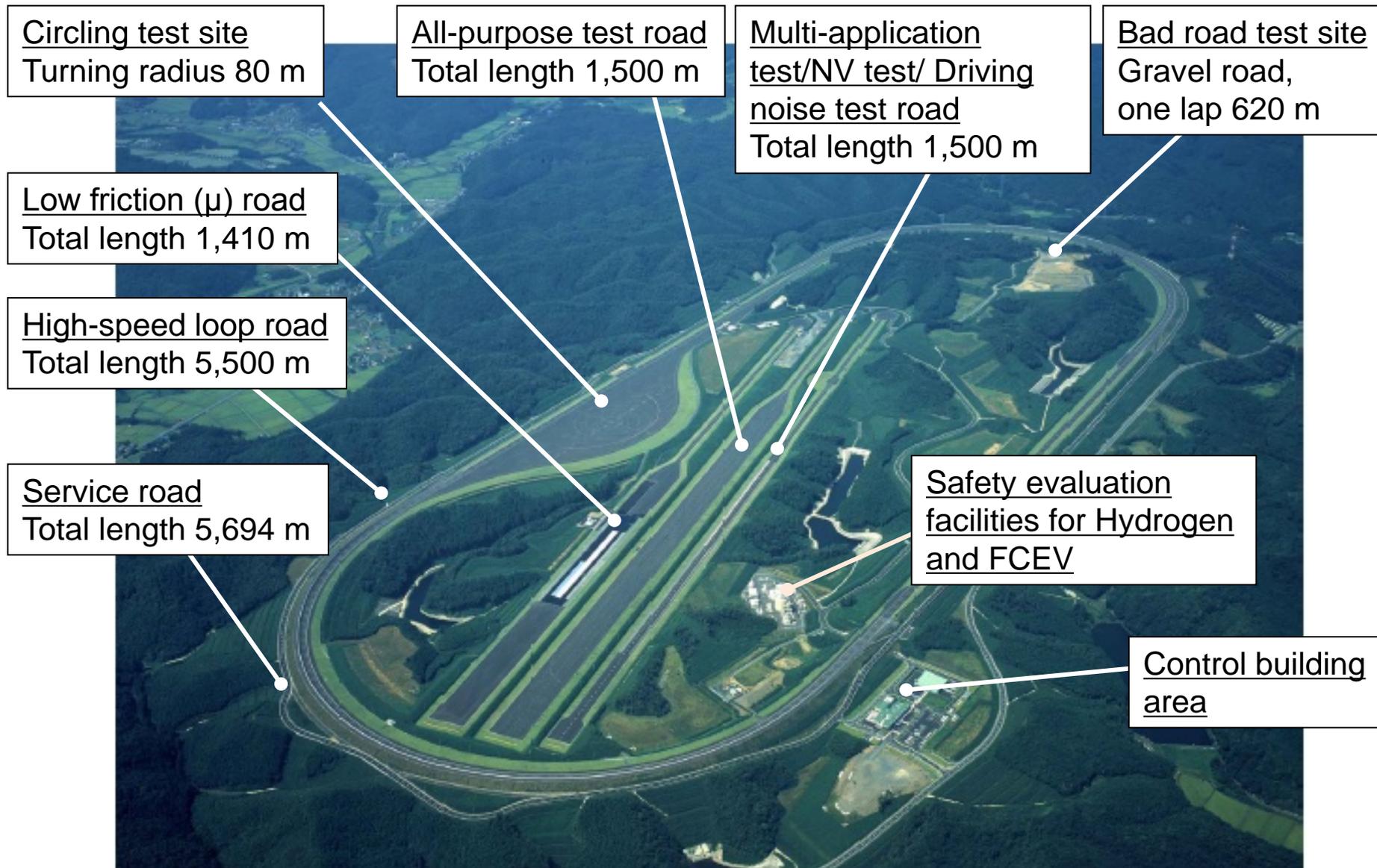
Driving simulator

Crash test facility

Test field for active safety research
Total length 1,800 m



Shirosato Test Center



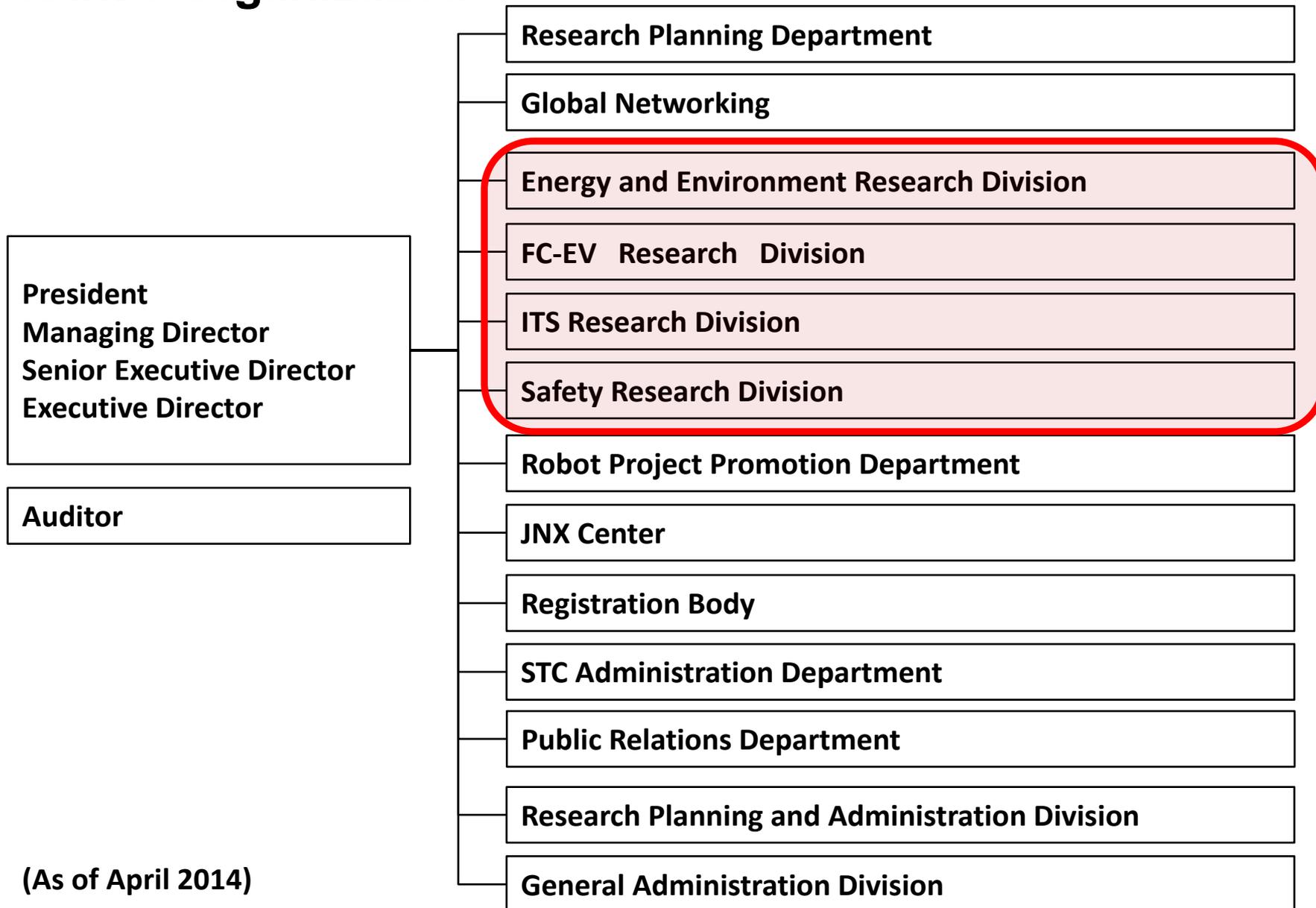
Total area: 302 ha

JARI's Outline

- ✓ **JARI vision in 2020**
JARI will challenge advanced research, and contribute to motorized society in the world.
- ✓ **Number of personnel: 357** (As of April 1, 2014)
- 149 Researchers, including 48 PhD
- ✓ **Business scale in 2013**
 - Income: **USD 68 million** (JPY 6.8 billion, USD in JPY=100)
 - Number of test & research projects: **427 in total**
 - Public projects: 57,
 - JAMA* projects + Private projects: 333
 - Independent research projects: 37

*Japan Automobile Manufacturers Association
- ✓ **Publications and presentations in 2013**
 - Domestic: **104** and International: **21**

JARI's Organization



(As of April 2014)

JARI's Role and Responsibility

Contribution to policy making

Government

METI

- ✓Industrial promotion policy
- ✓Energy saving policy
- ✓Standardization policy

MLIT

- ✓Road traffic policy
- ✓Technical regulations
- ✓International harmonization

MOE

- ✓Environmental policy
- ✓Regulations

Police Agency

- ✓Training of investigation of traffic accidents

Role to connect government and industry

JARI

Academy

Universities

Research institutes

Assessment tests of new products/ technologies for common issues in the industry

Industry

Automobile

Electricity/
Electric power

Internet & Tele-communications

JARI has a unique neutral position between the government and industry.

<Note>

METI: Ministry of Economy, Trade and Industry

MLIT: Ministry of Land, Infrastructure, Transport and Tourism

MOE: Ministry of the Environment

JARI's Activities with Asian Countries



Asia Automobile Institute Summit



Round table



Seminar in Indonesia

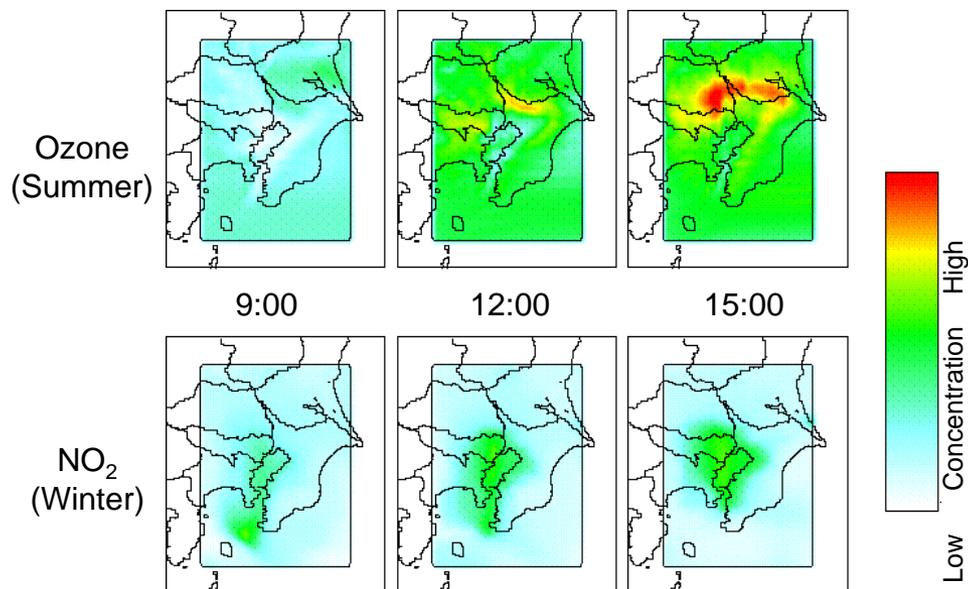


JICA Group Training

Research and Testing Activities - 1/5

Environment and Energy

- New fuels
- Hazardous air pollutants
- Health effects
- Air quality / Environmental simulations
- Advanced power train systems
- Ultra-fine particles
- Road traffic noise



Exhaust gas emission test

Simulated distributions of regional ozone (O₃) and nitrogen dioxide (NO₂)

Research and Testing Activities - 2/5

Hydrogen & Fuel Cells / Fuel Cell Vehicles, Hybrid Electric Vehicles, Battery Electric Vehicles

- Performance & safety evaluation
- Standardization
- Highly efficient batteries



**Hydrogen and Fuel Cell Vehicle Safety
Evaluation Test Facility (Hy-SEF)**



JARI standard cell

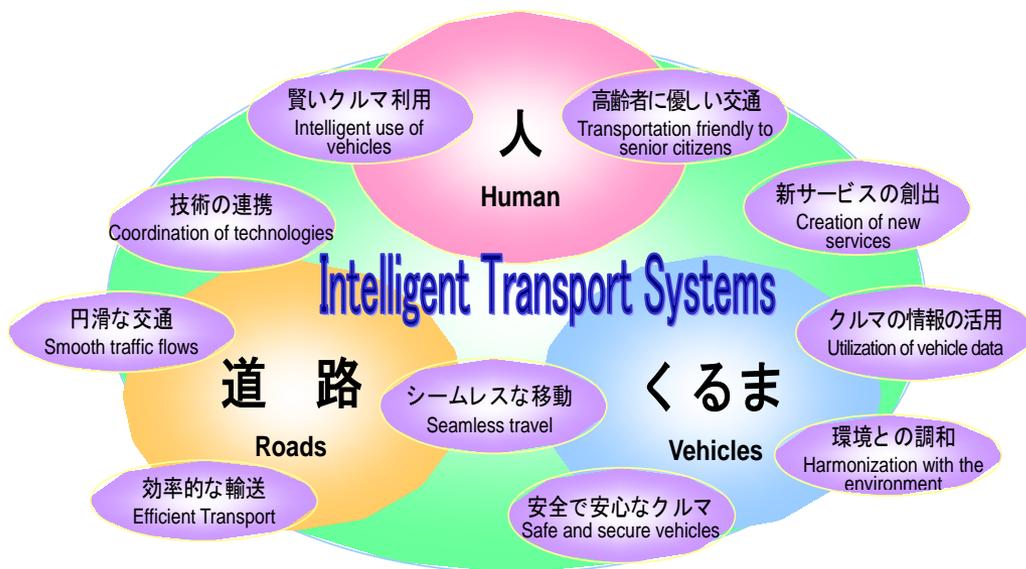


Vehicle fire testing

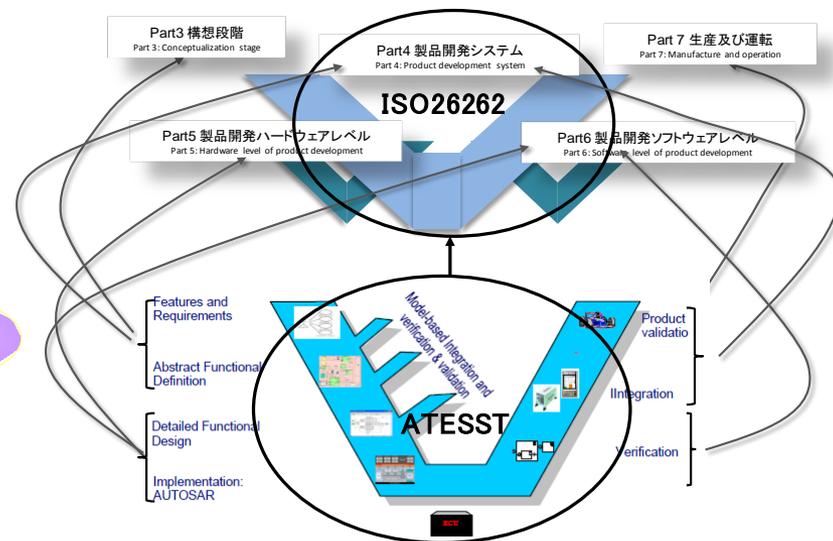
Research and Testing Activities - 3/5

ITS: Intelligent Transport Systems

- Energy ITS
- Smart vehicle network
- Probe-car information system
- Base strengthening of electronic technology
- Standardization
- ISO26262



Areas of ITS research at JARI

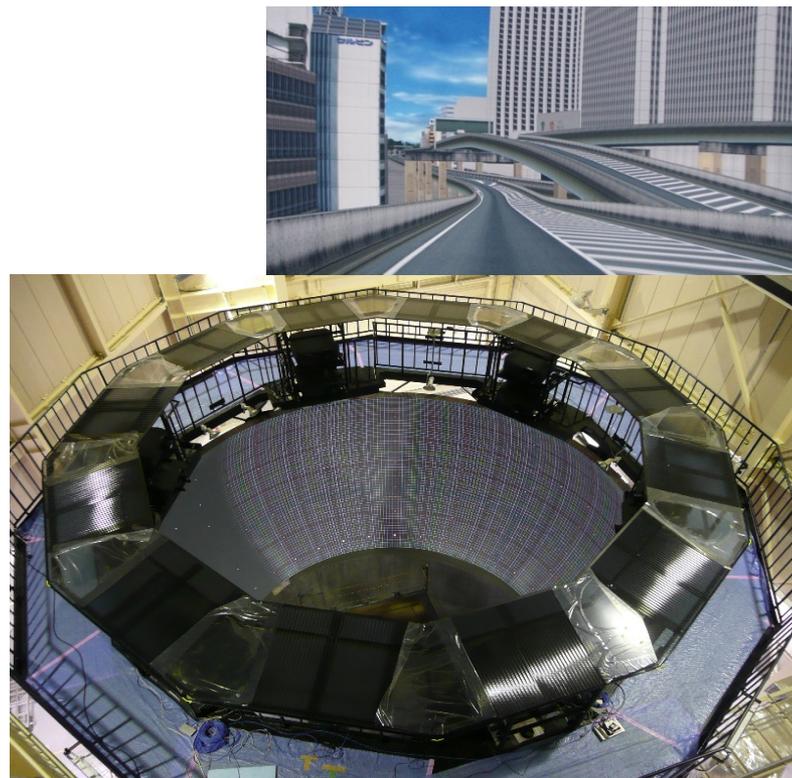
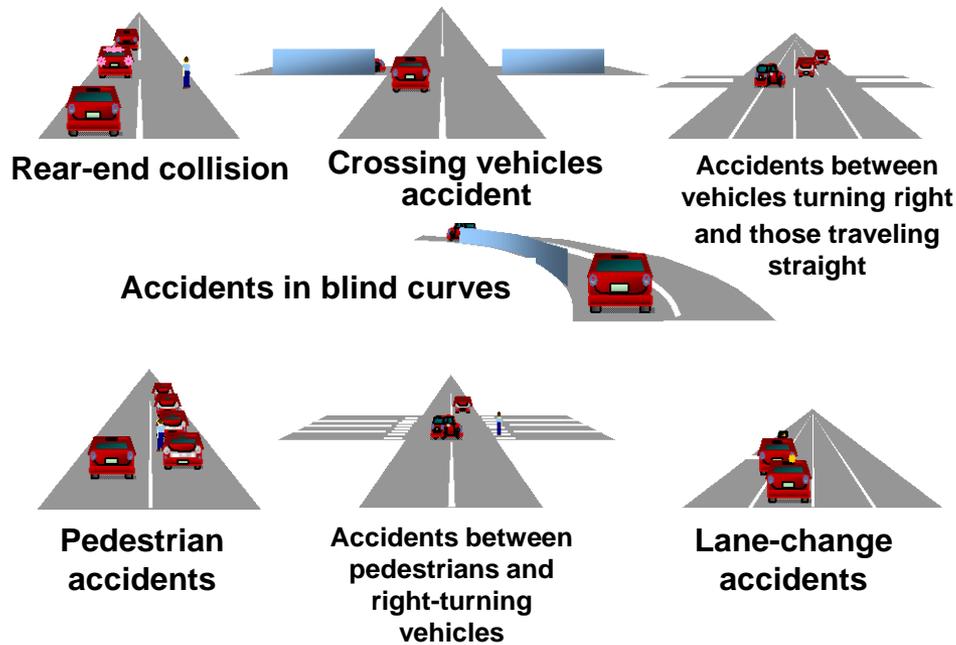


Development scenario for ISO 26262-compliant electronic systems

Research and Testing Activities - 4/5

Active safety

- Driver support system
- Elderly drivers
- Vehicle dynamics
- Human machine interface
- Lighting / Visibility



Driving simulator

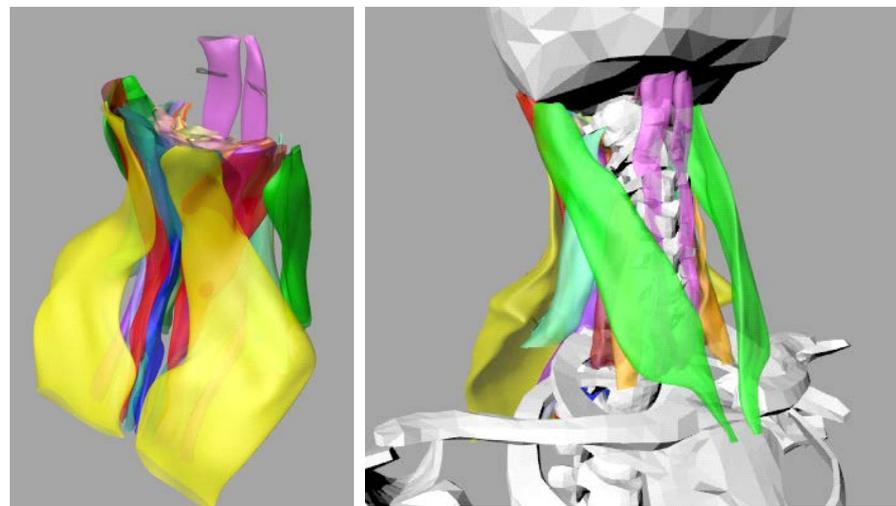
Research and Testing Activities - 5/5

Crash safety

- Occupant protection
- Impact biomechanics
- Pedestrian protection
- Traffic accident analysis



Collision Test
Upper: Frontal crash,
Lower: Side impact crash



Cervical muscle model for human neck

Activities start from 2014

AICE: The research association of Automobile Internal Combustion Engines

- ✓ Established on 1. Apr. 2014

- ✓ Members:

8 Japanese car companies such as Suzuki, Daihatsu, Toyota, Nissan, Subaru, Honda, Mazda and Mitsubishi

2 Japanese institutes such as **JARI** and AIST (National Institute of Advanced Industrial Science and Technology)

SIP for ADS: Automated Driving Systems

- ✓ A new cross-ministry SIP: Strategic Innovation Promotion program in JFY2014 was **launched by the Japanese government.**

- ✓ **"Automated driving system for dodging accidents and minimizing traffic congestion"** was selected.

Summary

JARI has been performing **neutral and public-benefit activities for 45 years.**

- ✓ **3 bases:** an office in Tokyo, a research facility in Tsukuba and a test center in Shirosato.
- ✓ **149 researchers** among the 357 staff members.
48 members have doctorate degrees, as of Apr. 2014.
- ✓ **68 million US dollar revenue** with 427 tests and research programs in 2013.
- ✓ **4 key research divisions:** "Energy and Environment", "FC-EV", "Safety" and "ITS".

Thank you for your attention.

**If you have any comments and questions,
please feel free to contact Mr. Mitsuo Yonezawa.**

mailto: myone@jari.or.jp

Tel: +81-29-856-0767