1st. Asia Automobile Institute Summit 26-27 November 2012, Tokyo





1. Outline



- JARI vision in 2020
 JARI will challenge advanced research, and contribute to motorized society in the world.
- 2) Number of personnel: 351 (As of April 1, 2012)
- 3) Business scale in 2011
 - Income: 77 million US dollars (6.1billion JPY)
 - Number of test & research projects: 377 in total

Public projects: 58 JAMA projects: 69

Private projects: 225 Independent research projects: 25

4) Publications and presentations

-Domestic: 129

International: 24

2. Organization



(As of April.2012)	
	Energy and Environment Research Division
Chairman of Councilors	FC-EV Research Division
Chairman of the Board	Safety Research Division
President	ITS Research Division
Managing Director Senior Executive Director	Robot Implementation Division
	Research Planning and Administration Division
	General Administration Division
Executive Director Auditor	Public Relations Department
	JNX Center
	Registration Body
	STC Administration Department
	Advanced Research Department
	Global Networking
	Strategic Planning and Management Department

3. History of JARI



- Apr. 1961: Former Automobile High-Speed Proving Ground Foundation founded
- Oct. 1964: Former high-speed oval testing track completed and entered service
- Apr. 1969: Original institute reorganized into the Japan Automobile Research Institute (JARI)
- Aug. 1976: Japan Electric Vehicle Association (JEVA) founded
- Sep. 1979: Association of Electronic Technology for Automotive Traffic and Driving (JSK) founded
- Jul. 2003: Three organizations integrated to form the new JARI

JEVA: Japan Electric Vehicle Association

JSK: Association of Electronic Technology for Automotive Traffic and Driving

JARI: Japan Automobile Research Institute

 Oct. 2005: Shirosato Test Center completed and entered service (Location: Shirosato town, Ibaraki Prefecture)

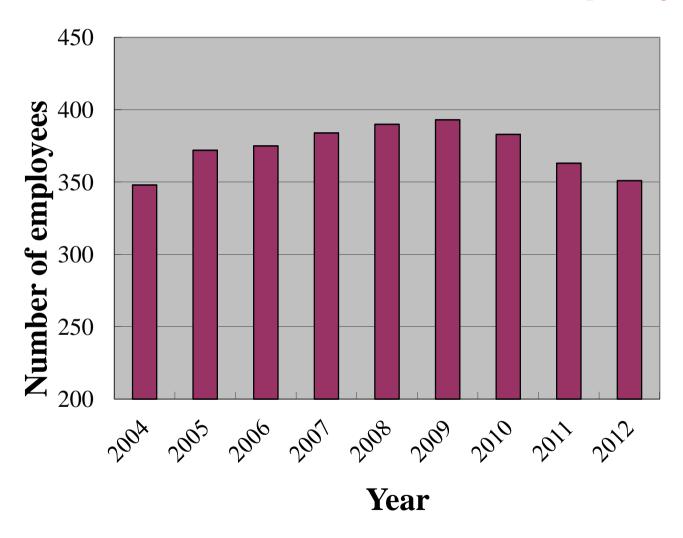
Completion of automobile high-speed proving ground in 1961



The high-speed proving ground allowed Japanese car manufacturers to begin experiments into speed, noise, stability, etc., which led to the beginning of motorization in Japan.

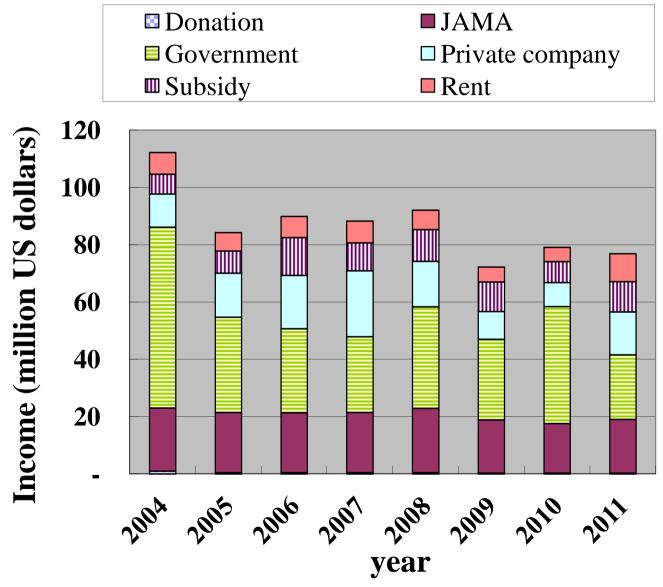


4. Trends in the number of employees



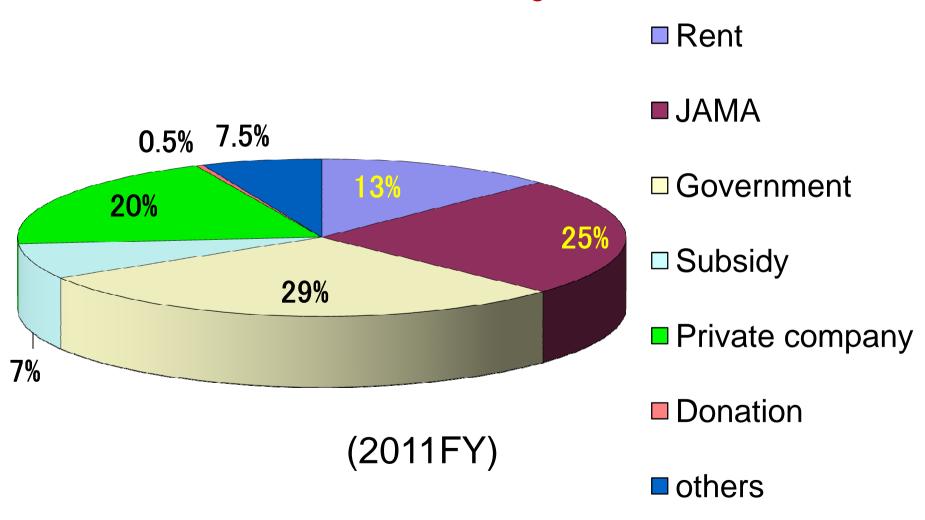
5. Changes in Income







6. Percentage of Each Customer for Research Activity Income



7. Role of JARI



Contribution to policy making

Government

METI

- Industrial promotion policy
- Energy saving policy
- Standardization policy, etc

MLIT

- Road traffic policy
- Technical regulations
- International harmonization

Environment Agency

- Environmental policy
- Regulations

Police Agency

Training of investigation of traffic accidents

- Promotion of international standardization activities
- Assessment tests
 of new products and
 new technologies for
 common issues in
 the industry

Industry

Automobile

Electricity
/ Electric power

Communication

JARI

Role to connect government and industry

- Release of the results
- Collaboration research

Academy

JSAE / JSME, etc

Universities

Research institutes

8. Contribution to government



Contribution to policy making

Research results with high reliability concerning vehicle technology have been provided by JARI as a neutral organization.

- 1) Influence of diesel emissions on carcinogenicity
- 2) Environmental prediction by atmospheric simulation
- 3) Fuel consumption evaluation methods of heavy-duty diesel trucks and buses
- 4) Fuel consumption evaluation methods of four-wheel drive vehicles and HEVs
- 5) Standardization of fuel cells
- 6) Evaluation methods of automotive safety
- 7) Safety evaluation methods of life support robots

CARL STORMER RESERVE

9. Contribution to automotive industry

Common problem solutions for the automotive industry

Technical standards and guidelines concerning efficiency
improvement, standardization, and test methods are decided.

- 1) Promotion of Global Technical Regulations (GTR) of examination methods for emission, noise, safety, etc.
- 2) Impact biomechanics research
- 3) Research of drive recorders
- 4) Fuel quality investigation
- 5) Development and proposal of examination methods for new technology and tightening regulations

10. Cooperation with countries



in Asia

- Technological exchanges
- Holding seminars
- Round table discussions
- Training business



Seminar in Indonesia



Round table



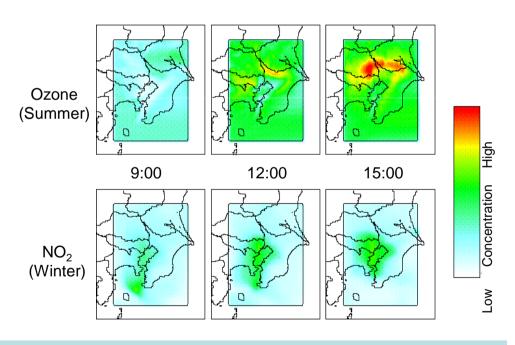
JICA Group Training

11. Research and testing activities

① Environment / Energy

- New fuel
- Hazardous air pollutants
- Health effects

- Advanced power train systems
- Ultra-fine particles
- Road traffic noise
- Air quality / Environmental simulations





Exhaust gas emission test

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

2 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

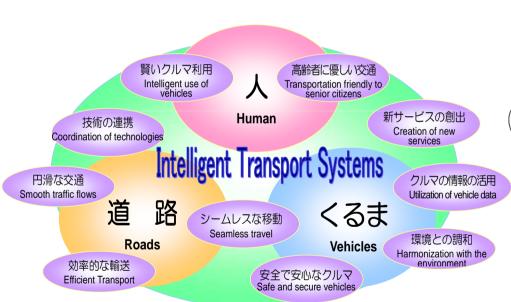


Vehicle fire testing

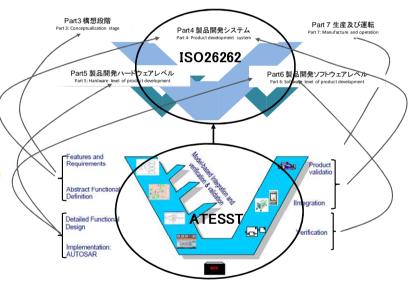


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- Energy ITS
- Smart vehicle network
- Probe-car information system
- Base strengthening of electronic technology



Areas of ITS research at JARI



Standardization

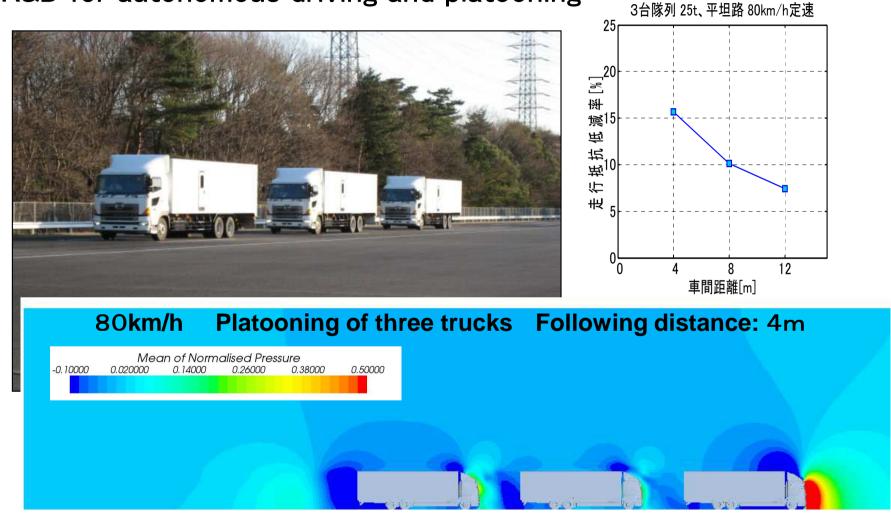
- ISO26262

Development scenario for ISO 26262-compliant electronic systems



Development of energy-saving ITS technologies

R&D for autonomous driving and platooning

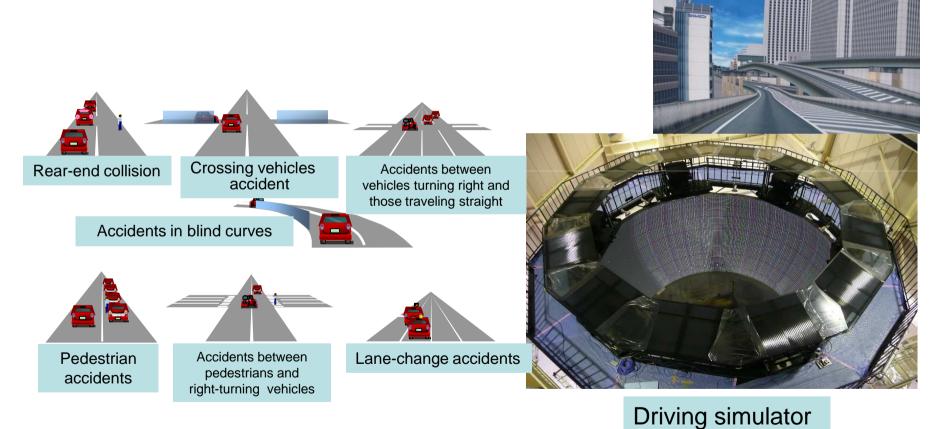




Active safety

- Driver support system
- Elderly drivers
- Vehicle dynamics

- Human machine interface
- Lighting / Visibility



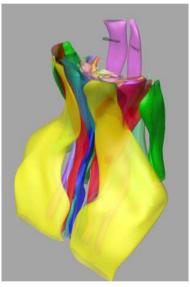
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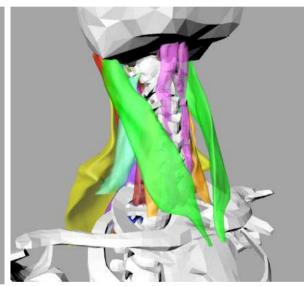
5 Crash safety

- Pedestrian protection
- Traffic accident analysis

- Occupant protection
- Impact biomechanics







Collision Test

(Upper: Frontal crash, Lower: Side impact crash)

Cervical muscle model for human neck

6 Safety evaluation of life support robots



The overall approach of robot safety verification

- Execution of tests & research
- Installation of test organization for verification
- Installation of certifying organization
- Promotion of standardization and investigation



Project began in 2009

A center for robot safety examination will be constructed in JARI in the future.



Thank you for your attention!!

If you have any comments and questions,

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Tel: +81-29-856-1112

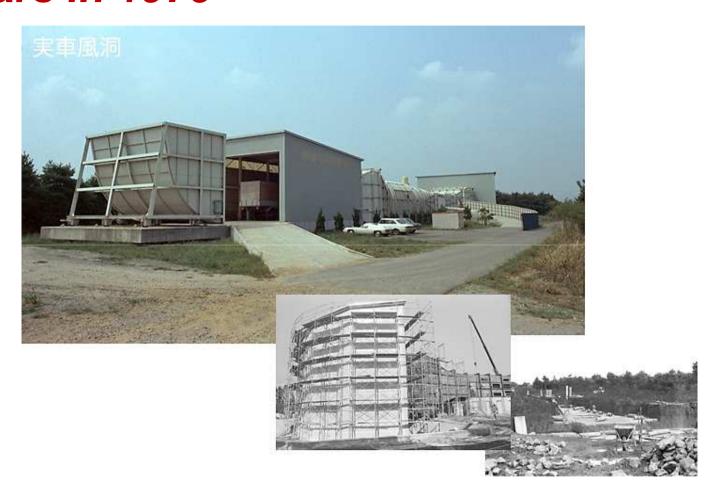
ESV collision experiment for the public in 1973



- Reports on the result at an international conference in 1976.
- JARI came to be known internationally.

Completion of wind tunnel for actual cars in 1976





This wind tunnel was the pilot plant in Japan. For the first time, the automotive industry could collectively use such a facility.

Start of research for health effects



in 1983



Prompt work on health effect research of diesel exhaust emissions by tests using animals

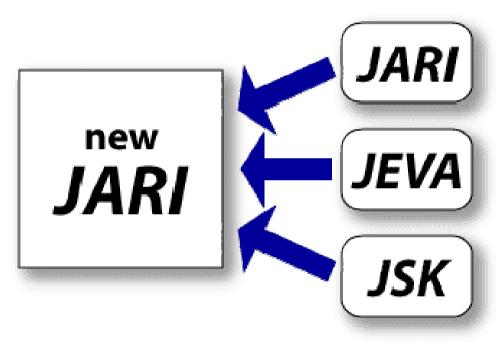
Development of ceramic gas turbine from 1990 to 1999



Lead to the joint development of the advanced technology



The three organizations integrated to form the new JARI in July 2003



Japan Automobile Research Institute
Overall research and examination concerning vehicles

Japan Electric Vehicle Association Promotion and set of standards and criteria for low-pollution vehicles

Association of Electric Technology for Automobile Traffic and Driving Promotion and conduction of research and development in ITS

Shirosato Test Center (Entered service: Oct. 2005)



