

Japan Automotive Model-Based Engineering Center Established

Expanding the reach of *Monozukuri* and contributing to further development of Japan's automotive industry

With five Japanese automobile manufacturers and five parts manufacturers as executive members, we announced today the establishment of the Japan Automotive Model-Based Engineering center (JAMBE), whose mission is to promote Model-Based Development (MBD)^{*1} across Japan's automotive industry.

The center was founded to fulfill the purpose of creating the most-advanced development community in the mobility sector, able to carry out optimal and high-grade *Monozukuri* efficiently and without rework. Primarily consisting of private companies, the center succeeds an initiative led by Japan's Ministry of Economy, Trade and Industry called "Enrichment of *Suriawase 2.0*^{*2}" — an industry-academia-government and strategic future policy for MBD in the automobile industry — which had been compiled as a result of discussions conducted by the Study Group for Ideal Approaches to Model Utilization in the Automobile Industry^{*3}.

The center ultimately aims to enable academia and businesses to share digital models^{*4} across the board, linking academic research with development of parts, systems and vehicles. Therefore, allowing both sides to coordinate and make adjustments (*Suriawase* in Japanese) digitally from the initial stages of development.

JAMBE's Guiding principle / Vision / Goal and Pros of participating members:

<Guiding principle>

- Contribute to making Japan's automotive industry more competitive internationally by spreading and deploying MBD technology and concretizing the *Suriawase 2.0* concept's high-grade virtual model development technology.

<Vision>

- Utilize MBD to promote carbon neutrality and innovation of vehicle technology to respond to needs such as CASE, thereby contributing to SDGs.
- Encourage organizations of all sizes to use virtual models, thereby promoting highly efficient research and development.

<Goal>

- Concretize *Suriawase 2.0*: MBR^{*5} (Academia) creates new models and MBD (Industry) enhances development efficiency by using the same models across parts and vehicle manufacturers in the engineering chain for their *Suriawase* engineering style, creating new value and achieving the most efficient development processes in the world, free from rework.

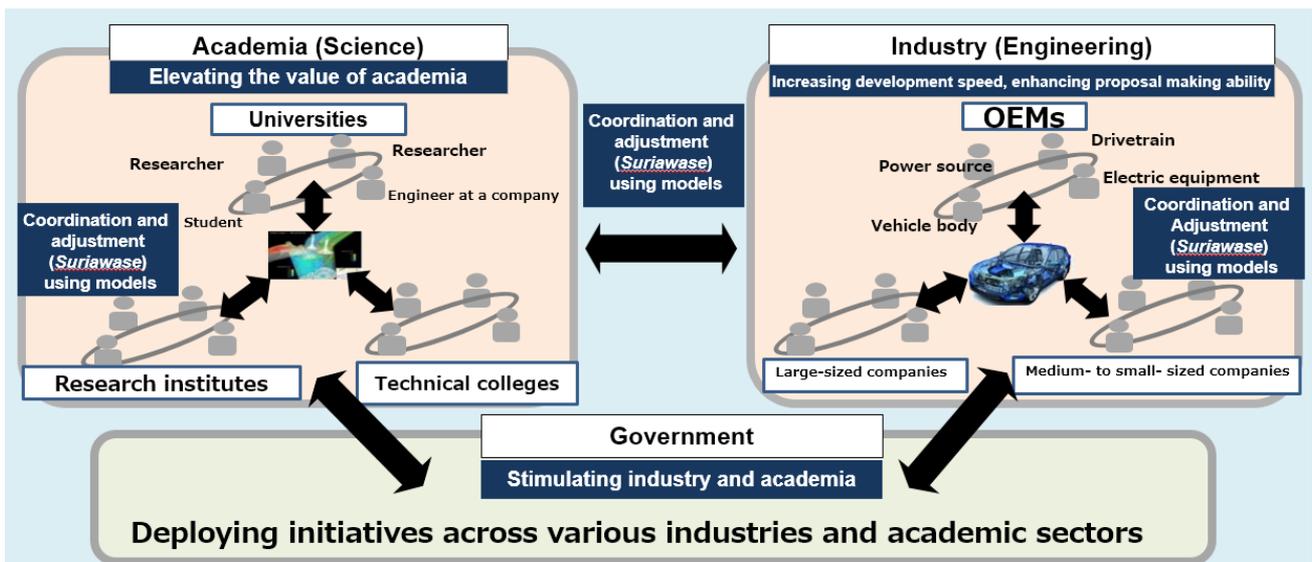
<Pros of participating members>

- Members can expect profit expansion and future growth through enhancement and streamlining of their capabilities for research and development.
- Even comparatively small-sized company members can expect business expansion through a reduction in spending using manufacturing CAE (computer-aided engineering) or strengthened capabilities to make new business propositions.

Comment by Mitsuo Hitomi, chairperson of JAMBE’s steering committee:

“With five Japanese automobile manufacturers, five parts manufacturers and the Japan Automobile Research Institute (JARI) as secretariat, we have established JAMBE to disseminate model-based development across the automotive industry in Japan,” said Mitsuo Hitomi, to commemorate the launch of the center, “Through JAMBE’s initiatives, we will endeavor to make Japan’s automobile industry more competitive globally, while also developing human resources who will take on future digital manufacturing. I hope many concerned parties, including universities, research institutions, tool vendors and engineering service providers, will relate to and take part in JAMBE, so we can all contribute to the further development of Japan’s manufacturing.”

Illustration of cooperation across industry, academia and government



Overview of Japan Automotive Model-Based Engineering center

Name: Japan Automotive Model-Based Engineering center (JAMBE)
Business outline: Promotion of model-based development technologies, establishment of structure of model distribution across business entities as well as between industry and academia
[Joint research business project of participating companies (members) and Japan Automotive Research Institute JARI (secretariat)]
Chairperson of steering committee: Mitsuo Hitomi (Senior Innovation Fellow, Mazda Motor Corporation)
Operation cost: Approximately 60 million yen per year
Established: July 9, 2021

Participating companies (as of Sept. 24, 2021)

Executive members:

AISIN CORPORATION, JATCO Ltd, SUBARU CORPORATION, DENSO CORPORATION, TOYOTA MOTOR CORPORATION, Nissan Motor Co., Ltd., Panasonic Corporation, Honda Motor Co., Ltd., Mazda Motor Corporation, Mitsubishi Electric Corporation

Secretariat:

Japan Automobile Research Institute (JARI)

Companies planning to join JAMBE (as of Sept. 24, 2021)

Lead members

AZAPA Co., Ltd., NTT DATA ENGINEERING SYSTEMS Corporation, DAIHATSU MOTOR CO., LTD., TOSHIBA DIGITAL SOLUTIONS CORPORATION, Microsoft Japan Co., Ltd., NEXTY ELECTRONICS CORPORATION, Hitachi Astemo, Ltd., MITSUBISHI MOTORS CORPORATION

Partner members

IDAJ Co., LTD., IPG Automotive K.K., AdvanceSoft Corporation, ANSYS Japan K.K., ITOCHU Techno-Solutions Corporation, Integration Technology Co., Ltd., eXmotion Co., Ltd., SCSK Corporation, MCOR Co.,Ltd., Cybernet Systems Co., Ltd., Siemens K.K., ZUKEN Inc., ZUKEN Modelinx Inc., dSPACE Japan K.K., Digital Arts Inc., DIGITAL PROCESS LTD, Information Services International-Dentsu, Ltd., Toshiba Electronic Devices & Storage Corporation, Toyota Technical Development Corporation, National Instruments Japan Corporation, NewtonWorks Corporation, PERSOL TECHNOLOGY STAFF CO.,LTD., RYOMO SYSTEMS CO., LTD.

Regular members

Hino Motors, Ltd., plus an extra company

Online forum to commemorate the start of JAMBE

A briefing session will be held on the outline of JAMBE, its membership system and examples of model distribution for prospective member organizations.

Date: Oct. 8, 2021 from 15:00 to 17:30
How to apply: Visit JAMBE's official website at <https://www.jambe.jp/uploads/20210924b.pdf>
Application deadline: Oct. 6, 2021

Contact details

JARI Inquiries: sogomado@jari.or.jp

^{*1} Model-Based Development (MBD): A development style that uses virtual models on a computer, not using actual prototype parts throughout design and development activities to realize efficient development activities by saving considerable time and effort that would usually be spent elaborating performance concepts, designing, making prototype parts, and testing.

^{*2} Suriawase 2.0: A concept that uses MBD to heighten the degree of coordination of cross-disciplinary development (*Suriawase* engineering style) between companies and between industry and academia throughout the engineering chain.

^{*3} Established in November 2015 by the Ministry of Economy, Trade and Industry. Please visit the website below for further details. https://www.meti.go.jp/english/press/2018/0404_001.html

^{*4} A "model" is a simulated object that is made to behave like a real object using computer simulation. Depending on the needs, models of various scales are used, including models of individual parts (e.g., pistons of an engine), models of systems/units (e.g., an engine), and models of entire vehicles. Models can also refer to mathematical models of phenomena such as fuel combustion, hydraulic oil flow, etc.

^{*5} Model-Based Research (MBR): MBR means activities of basic research and numerous experiments of physical phenomena to create models with higher accuracy that are required for successful MBD.