

For immediate release

May 15, 2012

SIM-Drive Corporation

## **Invitation to participate in SIM-Drive Corporation's Advanced Development Project's Model No.4**

SIM-Drive Corporation (head office: Kawasaki City; president: Hiroshi Shimizu), which aims to make use of electric vehicles widespread through its high technological capabilities and new open-source business model, is pleased to announce that it will start the Advanced Development Project's Model No. 4 from 25<sup>th</sup> February 2013 to 31<sup>st</sup> March 2014, and starts invitation.

### **1. Advanced Vehicle Development Project**

One of the major characteristics of Advanced Development Project is the adoption of an open-source scheme. This is because part of our mission is to spread the use of the combined in-wheel motor and component built-in frame technologies, instead of manufacturing and selling electric vehicles as final products. When people from participating organizations experience the electric vehicle industry, in which these technologies serve as the core, and then take back the technologies and the contacts they made through this experience to their organizations, the industry will grow even more.

The project offers the program which is open to participate in for all companies and organizations of any genre or field who are interested in the electric vehicle industry.

### **2. Electric Vehicle to be developed in the Advanced Vehicle Development Project's No. 4**

In the Advanced Vehicle Development Project's Model No. 4, as was the cases of Project No. 1, No. 2 and No. 3, we would adopt the In-wheel Motor Technology and Component Built-in Frame Technology effectively. With these technologies, we would seek effective use of motors, small air drag, and the minimized tire rolling resistance coefficient. Further features to put on prototype to be developed in the Advanced Vehicle Development Project's Model No. 4 would be generated through the project.

### **3. Return to the Participants of the Advanced Vehicle Development Project's No. 4**

Information and privileges provided to the Participants are as follows:

Reports and Drawings	Experiences in actual prototype development	Right to use the developed model
<ul style="list-style-type: none"> <li>• Specifications</li> <li>• Major Drawings</li> <li>• Overall Evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Realize the electric vehicle; advanced developed model, with new concept</li> <li>• Learn fundamental technologies through electric vehicle development</li> <li>• Obtain fundamental information on electric vehicle business</li> <li>• Expand network with other companies / organizations</li> <li>• Develop human resources</li> </ul>	<ul style="list-style-type: none"> <li>• In-house evaluation tests</li> <li>• Use as a material for promotions</li> <li>• Use as a material for CSR</li> </ul>

#### 4. Invitation detail of the Advanced Vehicle Development Project's Model No. 4

- ◆ Project period : From Feb. 25<sup>th</sup> , 2013 to Mar. 31<sup>st</sup> , 2014
- ◆ Participation scale : About 30 organizations
- ◆ Application period : To the day before of the start of the project, or 24<sup>th</sup> February 2013.
- ◆ Application target : Company, Local government
- ◆ Participation fee : 20 million yen

#### 5. Previous Projects

##### – Advanced Vehicle Development Project's Model No. 1 –

SIM-Drive has developed the Advanced Vehicle Development Model No.1 from January 2010 and completed the construction of the vehicle developed under the project. We named the model "SIM-LEI" (Figure 1). General specification is shown in table 1. This project collected 34 organizations, out of which are 32 companies and 2 local governments shown in table 2.

Figure 1. SIM-LEI

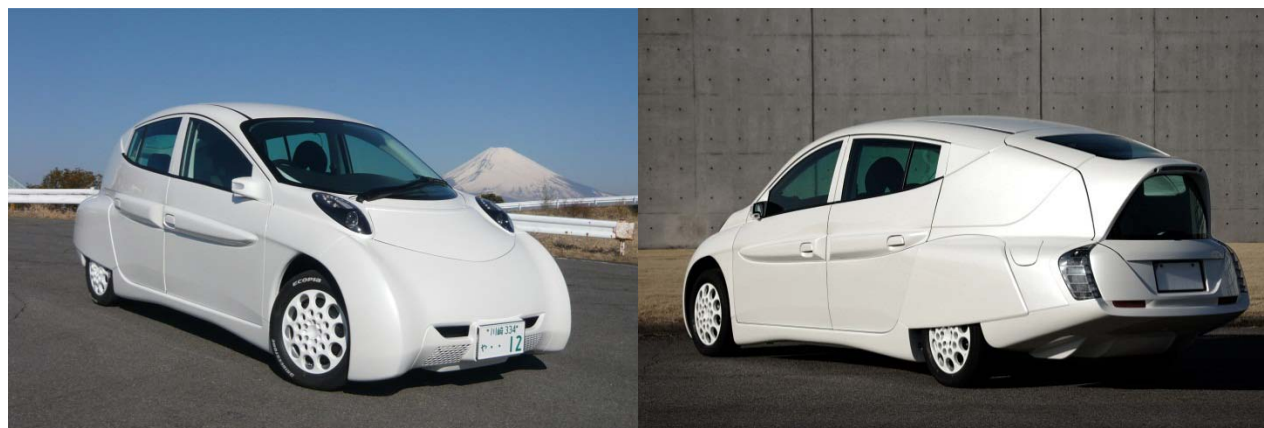


Table 1: General Specification of SIM-LEI

Overall Length/Width/Height	4700mm/1600mm/1550mm
Number of seat	4 people
Vehicle Weight	1650kg
Drive System	Outer rotor direct drive in-wheel motor
Drive	4WD
Minimum turning radius	5.5m
Range per charge by JC-08 mode:	268km
Driving energy consumption by JC-08 mode:	92.8Wh/km
Standing start acceleration; 0→100km/h	4.8sec
Maximum speed	150km/h
Battery Capacity	24.9kWh (Lithium ion battery)
Charging time	1h (CHAdeMO)、12h (200V)

Table 2, 34 establishments and organizations participated (**Alphabetical order**)  
[Organizations who permitted the announcement of their participation]

<b>Benesse Holdings, Inc.</b>	<b>Nikkan Industries Co., Ltd.</b>
<b>Dynax Corporation</b>	<b>Nippon Telegraph and Telephone East Corp</b>
<b>Enelop, Inc.</b>	<b>Okayama Prefectural Government</b>
<b>IHI Corporation</b>	<b>Olympus Corporation</b>
<b>Inoue Manufacturing Co., Ltd.</b>	<b>Pioneer Corporation</b>
<b>Iriso Electronics Co., Ltd.</b>	<b>Sanden Corporation</b>
<b>Isuzu Motors Limited</b>	<b>Serio Corporation</b>
<b>Japan Aviation Electronics Industry, Ltd.</b>	<b>Tanaka Kikinzoku Group</b>
<b>Kureha Corporation</b>	<b>TECO Electric &amp; Machinery Co., Ltd.</b>
<b>Mitsubishi Corporation</b>	<b>THK Co., Ltd.</b>
<b>Mitsubishi Motors Corporation</b>	<b>Tokyo Electric Power Company</b>
<b>Mitsui &amp; Co., Ltd.</b>	<b>Totoku Toryo Co., Ltd.</b>
<b>Mitsuiwa Corporation</b>	<b>Tottori Prefectural Government</b>
<b>Nano-Optonics Energy, Inc.</b>	<b>TPR Co., Ltd.</b>

- **Advanced Vehicle Development Project's Model No. 2 –**
- SIM-Drive has developed the Advanced Vehicle Development Model No.2 from January 2011 and completed the construction of the vehicle developed under the project. We named the model “SIM-WIL” (Figure 2) which achieves 351km ranger per charge and cabin space, which is comparable to that of large cars (E segment) even though it is classified as a small car (B segment) General specification is shown in table 3. This project collected 34 organizations, out of which are 32 companies shown in table 4.

- Figure 2. SIM-WIL



Table 3: General Specification of SIM-WIL

Overall Length/Width/Height	4150mm/1715mm/1550mm
Number of seat	5 people
Vehicle Weight	1580kg
Drive System	Outer rotor direct drive in-wheel motor
Drive	4WD
Minimum turning radius	5.4m
Range per charge by JC-08 mode:	351km
Driving energy consumption by JC-08 mode:	99.7Wh/km
Standing start acceleration; 0→100km/h	5.4sec
Maximum speed	180km/h
Battery Capacity	35.1kWh (Lithium ion battery)
Charging time	3h (CHAdeMO)、12h (200V)

Table 4, 34 establishments and organizations participated (Alphabetical order)

[Organizations who permitted the announcement of their participation]

<b>Advantest Corporation</b>	<b>Nihon Parkerizing Co., Ltd</b>
<b>Asahi Kasei Corporation</b>	<b>Oiles Corporation</b>
<b>Bosch</b>	<b>Polyplastics Co., Ltd</b>
<b>CAR MATE MFG. CO., LTD.</b>	<b>PSA Peugeot Citroën</b>
<b>Chiyoda Corporation</b>	<b>Somic Ishikawa Inc.</b>
<b>Dassault Systems K.K.</b>	<b>Sunstar Engineering Inc.</b>
<b>Du Pont Kabushiki Kaisha</b>	<b>Takata Corporation</b>
<b>Du Pont-Mitsui Polychemicals Co., Ltd</b>	<b>TBK Co., Ltd</b>
<b>Hitachi Advanced Digital, Inc.</b>	<b>Tohoku Electric Power Co., Inc.</b>
<b>Hitachi Chemical Company, Ltd.</b>	<b>Toppan Printing Co., Ltd.</b>

<b>Kawasaki Industrial Co., Ltd.</b>	<b>Toray Industries, Inc.</b>
<b>Kuraray Co., Ltd.</b>	<b>Tokyo MK Corporation</b>
<b>Mikuni Corporation</b>	<b>Toyota Tsusho Corporation</b>
<b>Mitsuuroko Co., Ltd</b>	<b>T.RAD Co., Ltd</b>

– **Advanced Vehicle Development Project’s Model No. 3 –**

The Advanced Vehicle Development Project III collected 26 corporations. Advanced Vehicle Development Model No.3 will be developed by the end of March 2013, and will be registered as an assembled model by duly complying Japanese Safety Standard and Technical Regulations in Japan. In the Model No. 3 project, in addition to the trial production of the advanced development models from the two previous projects, the company will attempt to realize the concept of smart transportation and work to develop the hardware and software necessary to realize this concept. The participants (Table 5) are as listed below;

Table 5, 26 establishments and organizations participated (**Alphabetical order**)

[Organizations who permitted the announcement of their participation]

ARGO GRAPHICS Inc.	Nakagawa Special Steel Co., Inc.
Daikin Industries, Ltd.	NGK SPARK PLUG Co., LTD.
DENSO CORPORATION	NHK SPRING CO., LTD.
DAIDO KOGYO CO., LTD.	NTN Corporation
DSM Japan Engineering Plastics	RENIAS CO., LTD.
Fujikura Ltd.	SANGO Co., Ltd.
GMB CORPORATION	Sekisui House, Ltd.
HASHIMOTO SOGYO Ltd.	Stanley Electric Co., Ltd.
Hirata Corporation	Sumitomo Heavy Industries, Ltd.
JUST AUTOMOBILE LEASING CO., LTD.	TOKYO ELECTRON DEVICE LIMITED
Lithium Energy Japan	Ube Industries, Ltd.
Mitsubishi Electric Corporation	The Yokohama Rubber Company, Limited
Mitsui Fudosan Co., Ltd.	

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