

Collaboration Possibilities of KERI and ORNL with IEA and non-IEA members on the Next Generation Electric Motor and Drive Program

Discussed at the
Korea Electrotechnology
Research Institutes
(Mechantronics Research Group)

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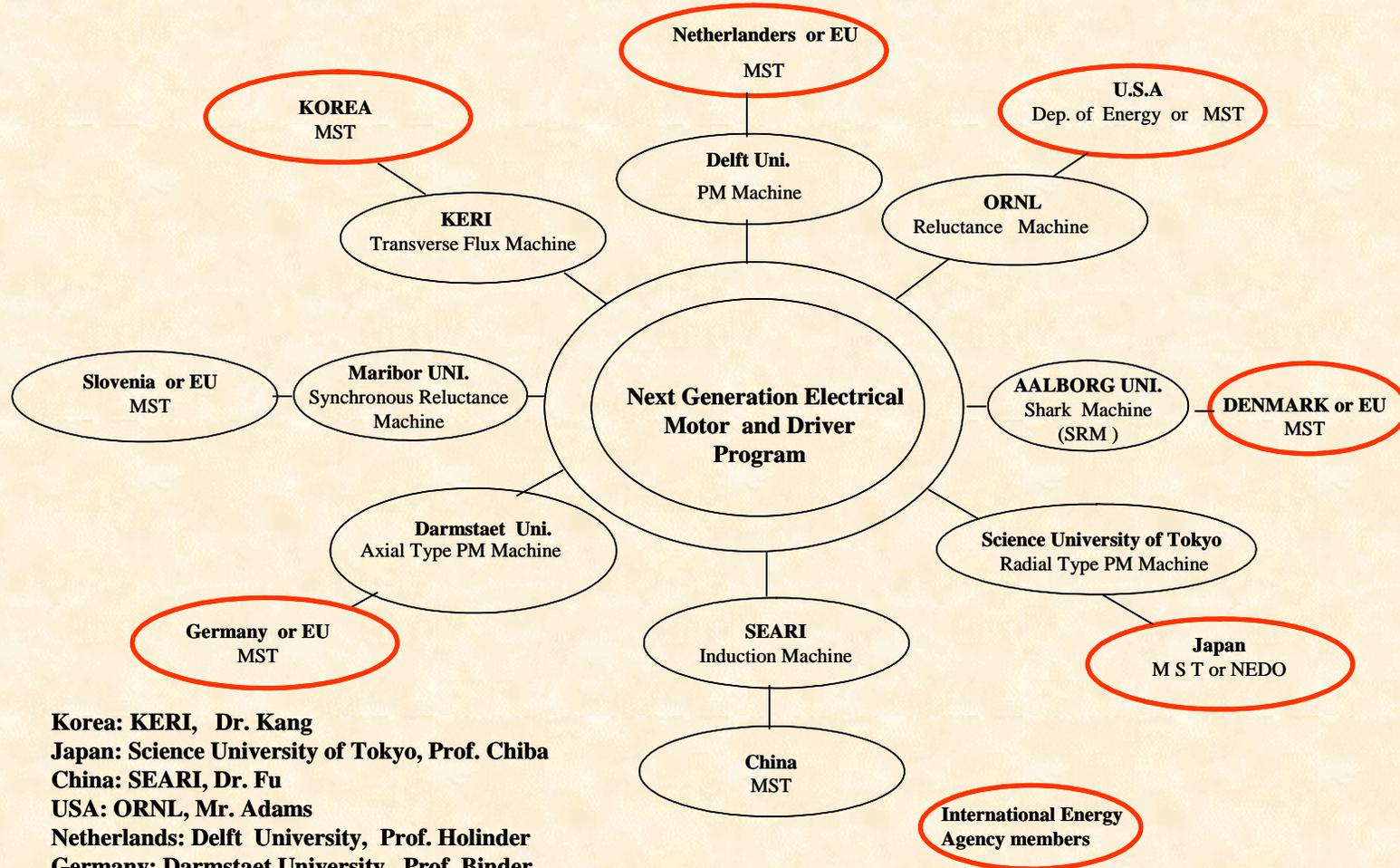
KERI's Collaboration Proposal

- **World-wide collaboration on next generation electric motor and drive.**
- **Examine technology of traction drive motors such as induction, permanent magnet, variable reluctance and transverse flux motors to choose the traction drive system that will best meet electric vehicle needs.**
- **Interested countries are Korea, Japan, China, the United States of America, the Netherlands, Germany, Denmark, and Slovenia.**
- **Members will craft a Memorandum of Understanding (MOU) for a Joint Research Agreement.**
- **Members will submit MOUs to their organizations for approval and seek funding for three years.**
- **Members will meet 2 or 3 times a year to refine research plan and to exchange results.**
- **During third year members will seek research funds and continue collaboration with a consortium of private companies to begin during year 4.**

Types of Data to be Compared or Exchanged

- **Specific electric motor/drive applications**
 - Passenger, light-duty
 - Off-road, heavy-duty
- **Motor, drive, motor + drive evaluations**
 - Specific power, kw/kg
 - Power density, kw/m³
 - Efficiency
 - Cost, \$/kw
- **Theoretical bases for comparison**
- **Analytical methods and models**

Collaboration Wheel Proposed by KERI



Korea: KERI, Dr. Kang
Japan: Science University of Tokyo, Prof. Chiba
China: SEARI, Dr. Fu
USA: ORNL, Mr. Adams
Netherlands: Delft University, Prof. Holinder
Germany: Darmstaet University, Prof. Binder
Denmark: AALBORG University, Prof. Rasmussen
Slovenia : Maribor University, Prof. Dolinar

SEARI: Shanghai Electrical Apparatus Research Institute
MST: Ministry of Science and Tech. or Ministry of Education

IEA Objectives

Based in Paris the IEA has been the autonomous energy forum for member countries, whose governments have been committed

- to taking joint measures to meet oil supply emergencies;**
- to share energy information;**
- to improve the world's energy supply and demand structure by developing alternative energy sources and increasing the efficiency of energy use; and**
- to promote rational global energy policies through cooperative relations with non-member countries, industry, and international organizations.**

To Contact the IEA

- URL www.iea.org

- Physical Location

International Energy Agency

9, rue de la Fédération

75739 Paris Cedex 15

France

- Tel: 33 1 40 57 65 00/01

- Fax: 33 1 40 57 65 59

The IEA Secretariat

- Has become the authoritative source for worldwide energy statistics
- Publishes the indispensable monthly Oil Market Report and the influential biannual World Energy Outlook
- Actively reaches out to **non-member** countries whose role in the world economy and world energy markets is rapidly growing.
- Stimulates the development and deployment of new energy technologies through a vast network of **Implementing Agreements (IAs)**

Implementing Agreement (IA)

An IA is a

- **contractual agreement;**
- **established by at least two IEA member countries;**
- **approved by the IEA Governing Board;**
- **enables the countries to carry out programs and projects on energy technology research, development, and deployment;**
- **two categories of participants;**
 - **Contracting parties – governments, the EU, international organizations, entities designated by governments**
 - **Sponsors – entities not designated by governments.**

IA Organization

Working parties on the IEA Governing Board's Committee on Energy Research and Technology (CERT) coordinate the IAs.

- The Working Party on Energy End-Use Technologies coordinates IAs related to **Transportation**, Buildings, Industry, Information Centers, and Systems Analysis end-use technologies.
- **Advanced Fuel Cells, Advanced Motor Fuels, Advanced Materials for Transportation, and Hybrid and Electric Vehicle Technology** IAs are all under the **Transportation** end-use technology.
- ORNL participates in Advanced motor fuels and Advanced materials for transportation
- **A possible platform for this proposed collaboration is as part of the IA for Hybrid and Electric Vehicles.**