SURVEY ON THE NEEDS AND REQUIREMENTS FOR AN ADVANCED VEHICLE POWERTRAIN RESEARCH NETWORK (AVPRNet)

The overall objective of Transport Canada’s Advanced Vehicle Powertrain Research Network (AVPRNet) project is to create a Canadian network of researchers, industry and other stakeholders focused on the development of advanced powertrains for hybrid and alternate energy source vehicles, using modern simulation/modeling techniques to optimize these systems.

The outcome of this project will be a consolidated new capacity in simulation and optimization of transportation systems advanced powertrains. This capacity will be made available to industry and academia so that research efforts can be increased significantly, leading to the commercialization of competitive systems and helping Canadian industry increase its presence in this emerging technology area. An additional benefit will be the training of young engineers in advanced transportation technologies.

The first step in the AVPRNet project is to define, recommend and establish the administrative and physical infrastructures needed for the creation of the network. This survey aims to gather information on the Canadian powertrain research community and to determine the potential benefits of a powertrain simulation network for that community.

The survey is divided into two parts:
- Part 1 has been designed to assess the current state of powertrain simulation research and acquire information on the possible direction and needs of future powertrain simulation research.
- Part 2 has been designed to gauge participants’ potential interest in a powertrain simulation network and gather their input on some of the key issues involved in the establishment of such a network.

PLEASE RETURN SURVEY TO REGISTRATION DESK

An electronic version of this survey is available at http://avprnet.mcgill.ca/
Completed electronic surveys may be sent to PHEV2007survey@gmail.com

Respondent Identification

Name & Title(s): _____________________________________________________________
Affiliation(s): _____________________________________________________________
Contact information (e-mail, phone, fax, website): ________________________________
Research areas of interest (past, present and future): _______________________________
___________________________________________________________
___________________________________________________________
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Part 1: Assessment of Current Simulation Work and Future Needs and Requirements

Current Simulation Work

1.1 Does your current work involve powertrain modeling and simulation? □ Yes □ No
If so, please list the modeling and simulation software and/or hardware used and indicate the types of modeling and simulations for which each one is used (e.g., PSAT = Hybrid vehicle power management, OPAL RT = Vehicle to grid, Matlab Simulink = Hybrid vehicle drive component models).

1.2 Which powertrain models do you use (e.g., Toyota Prius hybrid, lithium battery model, internal combustion engine and wheel motor magnetic fields model)?

a) Are these models part of a model library? □ Yes □ No
If so, which one?

b) Are they public or private sources?

1.3 Are your current powertrain modeling and simulation activities part of larger project (e.g., simulation network, multi-university/industry partnership, Auto21)? □ Yes □ No
Please specify.

1.4 Do your current powertrain modeling and simulation activities involve direct exchange of specific model and simulation information with other entities? □ Yes □ No
a) If so, are there specific formats, exchange protocols and/or other specific requirements that must be adhered to for this exchange of information to take place? □ Yes □ No
If so, please specify.

Future Work

1.5 Do you foresee your future work involving powertrain modeling and simulation? □ Yes □ No
a) If you plan to use powertrain modeling and simulation software and/or hardware, which software and/or hardware do you plan to use?

Please use the back of this page to expand on any of the answers above or to provide more information on your current and future powertrain modeling and simulation activities.
Part 2: Interest in Participation and Input on Network Establishment

Advanced Vehicle Powertrain Research Network (AVPRNet) preliminary vision:

The goal is to create an entity (corporate, governmental or other) that enables the management and exchange of information and models relevant to advanced powertrain simulation research. This entity would also promote such exchanges and act as a catalyst for the installment of research projects in the field of advanced powertrain simulation. It could play a pivotal role in linking industry needs to academic and government research as well as in training young engineers in the world of advanced powertrain simulation. One means of attaining these objectives is to have the network house a basic advanced powertrain model library.

2.1 Would you be interested in participating in a Canadian Advanced Vehicle Powertrain Research Network?

[ ] Yes  [ ] No

If not, why?

(Questions 2.2, 2.2(a) and 2.2(b) are geared toward industry respondents)

2.2 Do you currently work on powertrain research (or some component thereof) with researchers at a university, college or government lab?

[ ] Yes  [ ] No

a) What would motivate you to join a powertrain research network that includes university, college or government labs? (Please check one or more and elaborate.)

[ ] Expertise  [ ] Cutting edge research
[ ] Infrastructure  [ ] Networking
[ ] Training  [ ] Leverage funding
[ ] Graduates  [ ] Other (please specify)

b) Why would you not wish to join a powertrain research network that includes university, college or government labs? (Please check one or more and elaborate.)

[ ] Intellectual properties issues
[ ] Cost
[ ] In-house capabilities
[ ] Other (please specify)

Please use the back of this page to expand on any of the answers above or to give us your opinion and input on AVPRNet’s preliminary vision.
2.3 How could you potentially benefit from a powertrain research network?

a) Would you need specific models?  
   □ Yes  □ No
   If yes, which models and for which applications (e.g., HEV, hybrid bus, fuel cell, refuse truck)?

b) What would the models be used for (e.g., optimizing existing vehicle designs, developing new designs, validating existing/new designs)?

c) Would these models help the organization you work with develop an expertise in a new field?  
   □ Yes  □ No

2.3 Would you share your models with Network participants?  
   □ Yes  □ No

a) Would you put restrictions on the use of your models?  
   □ Yes  □ No
   If yes, how?

b) Would IP issues be a potential barrier to your participation in a powertrain research network?  
   □ Yes  □ No
   If yes, how?

c) How do you think such IP issues should be addressed by the network?

2.5 How would this potential powertrain research network benefit your current and future work, and vise versa? How would you envision such a network operating? Key issues are:

- Membership
- Individual costs
- Affiliation
- Resources
- Specific activities
- Funding of the network
- Financial management of the network

Please use the back of this page to expand on any of the answers above.
Thank you for taking the time to complete this survey.