Establishing a Comprehensive Transport Research Information Management and Exchange System

The "HERMES" project
Background

- The HERMES project was created in response to the European Commission’s call for:
  - “encouraging participation and dissemination of research results.”
  - “providing the means of enacting productive international transport research cooperation in the future”,

ETRA Conference - “Towards a More Efficient Use of Transport Research Infrastructures
Centre Diamant, Brussels, 10th October 2013
Aims

The HERMES project has undertaken a number of activities but two form the core of the project:

- the creation of a "transport research database access portal" to facilitate access to information on transportation research carried out internationally,
- to "engage researchers" in round table discussions to address the issues that inhibit a closer international collaboration in transportation research.
The HERMES Consortium

- Newcastle University UK
- Foundation WEGEMT NL
- European Aeronautics Science Network BE
- Euromobilita s.r.o. CZ
- International Union of Railways FR

Non EU collaborating organisations
- Transportation Research Board (TRB) USA
- Australian Road Research Board (ARRB) AUS
- Institute of Transport Economics Japan (ITEJ) JAP

Advisory Board
- Mr M. Violand OECD
- Mr G. Woodroffe RSSB
- Mrs B. Sandstedt VTI
Facilitating access to information of international transportation research.

PORTAL DEVELOPMENT
Portal development

- Why?
  - Obtaining up to date information on international activities is a time consuming task.
  - Too many databases (some live, some dormant).
  - Several countries (even within the EU) do not have a central database of all national government funded activities.
  - Different database architectures.
  - Navigation sometimes not intuitive.
  - Smaller databases not widely known.
## Differences in search filters

<table>
<thead>
<tr>
<th>Australian Road Research Register</th>
<th>TRID (US)</th>
<th>TRIP (EU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>Administration and Management</td>
<td>Modes</td>
</tr>
<tr>
<td>Bridge design and management</td>
<td>Aviation</td>
<td>Air transport</td>
</tr>
<tr>
<td>Environment</td>
<td>Bridges and other structures</td>
<td>Rail transport</td>
</tr>
<tr>
<td>Freight transport and logistics</td>
<td>Construction</td>
<td>Road transport</td>
</tr>
<tr>
<td>Heavy Vehicles</td>
<td>Data and Information Technology</td>
<td>Urban transport</td>
</tr>
<tr>
<td>Intelligent Transport System ITS</td>
<td>Design</td>
<td>Water transport</td>
</tr>
<tr>
<td>Materials</td>
<td>Economics</td>
<td>Multimodal transport</td>
</tr>
<tr>
<td>Pavement structures</td>
<td>Education and Training</td>
<td></td>
</tr>
<tr>
<td>Public transport</td>
<td>Energy</td>
<td></td>
</tr>
<tr>
<td>Registration and Licensing</td>
<td>Environment</td>
<td></td>
</tr>
<tr>
<td>Road design</td>
<td>Finance</td>
<td></td>
</tr>
<tr>
<td>Road Safety (Engineering)</td>
<td>Freight Transportation</td>
<td></td>
</tr>
<tr>
<td>Road Safety (Human factors)</td>
<td>Geotechnology</td>
<td></td>
</tr>
<tr>
<td>Road Safety (Vehicles)</td>
<td>Highways</td>
<td></td>
</tr>
<tr>
<td>Skills and Education</td>
<td>History</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>Hydraulics and Hydrology</td>
<td></td>
</tr>
<tr>
<td>Traffic management and planning</td>
<td>Law</td>
<td></td>
</tr>
<tr>
<td>Transport economics</td>
<td>Maintenance and Preservation</td>
<td></td>
</tr>
<tr>
<td>Travel behaviour</td>
<td>Marine Transportation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Motor Carriers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operations and Traffic Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Passenger Transportation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Policy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public Transportation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Railroads</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Safety and Human Factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Security and Emergencies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Society</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Terminals and Facilities</td>
<td></td>
</tr>
</tbody>
</table>

There is not a universally agreed system for categorising transportation research.
Portal development

- A list of worldwide databases of transportation research by transport mode has been compiled and links to those have been established.
- Access to 169 databases (list constantly updated) has been achieved.
- Databases have been ranked in three categories
  - Simple databases
  - Searchable databases
  - Full databases
Portal development

- **Simple database**: Lists of projects, very basic information (*title*, *description of the main topic of the project*, *project manager*), most under HTML format, no search engine.

- **Searchable database**: Detailed description of work (*PDF document often attached*) and consortium info. Accessible through a simple search engine (neither keywords nor thesaurus), no translation of information in English.

- **Full database**: Detailed project and consortium information, organised through a precise search engine with keywords and thesaurus.

HERMES had to address those challenges and developed a number of software solutions to retrieve information.
Portal development

transport-research-portal.net
Creating the conditions for closer international collaboration in transportation research

ENGAGEMENT OF RESEARCHERS
Engagement of researchers

- HERMES WORKSHOP ON INTERNATIONAL COLLABORATION
  - UIC Headquarters, April 2014
  - 87 participants over 2 days from EU, US, AUS, Japan, Israel, Ukraine, Egypt, S. Korea
  - identify and debate the issues that inhibit closer international collaboration,
  - express their opinions on the policies/measures that need to be taken to eliminate/circumvent any obstacles.
  - provide recommendations for policies and best practices.

- HERMES QUESTIONNAIRE
  - A questionnaire was sent to over 1,000 transport researchers and industry executives around the world addressing similar issues to those raised at the workshop.
Workshop output

- **IPR**
  - Not as big a problem as initially perceived
  - Virtually all countries have adopted a “first to file” system. In the US came into effect in March 2013 (America Invents Act)
  - IPR can be defined at the outset through a consortium agreement

- **Administrative issues**
  - Distance, travel time
  - Language
  - Cultural differences
  - Complex rules for participation can put off people from participating, especially small players (SMEs)
  - Homologation, standardisation differences
  - Differences in legal systems
Workshop output

• **Funding**
  - No dedicated funding mechanism for international collaboration.
  - EC’s FP generally generous to participation of non EU entities. No equivalence (reciprocity) from other nations.
    - “Concerted actions” or “Targeted calls” have been the instrument for such collaborations.
  - Funding horizon. Maybe the most important obstacle.
    - In the EU typically 3 years, awarded to a consortium.
    - In the US, Australia, Japan typically one year, awarded to a single entity.

• **Access to up to date information of ongoing research projects**

• **PERSONAL CONTACT**
Questionnaire output – Funding sources

<table>
<thead>
<tr>
<th>Sub-questions</th>
<th>Resp.</th>
<th>% of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Government and Regional (various grant schemes)</td>
<td>98</td>
<td>18 10 11 22 38</td>
</tr>
<tr>
<td>Local Government (e.g. regional development funding)</td>
<td>90</td>
<td>39 18 23 12  8</td>
</tr>
<tr>
<td>European Union collaborative research programmes (if in EU)</td>
<td>102</td>
<td>15  7 12 25 41</td>
</tr>
<tr>
<td>Industry funding (either single entity direct funding or Joint Industry Projects)</td>
<td>99</td>
<td>17 15 25 19 23</td>
</tr>
<tr>
<td>Own funding</td>
<td>91</td>
<td>25 23 12 14 25</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>10</td>
<td>40 20 40 40 40</td>
</tr>
</tbody>
</table>

Average: 3.15 — Median: 3

Replies to "What is the most important source for funding for your research?"
Replies to "If you have participated in international collaborative projects, how did you seek potential partners?"
Questionnaire responses – Access to Information

<table>
<thead>
<tr>
<th>Sub-questions</th>
<th>Resp.</th>
<th>% of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Research databases</td>
<td>98</td>
<td>15 27 22 19 16</td>
</tr>
<tr>
<td>Scientific journals</td>
<td>103</td>
<td>11 9 20 26 34</td>
</tr>
<tr>
<td>International conferences</td>
<td>100</td>
<td>7 10 18 37 28</td>
</tr>
<tr>
<td>Rely on colleagues for information</td>
<td>102</td>
<td>7 16 31 25 21</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>21</td>
<td>19 5 10 67 34</td>
</tr>
</tbody>
</table>

Average: 3.45 – Median: 4

Drawbacks with databases:
1. Time consuming process,
2. Fragmentation of information to different databases
3. In-database navigation issues (difficult to navigate and get the information)

Other: Networks, Google, etc

Replies to “How do you stay informed of current and past global research activities in your field
The HERMES Project Output

CONCLUSIONS & RECOMMENDATIONS
Conclusions

- **“Personal contact”** is the most important issue for the research community.

- **“Easy access to information”** has been addressed by the HERMES Transport Research Portal. The portal needs to continue its efforts to identify more databases worldwide, establish links and intensify its dissemination activities to raise awareness.

- **“Funding for international collaborative programmes in transport research”** is broadly not available.
  - Countries will not change legislation (easily or in the short term) to accommodate funding for international collaborative transport research.
  - **Coordination of existing sources of funding and research themes** in each nation state can be used for international collaborative research projects.
HERMES Project Recommendations

● Personal contact

– A scheme similar to the EC’s “Cooperation in Science & Technology” (COST) programme is proposed
  ▪ International Collaboration In Transport Innovation (i-CITI)
– Not the same as “conferences”, researchers invited to join “focus groups” already working on similar research topics.
– Three year duration programmes - sufficient to establish contacts between researchers working in similar topics, exchange of ideas, help overcome cultural issues.
– As with COST funding restricted to travel & subsistence for participating researchers, i.e. not expensive to implement.
– Excellent vehicle also for young researchers to begin networking
HERMES Project Recommendations

● Funding

  – **Existing funding** instruments can yield results if **effectively used and coordinated**.
    - National, own, industry, etc., sources of funding can be used by each nation state to enter international collaborative projects, where the added value can be demonstrated (an i-CITI programme can facilitate this)
  – Industry, particularly SMEs, can get involved (no new administrative rules for them to enter collaborative research projects)
  – Need for a **“Coordinating web based platform” (HERMES?)** to provide information on priority topics of research and available funding (EU, national government)
HERMES Project Recommendations

● HERMES already achieved its aim of facilitating access to information on current and past transport research worldwide.

● Long term aims
  – *To be the “one stop shop” for the transport research community.*
  – *Will work with the European Technology Platforms (ACARE, ERTRAC, Waterborne, ERRAC and new Logistics Platform) and equivalents to ETPs worldwide and act as a “web based tool” to disseminate research priorities.*
  – *Establish links with funding authorities (EU27 and International) to inform the research community of opportunities available.*

● HERMES will very soon incorporate a database of skilled transport researchers within EU and associate states

● HERMES is slowly building on its links and networks of collaboration and can develop into a permanent central coordinating unit of all issues related to international collaboration in transportation research.
“Those who cannot change their minds cannot change anything”

(George Bernard Shaw)
Thank you

www.transport-research-portal.net

Coordinator: Dr George Kotsikos
Tel: +44 (0)191 222 5889
Email: george.kotsikos@ncl.ac.uk
Website: www.hermes-project.net