Terms of reference for:

TC 4.2 – Road/vehicle Interaction

1. Having a 20 – 30-years vision of developments in vehicle and road pavement characteristics
2. Reducing road noise
3. Improve the description of pavement surface characteristics

Strategies:

1. Review the possible evolution in private cars and trucks and impact of these changes on desirable characteristics for pavements
2. Review new developments in vehicles, tyres, pavements and their interaction allowing to envisage a significant reduction in road noise
   Harmonise methods to characterise road noise
3. Continue the work on texture and skid resistance
   Continue the work on automated cracking survey devices
   Review recent practices in the use of surface condition measurement for acceptance of road works
PIARC Technical Committee TC 4.2 – Road/Vehicle Interaction

2003 - 2007

50 Members, 18 Corresponding and associate members

Australia, Austria, Bangladesh, Belgium, Benin, Burkina Faso, Canada, Canada-Quebec, Congo, Czech, Croatia, Denmark, Germany, Finland, France, Hungary, India, Iran, Italy, Japan, Lithuania, Mali, Morocco, Mexico, Mongolia, Norway, Poland, Portugal, Romania, Senegal, Sweden, Switzerland, Slovakia, Slovenia, Spain, South Africa, The Netherlands, United Kingdom, United States

Technical Committee 4.2
Road/Vehicle Interaction

Secretaries:
ENG. Guy Descornet, Belgium
FR. Mathieu Grondin, CAN-Q
ESP. Marta Alonso, Spain

WGA: Trends in vehicle/road interaction monitoring for design and management
Leader: Francesca La Torre, Italy

WGB: Road traffic noise
Leader: Manfred Haider, Austria

WGC: Continued work on Texture, Skid resistance and Evenness
Leader: Ramesh Sinhal, UK

WGD: Automated distress measurements
Leader: Michel Boulet, France

WGE: Advanced Road Works Acceptance Methods and Criteria
Leader: John Emery, CAN

PIARC Technical Committee TC 4.2 – Road/Vehicle Interaction

Bamako, Mali
Feb. 20. Feb. 22. 2006

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Leader: John Emery, CAN
Working group A
Trends in vehicle/road interaction monitoring for design and management
Leader: Dr Francesca La Torre, Italy

Sub groups

► Inventory of monitoring Techniques for loading, speed, stress in motion, vehicle counts

► State of the art of the use of “Monitoring” data in pavement design and management

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STRUCTURE OF THE WORK
WPA1+WPA2 Workshop - Questionnaire.

Road Authorities
Research Institutions

Passenger cars manufacturers;
HGV manufacturers;
Tyre manufacturers;
Sensor and monitoring devices producers;
ITS specialists;
Smart cars & smart trucks producers;
Selected GPS specialists (Fisita representative in Paris)
Pavement Designers
......

WG A - ACTIVITIES
Working group A
Output - Deliverables

<table>
<thead>
<tr>
<th>Technical reports</th>
<th>Inventory of monitoring techniques for loading, speed, stress in motion, vehicle counts, including database.</th>
<th>Summer 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Articles in Routes/Roads</td>
<td>State of the art of the use of “monitoring” data in pavement design and management.</td>
<td>Summer 2006</td>
</tr>
<tr>
<td>Workshop on a 20–30 year vision</td>
<td>Impact of Emerging Vehicle. Pavement and Monitoring Technologies on Road Vehicle Interaction: Where will we be in 30 years</td>
<td>2006/2007</td>
</tr>
</tbody>
</table>

Working group B
Road Traffic Noise
Leader: Mr. Manfred Haider, Austria

Sub groups

- Developments
  Review the recent developments and future prospects in vehicles, tyres and pavements influencing road traffic noise emission.
  Establishing a state of the art of traffic noise reduction technologies at the source, identifying research needs, as well as identifying and recommending new promising global noise reduction strategies.

- Harmonized measurement methods
  Review the current noise measurement methods.
  Recommendation on strategies for their harmonisation
  Support the integration of methods to achieve a standardised set of tools to characterize road traffic noise.
Working group B
Output - Deliverables

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Sessions at XXIII World Road Congress</td>
<td>Measurement methods: state of the art, harmonization trends, recommendations for improvements and research needs.</td>
<td>February 2007</td>
</tr>
</tbody>
</table>

Type | Organisation
--- | ---
ISO WG | ISO/TC 43/SC 1/WG 33 SPB, CPX
ISO WG | ISO/TC 43/SC 1/WG 42 Ref. surface
CEN WG | CEN/TC 227/WG 5 – road surface characteristics
EU WG | EU WG 8 - Tyre noise policy
UN | UN/ECE/GRB Geneva
Commercial | ETRTO – Tyre manufacturers
EU Project | SIRUUS
EU Project | SILVIA
EU Project | HARMONOISE
EU Project | SILENCE
National Project | IPG (NL)
National Project | Leiser Verkehr (Germany)
National Project | BUWAL/ASTRA project (CH)
National Project | Poroelastic road surface project (JP, SE)
National Project | Low noise tyre project (SE, FI, PL, GB)
US Project | Quiet Pavement programme - several activities & reports
Working group C

Continued work on Texture, Skid resistance and Evenness

Leader: Mr Ramesh Sinhal, United Kingdom

Sub groups:

► PIARC tyre specification
  To secure the availability, reproducibility and proper use of the PIARC reference tyre for skid resistance testing

► Skid resistance and texture
  To provide guidance on managing skid resistance:
  Equipment comparisons, calibration methods, interpretation and use of results

► Evenness
  To provide guidance on longitudinal and transverse evenness measurements and assessment

PIARC Technical Committee TC 4.2 – Road/vehicle Interaction

Working group C

Output - Deliverables

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Updated inventory of skid resistance testing equipment</td>
<td>July 2005 (delayed)</td>
</tr>
<tr>
<td>Guidance of managing skid resistance</td>
<td>September 2006/ Autumn 2007</td>
</tr>
<tr>
<td>Guidance of managing evenness</td>
<td>December 2006/ Autumn 2007</td>
</tr>
<tr>
<td>Strategy for long-term production of test tyre</td>
<td>December 2005</td>
</tr>
<tr>
<td>Establish user group for PIARC tyres</td>
<td>December 2004</td>
</tr>
<tr>
<td>Guidance on use and storage of tyres</td>
<td>March 2005</td>
</tr>
<tr>
<td>Representativeness of PIARC test tyre</td>
<td>March 2006 and autumn 2007</td>
</tr>
<tr>
<td>Formalise specification on test tyres</td>
<td>December 2004</td>
</tr>
</tbody>
</table>
Working group D
Distress measurements
Leader: Mr Michel Boulet, France

Sub groups:

► Inventory of the methods to detect, to identify and to precisely describe roads cracks etc. with the aim to increase the reproducibility of their measurements
► Setting up a method or procedure to assess and to clarify the crack automated measuring devices with respect to their reliability (bias and repeatability)
► Inventory of the methods to characterise and to record surface distresses on unpaved roads, and of the appropriate survey equipment

Working group D
Output - Deliverables

Technical report: Synthesis of existing methods to surely identify and to precisely describe road surface distresses  May 2007
Article R/R – State of the art report : Characterisation of unpaved road surface distresses, state of the art of the current practices to survey unpaved road surface condition  August 2006
Working group E
Advanced Road Works Acceptance Methods and Criteria
Leader: Dr. John Emery, Canada

Sub groups:
► Review of current practice
► Performance-based surface condition measurements
► Acceptance of road works and monitoring

Working group E
Output - Deliverables

| Survey on current practices                      | End March 2006 |
| Synthesis and evaluation of survey               | August 2006    |
| Reporting of survey and synthesis                | Fall 2007      |
| User friendly Guide – Surface condition measurements for acceptance of Road Works | Fall 2007      |
Interaction with other organisations

Tyre and Vehicle industry

ETRTO, The European Tyre and Rim Technical Organisation

FISITA, The International Federation of Automotive Engineering Societies

Standardization organisations

ISO, ASTM, CEN
Je vous souhaite une conférence intéressante et agréable ici à Bamako.