Hydrogen Vehicle Standards

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Standardization landscape

- ISO/TC 197
- ISO TC58
- IEC TC 105
- IEC TC 69
- SAE Fuel Cell Committee
- ISO TC 22 SC 21

Joint scope of work:
- vehicle safety
- vehicle performance
- energy consumption
- emissions

Decision makers in suppliers industry
National mirror organizations

SAE proposed liaison with ISO TC22 SC21

Have accepted a safety strategy as guideline for an international safety standard also qualified for type approval

Road Vehicle Manufacturers & Energy suppliers for Fuel Cell Vehicles
PROBLEMS

• The need for standards as perceived by the industry
• The concordance between standards and regulations
• The interaction with ongoing projects
• Vehicle and standard development aspects
Vehicle design and manufacturing

- Standardization bodies:
  - ISO TC22 SC21 WG1 (Safety)
  - ISO TC22 SC21 WG2 TF2 (Terminology)
  - IEC TC69

- Interaction with EU programmes:
  - FUERO
  - ELEDRIVE
System and components

- Standardization bodies:
  - IEC TC105
  - ISO TC197
  - ISO TC58

- Interaction with EU programmes:
  - ELEDRIVE
  - ASTOR
  - LIBERAL
  - EIHP

- Needs for interaction with regulation
  - Regulation on power measurement (ECE R85)
Testing reference conditions

- **Standardization bodies:**
  - ISO TC22 SC21 WG2 TF1

- **Interaction with EU programmes:**
  - FUEVA
  - FCTestNet

- **Needs for interaction with regulation**
  - National and regional harmonization
  - Definition of reference cycles for global use
Road performance measurement

- Standardization bodies:
  - ISO TC22 SC21 WG1 TF1

- Interaction with EU programmes:
  - FUEVA

- Needs for interaction with regulation
  - Regulation ECE R68
Energy consumption measurement

- Standardization bodies:
  - ISO TC22 SC21 WG1 TF1

- Interaction with EU programmes:
  - FUEVA
  - FCTestNet

- Needs for interaction with regulation
  - Regulation ECE R101
Emission measurement

- Standardization bodies:
  - ISO TC22 SC21 WG1 TF1

- Needs for interaction with regulation
  - Regulation ECE R83
Safety aspects (reliability)

- Standardization bodies:
  - ISO TC22 SC21 WG1
  - IEC TC69

- Interaction with EU programmes:
  - HYNET
  - HYSafe

- Needs for interaction with regulation
  - New regulation!
User appreciation

- Interaction with EU programmes:
  - CUTE
  - ECTOS
Energy consumption measurement

• Standardization bodies:
  • ISO TC197
  • ISO TC22 SC25

• Interaction with EU programmes:
  • CUTE
  • ECTOS

• Needs for interaction with regulation
  • Standard interface definition
Economical aspects

• Operational cost

• Well to Wheel and Life Cycle Analysis

• Interaction with EU programmes:
  • CUTE
  • ECTOS
  • FUERO
Needs

• Global collaboration
  • Europe
  • USA
  • Japan
• Interactions between projects
• Definitions of the needs of the industry
• Towards a future GTR:
  • This should reproduce or refer to ISO/IEC Standards!
  • “New approach” philosophy?
• Proposed interaction network
Supportive Actions

• Workshop reuniting relevant actors
  • ISO
  • GRPE
  • ...
• Promotion of global collaboration
• To be organised early 2004
• Proposed as SSA
Global conclusions

• The need for:
  • Standardization
  • Harmonization
  • Collaboration!