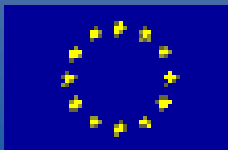


ELEDRIVE

**Thematic Network on Fuel Cells
and their applications
for Electric & Hybrid Vehicles**

1.12.2000 – 30.11.2003



AVERE



Partners

•Industry

- Alstom Transport
- CRF (Fiat)
- Electrabel
- IFP
- PSA
- Renault
- Saft
- Volvo
- Zevco

•Associations

- AVERE
- CITELEC
- ENGVA
- World fuel cell council

•Research

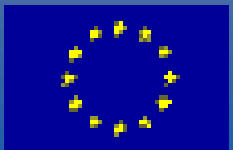
- AEA
- CEST
- DITS
- ECN
- EIVD
- EMD
- ENEA
- FKA
- IKA
- TNO
- VKA
- VUB

•National representatives

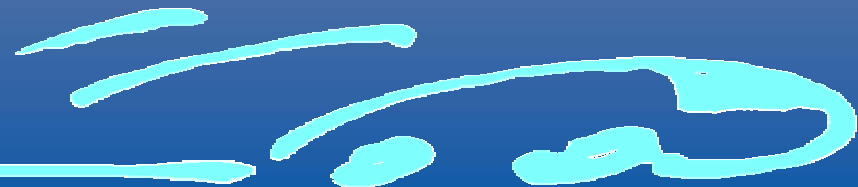
- APVE (PT)
- AVERE-Fance (FR)
- CIVES (IT)
- DGES (DE)
- E-Mobile (CH)
- HEL.I.E.V. (GR)
- Norstart (NO)
- NOVEM (NL)
- SWEVA (SE)

•Others

- ADEME
- Intema Consult



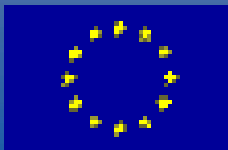
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WP5: Legislation & standardization trends CITELEC

Collecting information about the legislation and standardisation activities, which may be of benefit in the development and diffusion of fuel cells and their applications to the electric and hybrid vehicles.

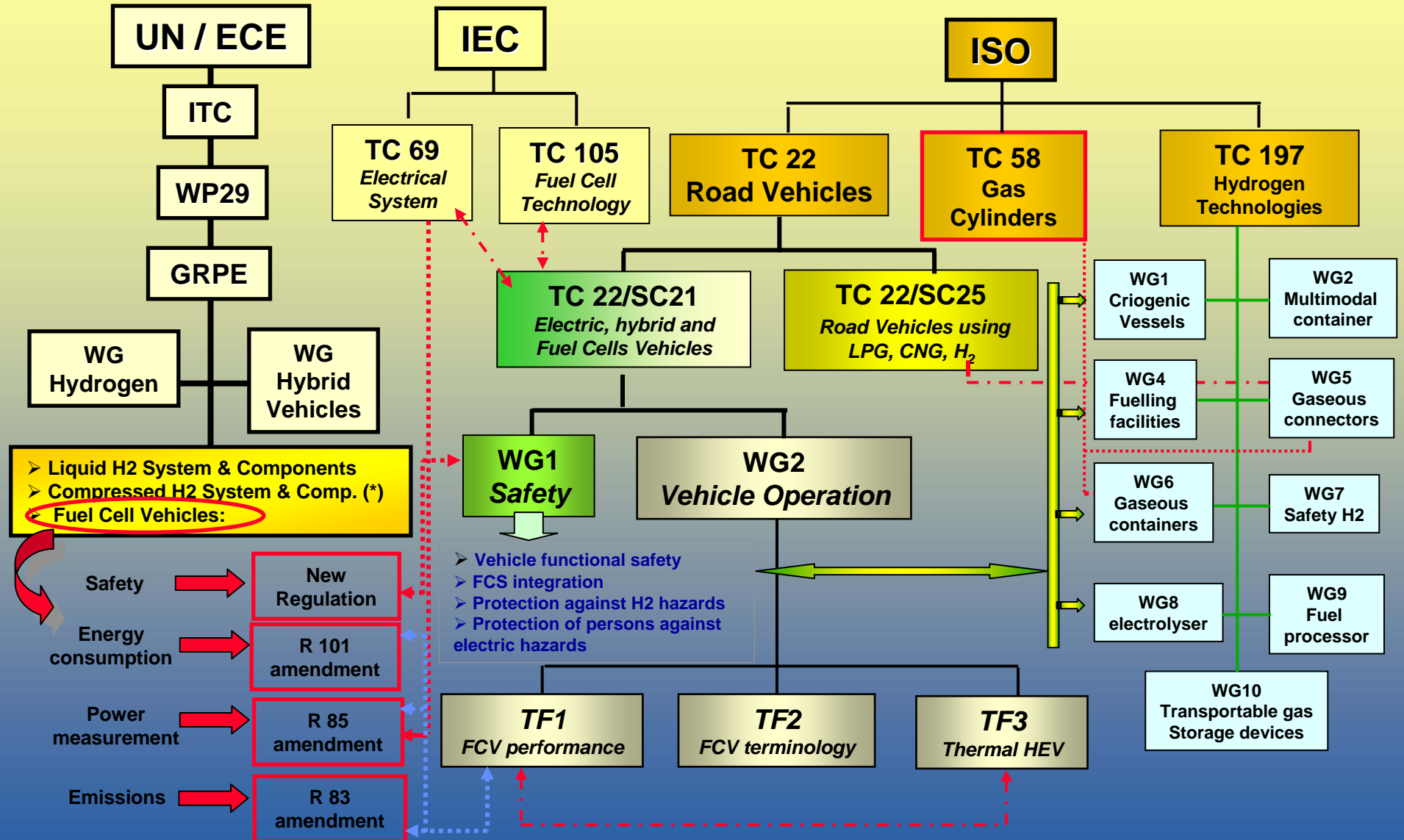
The variety of participants in the network was an asset to combine expertise, institutional and technical roles in many national and international bodies to “feed” ELEDRIVE with a huge amount of information about the trends of legislation and standardisation.



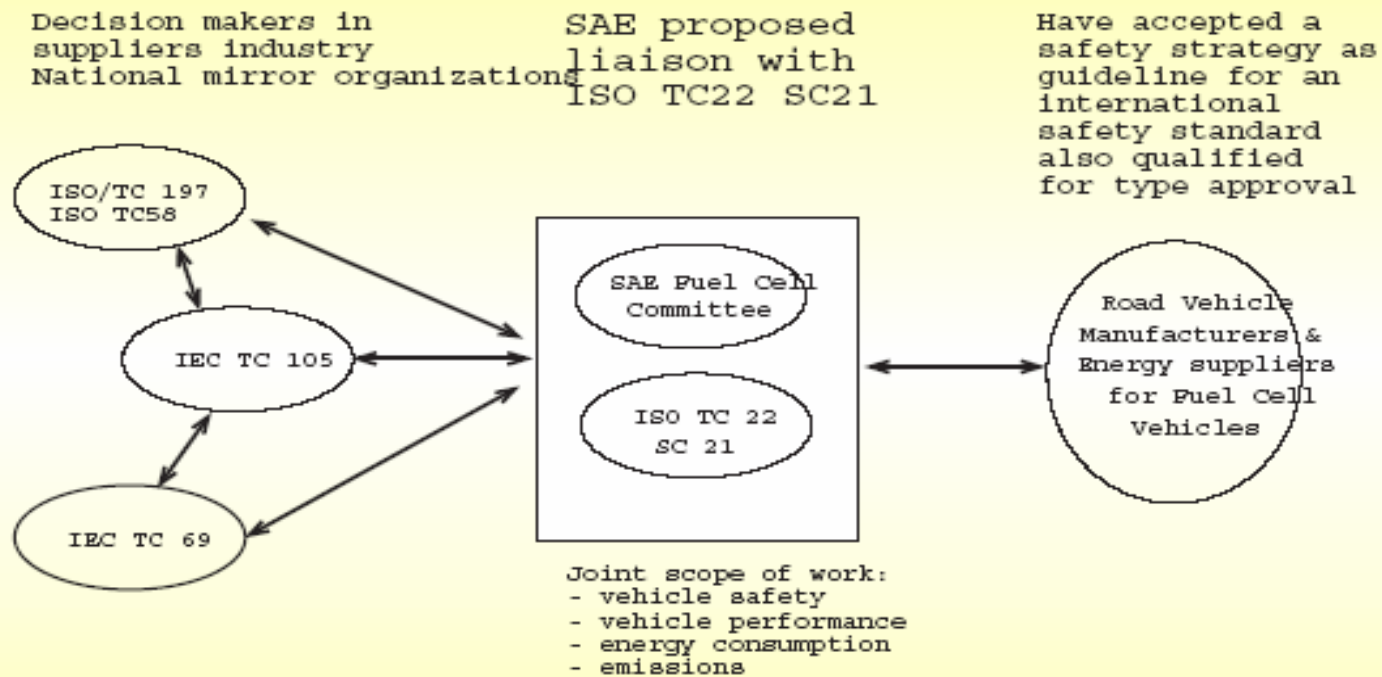
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Structure and links



Standardization landscape



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:
 - HYPNET
 - 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

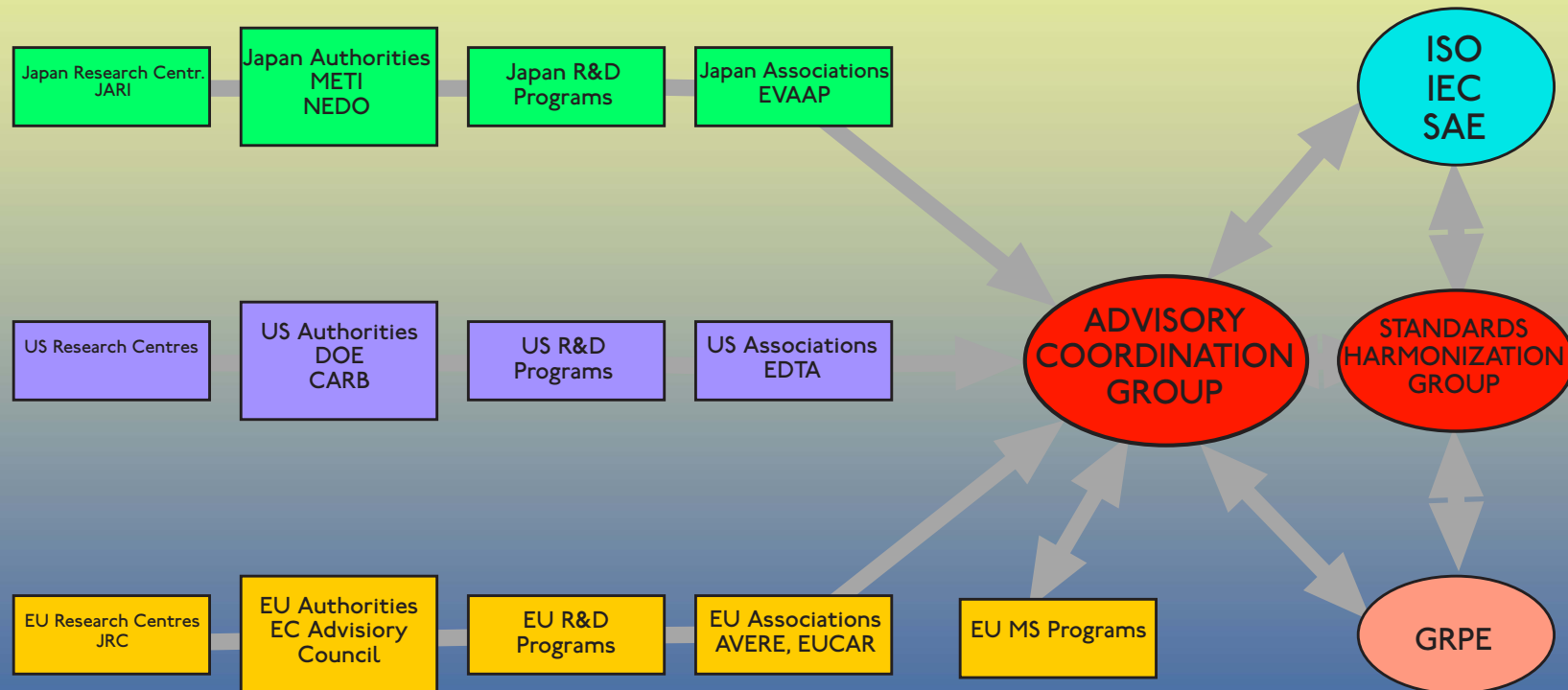
Economical aspects

- 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

Cooperative Interaction



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 !