



## Regulations and Standards for H<sub>2</sub> & FC in Europe

Hydrogen and Fuel Cell Technology Platform

First General Assembly

Brussels 20-21 January 2004

2nd Day, 21 January 2004, - Building the Platform II

Session B-3 "Regulations and Standards"

Preliminary Recommendations to the Advisory Council

Regulations and Standards for Hydrogen & Fuel Cells in Europe

Brussels 21 January 2004



## Recommendations

- We need a permanent group of experts, with a long-term mandate and commitment, for continuous work on regulatory and standardisation matters related to hydrogen and fuel cells: identified lack of resources
- Commitment from industry and member states and the European Commission
- Use existing knowledge and existing experiences from demonstration projects as well as from ongoing regulatory and standardisation activities
- Do not re-invent
- Use the resources where the real gaps are (technical issues have not been identified as a real gap, rather co-operation and co-ordination)
- Europe needs to speak up with one voice in order to be taken seriously (especially in the international arena)
- European pre-normative RD should continue supporting standardisation activities



Current lack of harmonised and validated performance characterisation procedures is a significant barrier for

- acceptance and application of proposed standards
- objective evaluation of R&D results
- evaluation of technical progress

It is hence essential to

- bundle and harmonise European activities on fuel cell testing  FCTESTNET, ...
- subsequently validate them for
  - licensing
  - quality assurance/certification,...

*priorities in SRA of H<sub>2</sub>+FC TP: initiative group on C&S*

European Commission



The **F**uel **C**ell **T**esting  
and  
**S**Tandardisation **N**ETwork

**FCTESTNET**

An FP5 Thematic Network funded by the  
European Commission



# FCTESTNET

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## Objectives

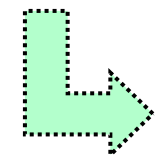
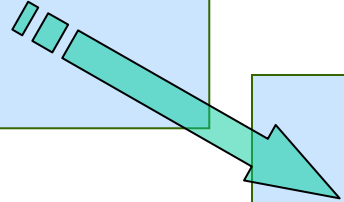
- Compile and harmonise testing procedures for fuel cells, stacks and systems
- Initial assessment of FC systems against user requirements for stationary, portable and transport applications

- IEC TC105
- ISO TC 197
- CEN/CENELEC
- OTHER INT'L. ACTIVITIES



## Deliverables

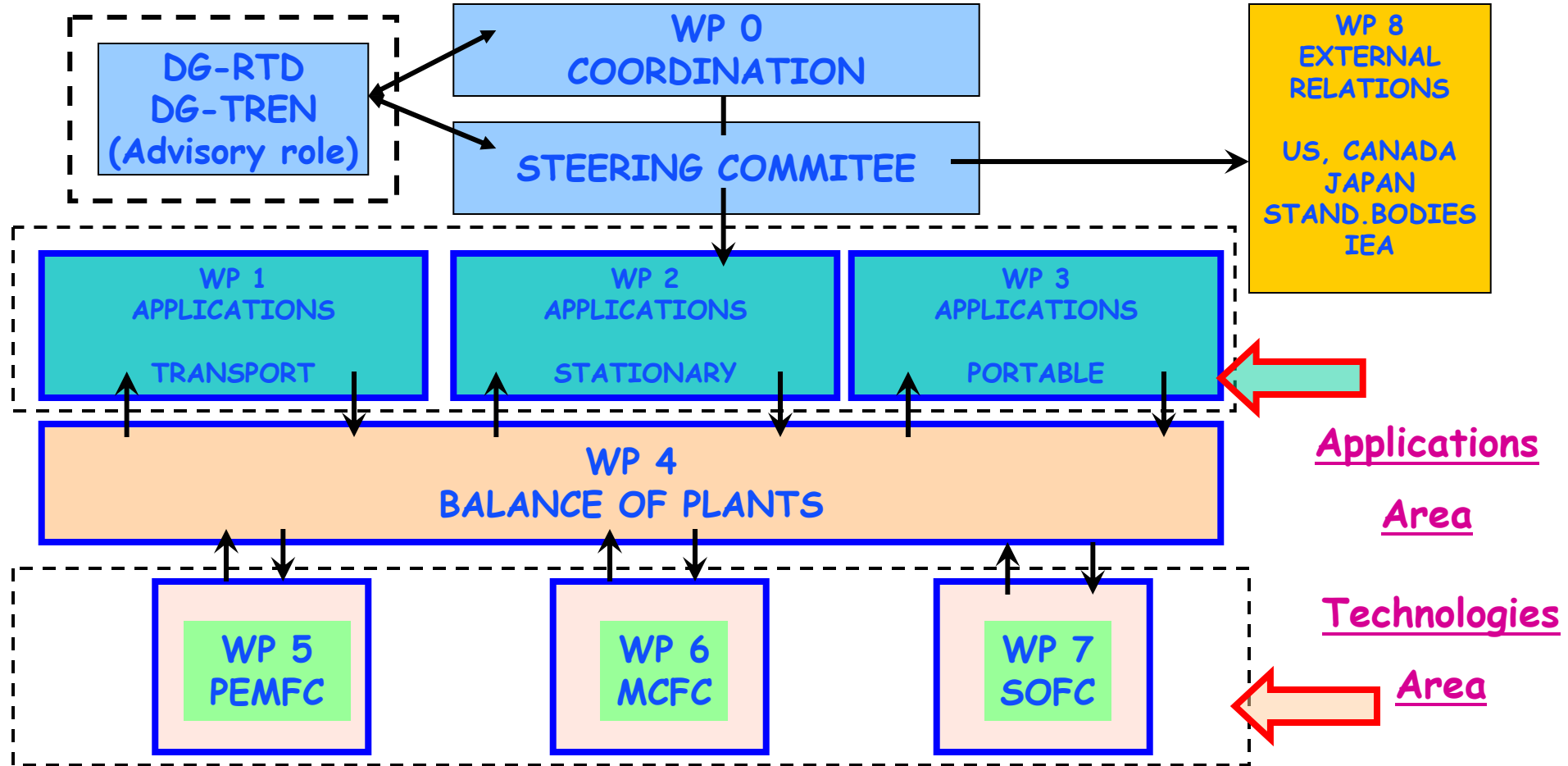
- Compilation of testing protocols & methodologies
- Agreed proposals for harmonisation



*Further work*

# FCTESTNET STRUCTURE

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# DELIVERABLES

- Map of testing competencies around Europe
- Common measurement criteria
- Methodologies for testing procedures
- Agreed harmonised approaches
- Support to policy formulation within the EC
- External contacts

- Exchange of information and collaboration with
  - *relevant extra-EU networks and institutions (e.g. IEA, IPHE)*
  - *international SDOs*

- Inventory (mapping) of
  - *industries, institutes and consortia involved in FC development, research and demonstration*
  - *commercialisation targets and strategies*
  - *collaborative links*

## Way Forward:

*Address the continued need for*

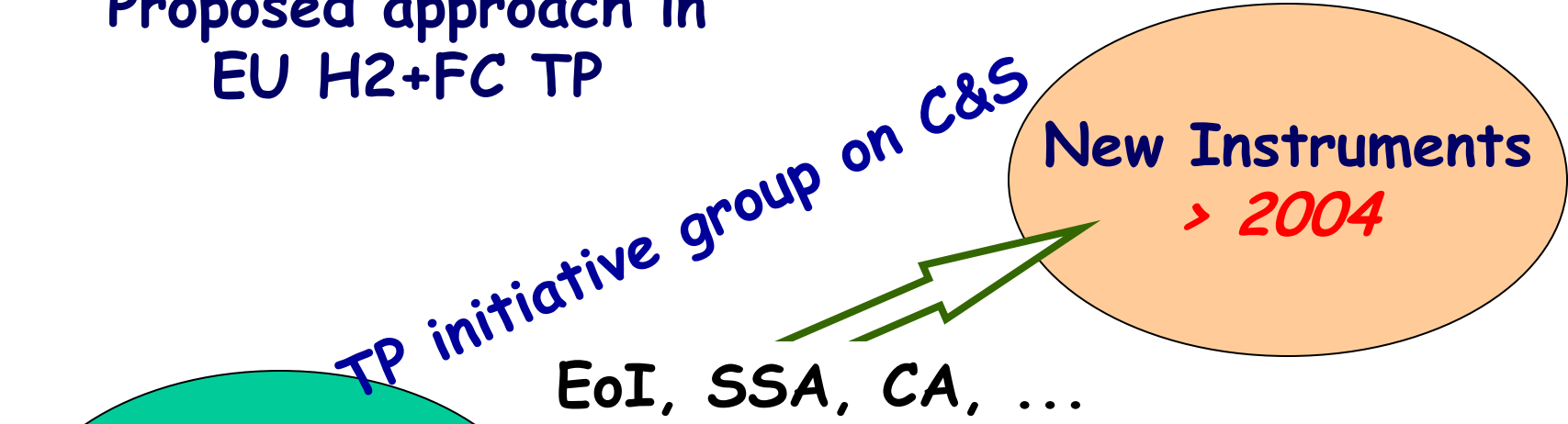
harmonisation of

- quality assurance standards, ← QA specifications
- evaluation methods ← validated experimental data
- test procedures ← validated experimental data



# Proposed approach in EU H2+FC TP

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EoI, SSA, CA, ...

**FCTESTNET**  
*FP5 THEMATIC NETWORK*

Validation & Benchmarking of procedures and methodologies for testing, safety and quality assurance

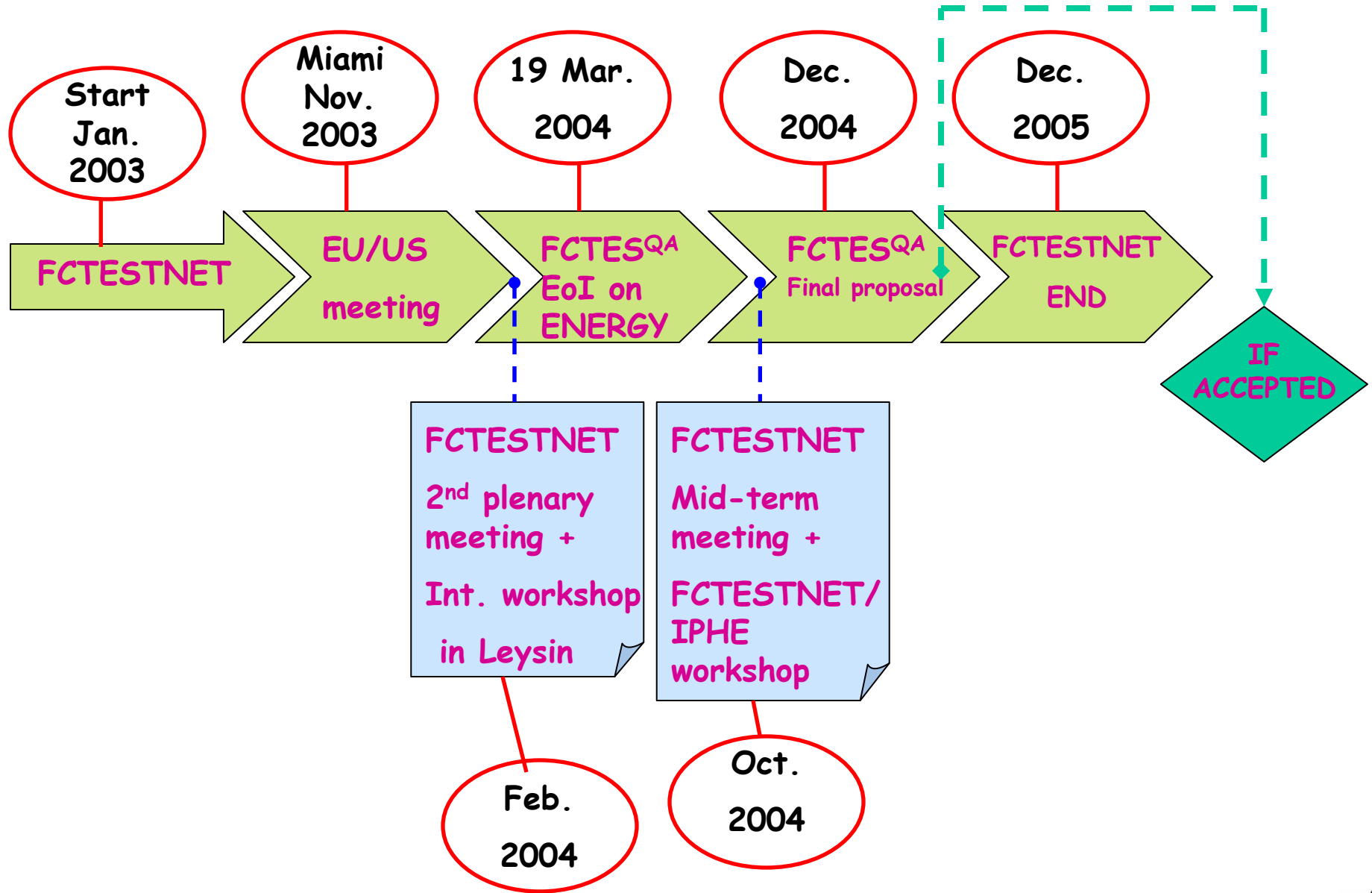
Harmonisation of testing procedures and methodologies



Input of PNR-  
results to SDOs

# SUGGESTED ROADMAP

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**AGENDA**  
**FRIDAY 27<sup>th</sup> FEBRUARY 2004**

**Joint Research Centre**

<b>PLENARY SESSION</b>		
09:00	Welcome, Introduction and background to meeting	Georgios TSOTRIDIS EU-DG JRC-IE
09:15	EU Hydrogen Platform	Antonio PAPARELLA EU-DG RTD
09:45	Review of FC testing activities in US	Patrick Davis US-DoE
10:15	The activity of deregulation and Standardization for Stationary PEFC System in Japan	Hiroshi YAMADA Japan Gas Association
10:45	Coffee break	
11:15	Survey of standards and regulations for fuel cell applications in the transport sector	Mario CONTE ISO-ENEA
11:45	Review of FC testing activities	Heinz Nabielek Forschungszentrum Julich-IEA
12:15	International standardization activities within IEC TC 105	Wolfgang WINKLER IEC-TC 105
12:45	Lunch	



AGENDA  
FRIDAY 27<sup>th</sup> FEBRUARY 2004 (cont.)

<b>WP leaders and Guests Session</b>		
14:30	Review of FCTESTNET activities	Georgios TSOTRIDIS EU-DG JRC-IE
14:45	Discussion on collaboration between FCTESTNET and programs outside Europe	WP leaders only + Guests
16:15	Coffee break	
16:30	Discussion on collaboration between FCTESTNET and programs outside Europe	WP leaders only + Guests
17:30	List of Actions (Critical Path)	WP leaders only + Guests
18:00	End	

*Common view that 1<sup>st</sup>. Int. Workshop was quite successful.*

Follow-up:

### PHASE 1

- DoE/US will actively participate in the FCTESTNET meetings.
- FCTESTNET will send to DoE and to Japan terminology questionnaire (of expressions used in FC testing) for comments and further consultation.

### PHASE 2

FCTESTNET and US will be involved in commenting the reports on testing procedures and testing methodologies, so the final report has the approval of both parties. (Japan will be involved, but not yet decided how).

### PHASE 3

DoE/US supports the idea of FCTESTQA and that they (US alone or in conjunction with IPHE) perform similar validation, benchmarking exercises.

2<sup>nd</sup> Int. Workshop will be co-organised by IE/DoE (use both logos), and probably by JARI. The local organiser will be ZSW, and the meeting will take place in October.

# VISION

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