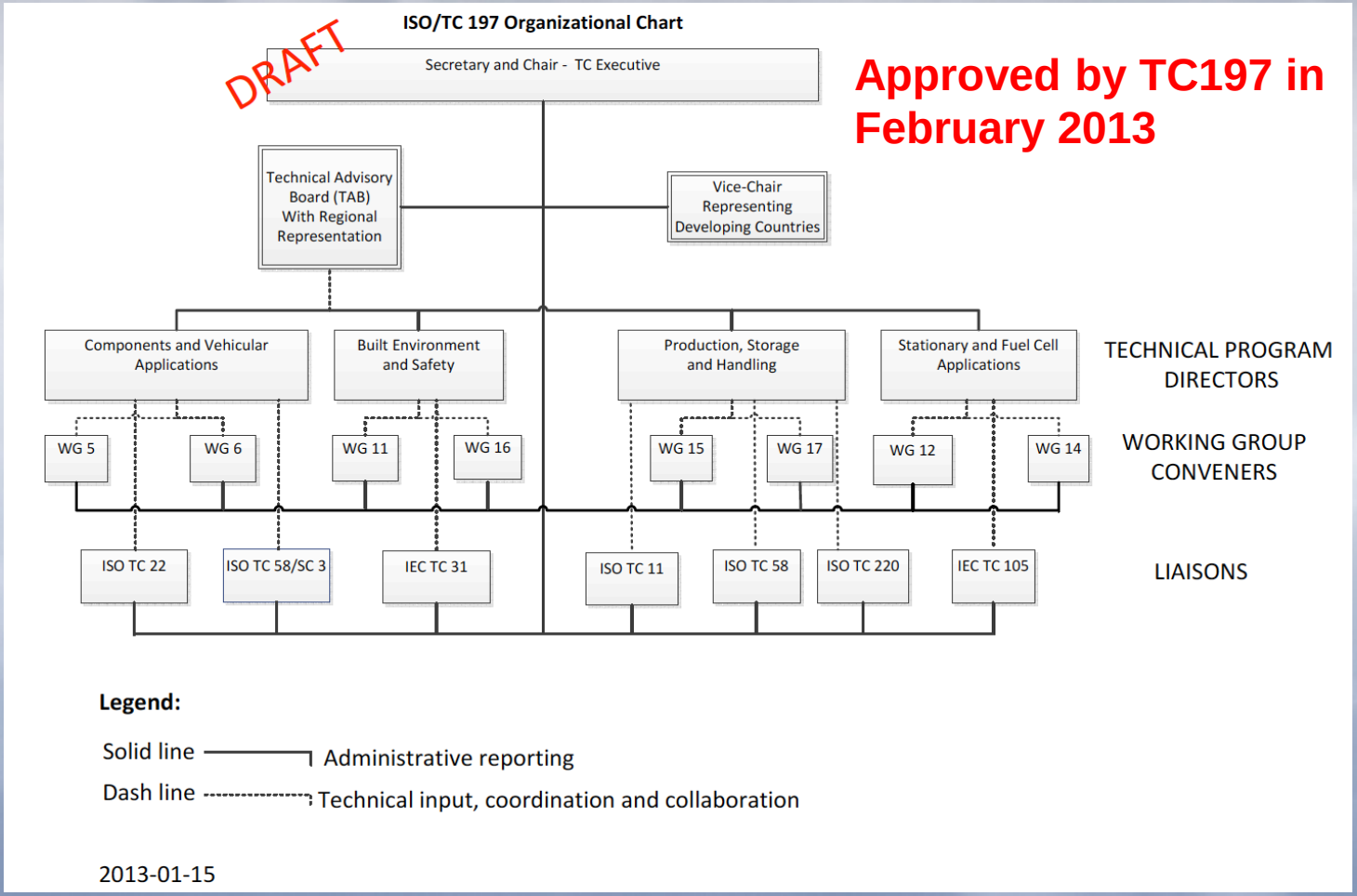
ISO/TC 197
International Standardization Efforts

Andrei V. Tchouvelev, Chair

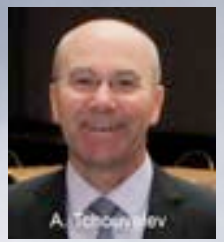
"We can't solve problems by using the same kind of thinking we used when we created them." **Albert Einstein**

ISO/TC 197 Scope and Structure

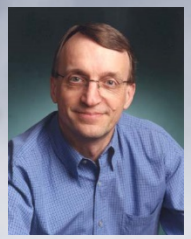
Standardization in the field of systems and devices for the production, storage, transport, measurement and use of hydrogen.



ISO/TC 197 Technical Advisory Board (TAB)



Andrei Tchouvelev,
Chair



Jim Ferrero,
Secretary

Zong Qiang Mao,
Vice-Chair for Developing Counties

Herve Barthelemy,
TPD of Production, Storage and Handling

Jay Keller,
TPD of Built Environment and Safety

Kazuo Koseki,
TPD of Stationary and FC Applications

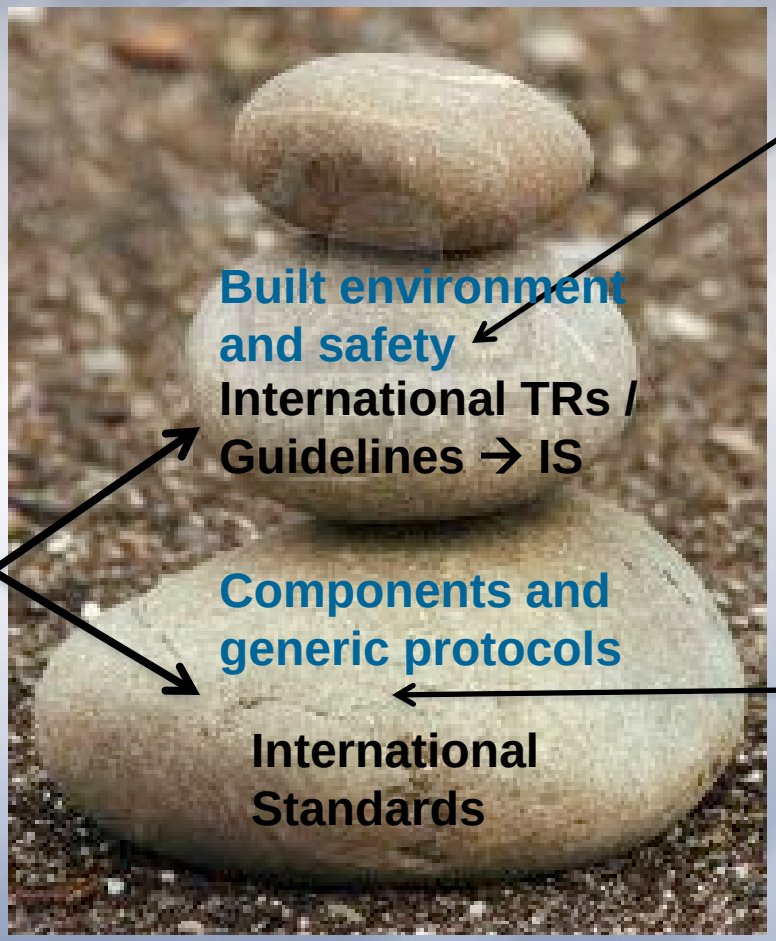
Craig Webster,
TPD of Components and Vehicular Applications

ISO/TC 197 Program Structure and Approach for 2013-2015

Approach to BE&S:
- ❑Map knowledge and best practices
- ❑Identify knowledge gaps
- ❑Trigger PNR
- ❑Build international collaboration
- ❑Time: 12 – 24 mo

ISO/TC 197 focus

Approach to Comp:
- ❑Well developed seed documents
- ❑Industry validation and strong need
- ❑Time: 12 – 36 mo



Built Environment and Safety:
- ❑ WG16 Safety TR
- ❑ WG24 HFS
- ❑ WGxx (FP-TBD)

Components and Vehicular Applications:
- ❑ WG 18 On-board St
- ❑ WGs 19-20, 22-23

Production, Storage and Handling:
- ❑ WG15 Ground St
- ❑ WG17 PSA
- ❑ WG21 Compressors

Stationary and Fuel Cell Applications:
- ❑ WG12/14 (H_2 quality)
- ❑ WGxx (FQV-TBD)

19880 Fueling Family

- ISO/WD 19880-1 Gaseous hydrogen – Fueling stations – General requirements (WG24)
- ISO/WD 19880-2 Gaseous hydrogen – Fueling stations – Dispensers (WG19)
- ISO/WD 19880-3 Gaseous hydrogen – Fueling stations – Valves (WG20)
- ISO/WD 19880-4 Gaseous hydrogen – Fueling stations – Compressors (WG21)
- ISO/WD 19880-5 Gaseous hydrogen – Fueling stations – Hoses (WG22)
- ISO/WD 19880-6 Gaseous hydrogen – Fueling stations – Fittings (WG23)
- ISO 19880-7 Gaseous hydrogen – Fueling stations – Fueling protocols (Proposed TBD)
- ISO 19880-8 Gaseous hydrogen – Fueling stations – Fuel quality verification methods (Proposed TBD)

Other Relevant Standardization Efforts

Components and Vehicular Applications

- **ISO 17268:2012 Gaseous hydrogen land vehicle refueling connection devices – Proposal for revision pending**

- **ISO/WD 19881 Gaseous hydrogen – Land vehicle fuel tanks (WG18)**
- **ISO/WD 19882 Gaseous hydrogen – Thermally activated pressure relief devices (WG18)**

Built Environment and Safety

- **ISO/PDTR 15916:2014 Basic considerations for safety of hydrogen systems (WG16) Publication imminent**
  - **Will replace the original ISO/TR 15916:2004**

Other Relevant Standardization Efforts

Hydrogen Production, Storage and Handling

- **ISO 22734-1:2008 Hydrogen generators using water electrolysis process – Industrial and commercial applications – Proposal for revision pending**
- **ISO 22734-2:2011 Hydrogen generators using water electrolysis process – Residential applications**

- **ISO 16110-1:2007 Hydrogen generators using fuel processing technologies – Safety**
- **ISO 16110-2:2009 Hydrogen generators using fuel processing technologies – Test methods for performance**

Other Relevant Standardization Efforts

Hydrogen Production, Storage and Handling (cont.)

- **ISO/WD 19883 Safety of pressure swing adsorption system for hydrogen separation and purification (WG17)**

- **ISO/CD 19884 Gaseous hydrogen – Cylinders and tubes for stationary storage (WG15)**

- **ISO 16111:2008 Transportable gas storage devices – Hydrogen absorbed in reverse metal hydride – NWIP for revision submitted**

Other Relevant Standardization Efforts

Stationary and Fuel Cell Applications

- **ISO 14687:1999 Hydrogen fuel – Product specification**
- **ISO 14687:2012 Hydrogen fuel – Product specification, Part 2: PEM fuel cell applications for road vehicles**
- **ISO 14687:2014 Hydrogen fuel – Product specification, Part 3: PEM fuel cell applications for stationary appliances**
  - **PWI approved for harmonization of Parts 2 and 3, and potentially fuel quality verification at fueling sites**

THANK YOU FOR YOUR ATTENTION!

Questions / comments welcome!