

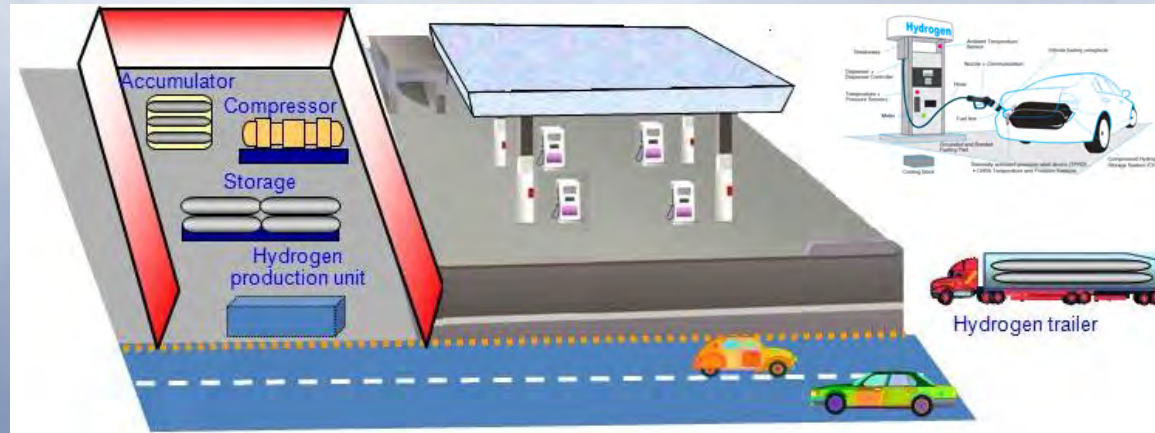
GTR Phase 2 on FCEV
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TF5 ISO/TC 197 Recommendations
Interface Topics for Consideration

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With input from Nick Hart and EIGA WG11



Topic 1 – Interface / Interoperability

Section D, 1 Rationale for scope, Para. 35 on page 12: “This gtr does not address the requirements for the fuelling station or the fuelling station/vehicle interface”. **Q: Is this sentence needed?**

Yet, page 25 of the Preamble directly refers to SAE J2601:

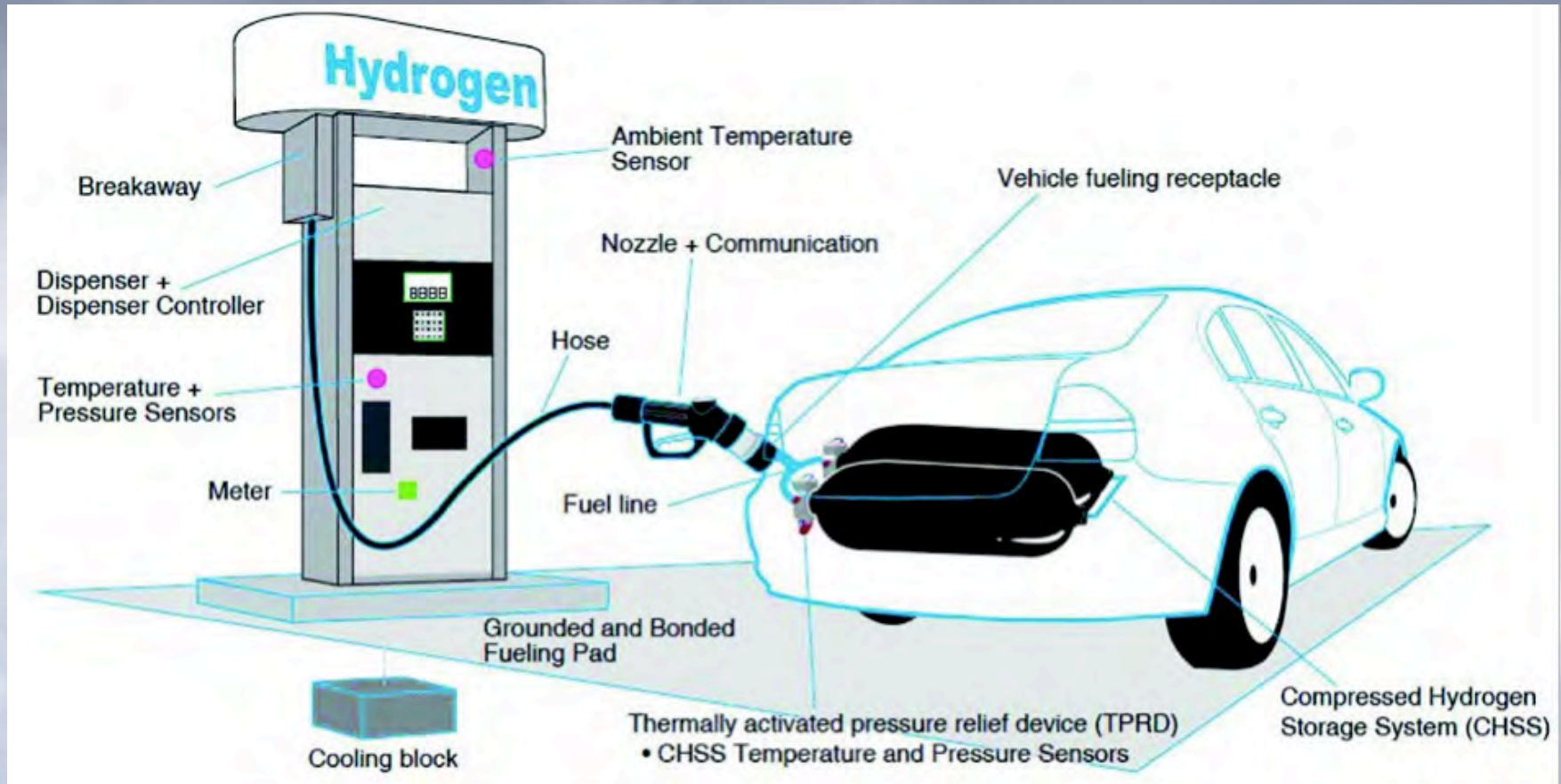
(c) Rationale for paragraph 5.1.3. verification test for expected on-road performance (pneumatic sequential tests)

Para 63, (b) Leak-free fuelling performance (para. 5.1.3.2.)

iii) Fuelling conditions

a. SAE J2601 establishes fuelling protocol — 3 minutes is fastest empty-to-full fuelling (comparable to typical gasoline fuelling; existing in installed state-of-art hydrogen fuelling stations); fuel temperature for 70 MPa fast fuelling is ~ -40 °C;

Topic 1 – Interface / Interoperability



It makes sense inserting into Preamble the above image explaining the key interoperability features of Station – H2 vehicle interface.

Interoperability – Issues to Address in GTR

- ❑ HRS assumes that a receptacle pressure rating matches vehicle CHSS pressure rating (ref. to TF2);
- ❑ The receptacle mounting must be able to withstand at least 1000 N force. (ref. ISO 19880-1, cl. 8.3.4.1)
- ❑ Vehicles CHSS shall be able to safely be depressurised to a pressure of 0.5 MPa (ref. ISO 19880-1, cl. 8.2.1.2)
- ❑ Vehicles CHSS shall be able to safely accept at least 10 pauses during fuelling where the fuel flow rate drops below 0.6 g/s (ref. ditto)
- ❑ There is no safety factor for temperature (while there is safety factor for pressure) (ref. to TF3)
- ❑ Overtemperature due to station fault is NOT taken into account (while overpressure is) (ref. to TF3)
- ❑ Recommend SAE J2799 for communication, and CSA/HGV-4.3 for dispenser functionality testing (ref. ISO DIS 19880-1).

Topic 2 – Interface / Non-compliant-GTR Cars

Introduction

**ISO/FDIS 21266-1 developed by ISO/TC22/SC41
Not applicable to FCEVs, but applicable to H2 ICEs**

For the purposes of this document, all fuel system components in contact with natural gas have been considered suitable for compressed gaseous hydrogen (CGH₂), in accordance with ISO 14687-1 or ISO 14687-2, and hydrogen/natural gas blends using natural gas, in accordance with ISO 15403-1 and ISO/TR 15403-2.

When applying this document, it should be understood that a safety device to prevent overfilling the vehicle's fuel system is part of the fuelling station. The pressure gauge has not been considered as a safety component.

When necessary, technical solutions regarding functional requirements are given in this document, as in [Annex A](#).

This document refers to a service pressure of 20 MPa.

NOTE This document is based on a service pressure for compressed gaseous hydrogen (CGH₂) and hydrogen/natural gas blends as fuels of 20 MPa settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, pressures to be multiplied by 1,25 for a 25 MPa service pressure system.

Such H2 or H2/NG ICE cars will refuel at public H2 stations, but they are not compliant with GTR13. They may have improper receptacle or CHSS pressure ratings!

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