



ISO/TC 197
Hydrogen technologies

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JWG 7 report to ISO TC 197 (Dec 2016)

Document type: Other meeting document

Date of document: 2017-11-25

Expected action: INFO

Background: Report for the 2016 plenary.

Committee URL: <http://isotc.iso.org/livelink/livelink/open/tc197>

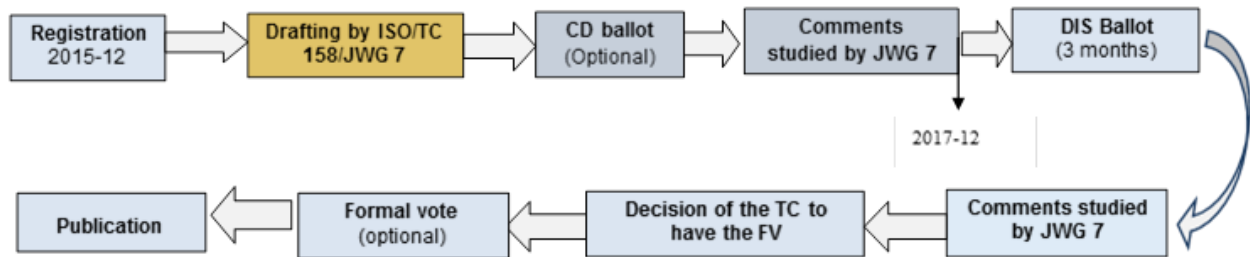


JWG 7 report to ISO/TC 197

For the plenary meeting of ISO/TC 197 to be held on 8th December 2016

Reporting period: January 2016 - December 2016

- This working group is in charge of the preparation of the standard for analytical methods (ISO 21087) to be used for assuring the quality of H₂ according to existing ISO 14687-2
- **Title of ISO 21087** : Hydrogen fuel -- Analytical methods -- Proton exchange membrane (PEM) fuel cell applications for road vehicles
- Work in coordination with WG 28 , WG 24 and WG 27 (following the revision of ISO 14687)
- The timing is described below:



CD : 2017 – 06 (target)

DIS: 2017 – 11 (target)

IS publication: 2018 - 12



Three meetings of WG 7 have been held during the reporting period.

1) On 20 and 21 April 2016 the WG had a meeting at California Air Resources Board, Sacramento, California.

This meeting was the first one of the Working group and the first point on the agenda was to define the objectives of WG 7 and the coordination with ISO TC 197 WG 24, WG 27 and WG 28. It was accepted to follow the impurity component specs of published ISO 14687-2 and to define the validation of analytical methods adapted to these measurements.

Then, several presentations of the analytical methods used in US, Europe and Japan were done by the participants. This overview was used to define the scope and the outline of the new document WD 21087 with the following title: “Hydrogen fuel — Analytical methods — Proton exchange membrane (PEM) fuel cell applications for road vehicles”

Two lab tours were also organized in DMS Lab and Smart Chemistry lab.

2) On 1st July 2016 the WG had the second meeting at Linde site, Munich, Germany.

During the discussion the following statements were made with respect to the drafting of the JWG 7 standard:

- present the freedom to use an appropriate analysis method
- focus on lab analysis after on site sampling and not on line monitoring.
- contain information about the way to check the analysis method in order to obtain confidence in the measurement result in laboratory
- contain explanation for the determination of LoD (Limit of Detection) and LoQ (Limit of Quantification)
- clearly highlight the fact that each measurement result has to be accompanied by a measurement uncertainty statement. Indeed, currently this is already required in the USA to show compliance to quality regulation (SAE J2719) and uncertainty should be taken into account.



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- Sampling, with the emphasis on safety issues, is part of WG 24. Sampling with respect to keep the integrity of the sample (e.g. concerning cylinder inner wall treatments, passivated transfer lines & valves, and so on), for the whole analysis chain from sampling site up to feeding the sample into an analyzer, is part of JWG 7.

3) On 5th December 2016 the WG had the third meeting at Shell site, Amsterdam, Netherlands.

The target of this third meeting was to have agreement for:

- Calculation of Limit of detection and limit of quantification.
- Acceptable uncertainties for the measurements including the ones near the detection limits
- Discussion about the list of potential analytical methods

Presentations were done on NPL activities in developing new analytical methods and on results of H2 quality in several HRS in Europe from HyCoRA project.

Next steps:

Write a first draft document for the end of February

Next meeting end of May (date and location to be confirmed)