



ISO/TC 197
Hydrogen technologies

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DRAFT Meeting Minutes:
ISO/TC 197 – Hosted by AFNOR in Grenoble (France)
Plenary held Dec 12th-13th 2019

Agenda Item (N1112)	Comments and notes	Resolution Number (N1121)	Related N Doc Number
1	<p>Opening of the meeting</p> <p style="text-align: right;"><i>Meeting opens at 9:05 AM</i></p> <p>A special introductory thanks is given to M. Pierre Serre-Combe who has been essential in organizing the location and the event.</p>		
2	<p>Introduction and roll call of the delegates and delegation. A sign-in sheet is circulated.</p>		N1124
3	<p>Adoption of the agenda. The chair reads all items of the agenda.</p> <p>The chair mentions the importance of item 7 and the opportunity to discuss liaisons.</p> <p>Known NWIPs to be presented on item 10 are summarized.</p> <p>The chair comments on item 12.1 and the importance of the vote.</p> <p>The chair emphasizes the importance of voting dispassionately and describes the mechanisms and consequences of voting.</p> <p>The chair also reminds the TC to also consider the issues of timing and available resources.</p> <p>The char briefly reviews the announcement related to the 19884 document and the changes in votes.</p> <p>The chair discusses that Japan would like to present in item 12.2, and invites other countries to see the committee manager with presentations if they would like to contribute.</p> <p>The chair reminds the TC the importance of finishing at 13:30 on the 13th due to the site visit of the Air Liquide installation.</p> <p>No comments from the TC.</p>		N1112 N1085 N1087
4	<p>Approval of the resolution drafting committee The TC agrees to establish a resolution drafting committee and appoints 4 members: Karen Quackenbush, Jim Ferrero, Frédéric Solbes, and Nick Hart.</p> <p>The Chair indicates to the TC that the resolutions will be voted on during the plenary and will be reviewed on-screen at the end of Day 2.</p>	R.456	

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5	<p>Approval of the Vancouver meeting minutes.</p> <p>The TC approves the meeting minutes of the 2018 Vancouver meeting. Nick Hart raises the issue of editorial changes that were raised but never completed (e.g., using draft rather than final) in the 2018 resolutions.</p>	R 457	N1078 N1080
6	Review of operational progress		
6.1	<p>Performance Evaluations.</p> <p>The Chair discusses the evaluation reviews. The reviews are subdivided as follows: The first reviews are for the 2018 Chair, TAB, and Committee Manager. The reviews of the 2019 Chair, TAB and Committee manager are discussed by the Chair. TAB visibility will increase with NWIPs.</p> <p>The chair indicates the difficulties related to the WG15, and makes further comments on the discussions and exchanges held with the Secretary and the BNQ; the Chair indicates that he believes that the work and availability issues have been resolved.</p> <p>The Head of the UK delegation emphasizes that the lack of communication on the part of the Secretary was significant, notably for the lack of circulation of the CEN ballot results.</p>		
6.2	<p>The reviews of the 2018 plenary and SPM meeting are also discussed. The chair indicates the importance of the SPM as a “big picture” meeting. The SPM will have minutes posted as well.</p> <p>The Chair indicates that the CIB Ballot related to the 2019 Plenary and SPM meetings will be posted shortly and will close in February 2020.</p>		
6.3	<p>Report from the Vice-Chair for Developing countries.</p> <p>The Vice Chair exposes the adoption of hydrogen technologies in developing countries, notably, China, Brazil, India, Russia, Malaysia, and Thailand.</p> <p>The Chair thanks the Vice-Chair and emphasizes the importance of this work including the aspects of other international organizations, and the interactions with other developing countries in international conferences. This also helps streamline communications.</p> <p>The Vice-Chair also emphasizes that cooperation, sharing, and harmonization of standards is key.</p>		N 1125

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	<p>logic and that where a WG is required prior to filing an NWIP.</p> <p>The TPM indicates that there is flexibility in grandfathering WGs with no projects.</p> <p>The clarity in WGs continuing vs stopping their work depends on if they have a clear pathway or not.</p> <p>The TPM explains that ISO is sensitive to the administrative step of disbanding a WG and the TPM can assist in trying to preserve the member list and the data.</p> <p>A question on the attendance is also raised in the ISO system where attendance can be confirmed, but delegates cannot confirm their NON attendance. The TPM takes note of this and will follow-up on this comment.</p> <p>The TPM advises the TC to be mindful of when projects are on the clock.</p>		
7.2	<p>Craig Webster discusses active WGS as TPD.</p> <p>The TPD provides updates for the following groups: WG 5 WG 18 WG 19 WG 22 WG 23</p> <p>For WG5 – the final ballot is currently open, publication is intended for Jan 2020.</p> <p>A comment from WG 18:</p> <p>19881: The intent of the revision is to include type 3 vessels. There may be an issues related to the test procedure for rupture and test requirements. They will meet in Japan in Feb 2020 to deal with comments and harmonize with GTR.</p> <p>M. De Réals from the French delegation makes a comment that the proposal should include inherent safe refuelling. The Chair agrees that yes, the intent is to include inherent safe refuelling. M. Quong from the US delegation comments that expertise for this is in the GTR group. The chair clarifies that there will be a consensus within the GTR before going to ISO.</p>		N 1128 N 1130 N 1129

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	<p>M. Scheffler from the US delegation makes comments on the type of standard issued – GTR is moving to performance-based standards which are generally not accepted in the US; indication that there are technical issues.</p> <p>M. de Réals comments on the intent to break the cycle: this may be an issue for ISO or SAE. The proposal is to expand the rationale.</p> <p>M. Scheffler expands on the technical issues related to all test methods for different types of pressure vessels and argues that the document excluded more than it should have.</p> <p>The chair explains that in 19881, type 3 vessels are excluded.</p> <p>The TPD argues that the document may not be as restrictive as M. Scheffler indicates.</p> <p>The discussion concludes that the NWIP is already in progress and will be presented by Mid 2020.</p> <p>For WG 19, the convenor indicates that the intent is to harmonize with 19880-1 and to wait until the 19880-2 document is advanced.</p> <p>When these items are addressed, the WG 19 work will be to adjust the document and the clock will restart after a CIB ballot and the proposal is to move the document directly to an FDIS ballot.</p> <p>WG19 will hold a meeting by id 2020 and late 2020, with the FDIS ballot to be launched by mid 2021.</p> <p>The convenor of WG22 presents the advancement of 19880-5 document and indicates that there were some editorial clarifications that were not corrected prior to publication. To correct for these changes, an amendment is required and the TC can resolve to begin work on this amendment. Subsequently, the intent is to begin on a revision.</p> <p>The convenor of WG23 indicates that the work on the CD has begun and that edits and technical resolutions of items is ongoing. The WG expects that a CD ballot would be launched in early 2020.</p>		
7.3	<p>Jay Keller discusses items as TPD.</p> <p>WG24 is now in FDIS.</p> <p>There are no active WGs with the publication of the 198801 document. The</p>		

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	<p>WG was disbanded. The convenors and secretary of the WG are recognized.</p> <p>There are 2 new PWIs, including prenormative research from PreslHy. The TC discusses keeping this document as a TR.</p> <p>Market needs are present, with several companies building and putting into service various industrial uses (e.g. Kawasaki, Shell, etc).</p> <p>There is also a positive CIB on vocabulary – for which results were not posted but will be recirculated.</p> <p>USA indicates that the vote against the CIB was based on misinterpretation of the mechanisms of agreement and representation.</p> <p>CSA Group is also coordinating efforts on pressure technology.</p> <p>TC 197 discusses that Hervé Barthélémy, as TPD, could work with TC 58 on the topic of terminology.</p>		N 1131
	<i>The TC breaks for lunch from 12:30 to 14:00.</i>		
	The TC begins with a resolution to highlight Jim Ferrero’s participation in the activities of hydrogen technology standardization.	R. 476	
7.2	<p>Hervé Barthélémy discusses activities as TPD.</p> <p>The convenor indicates that other experts are invited to participate on revision work on 19882. Many manufacturers are now actively participating.</p> <p>Other experts are invited. The intent is to hold a meeting in the US in April.</p> <p>The head of the UK delegation asks about updating 16111 in the ADR (in the EU).</p> <p><u>ACTION ITEM: The TC requests that Hervé Barthélémy addresses to TC 58 a proposal to emphasise the 16111 document to the UN for their consideration – this is approved by resolution 458.</u></p>	R. 458	N 1133
7.5	<p>Hidenori Tomioka presents ongoing work as TPD director.</p> <p>The TPD presents an overall view of ongoing work.</p> <p>Mme Carré, representing JWG7 work also summarizes current events and next</p>		N 1134

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	<p>steps – notes the JWG7 is now disbanded.</p> <p>M. Takagi also presents work for 14687 document – indicating the importance of preparing for a possible “bad guy” market.</p> <p>Document 14687 has a change of convenorship and a PWI will be made for the next revision. 3 task groups are proposed: Task 1: Grade D – M. Tomioka Task 2: Grade E – M. Tajima Task 3: Grade A (incl. B) – M. Murugan</p> <p>M. Webster proposes some technical feedback with respect to the purity of the hydrogen used for testing according to 14687.</p> <p>There is technical discussion on the appropriate limits for use, testing and heating considering the commercial cost and availability for the various uses, and the topic of hydrogen in blends is also addressed.</p> <p>There is a discussion on the next steps for document 19880-8. An Amendment is proposed to harmonize with items published in document 14687.</p> <p>19880-8 – the WG will first address the amendment of R. 460 and then start with the revision work afterwards.</p> <p>The TC confirms the change of convenorship of WG 27 and resolves unanimously to appreciate M. Tagaki for his efforts.</p> <p>The TC confirms the importance of developing a liaison with CEN/TC 234 Gas Infrastructures.</p> <p>The TC resolves to develop an amendment for 19880-5 as per discussed earlier.</p>	<p>R. 460</p> <p>R. 461</p> <p>R. 462</p>	
8	<p>Documents published.</p> <p>The titles of the documents are read and the following documents are confirmed as published:</p> <p>ISO 14687:2019 (Yasuo Takagi and Osamu Tajima) ISO 22734:2019 (Larry Moulthrop) ISO 19880-8:2019 (Hidenori Tomioka) ISO 19880-5:2019 (Karen Quackenbush) ISO 21087:2019 (JWG) (Martine Carré)</p> <p>The TC resolves to thank the convenors of all published documents.</p>	R. 463	

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9	<p>Systematic reviews and documents more than 6 years old forth coming in 2020: 5 documents are identified that will be reviewed during 2020.</p> <p>Jay Keller (TPD) proposes that there is an issue with document ISO/TR 15916, specifically due to the quickly changing science behind materials compatibility.</p> <p>M. Keller indicates that certain members from Germany, US, and Japan would be willing to clarify the materials table.</p> <p>The proposal is to convene to fix this table, possibly replacing it with a pointer to an up-to-date database.</p> <p>DIN proposes to add Hervé Barthélémy from France, The TC discusses participants.</p> <p>Jay Keller is proposed as project leader, and a call for experts will be launched. TC 197 also proposes to establish a new WG for this review.</p> <p>The TC discusses the possibility of reviewing the entire document and concludes that if there are other items that need to be addressed, they shall be, but to date, M. Keller indicates that only the materials compatibility table has been identified as problematic.</p> <p>The TC discusses a possible lack of interest to transition this document as an International Standard – the document may remain as a TR.</p> <p>The mechanisms for the review of ISO/TS 19883 are briefly discussed as the question was raised to the Committee Manager by SAC (China).</p> <p>Other documents for systematic review are simply listed.</p>	R. 464	N 1132
10	New Work Item Proposals.		
10.1	<p>M. de Waart from Netherlands exposes the project of QualyGridS <i>[This item was presented out of sequence from the agenda due to time constraints – This was presented earlier in the afternoon of day 1]</i></p> <p>The TC discusses the importance of testing protocols for the technology of Electrolysers and to unify the requirements for grid-access protocols and performances.</p> <p>Discussions indicate that there would be a JWG coordinated through ISO TC 197 with IEC/TC 8 and IEC/TC 105.</p>	R. 459	N 1135

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	<p>M. Schmidtchen from DIN (Germany) brings up the issue of regulations present in various countries as possibly making this work unnecessary.</p> <p>The Chair indicates that he sees advantages including certification requirements and to influence other requirements.</p> <p>M. de Réals (France) indicates that demonstrating the performance is a better approach.</p> <p>M. Schmidtchen from DIN (Germany) indicates that in IEC TC 120, technologies that store energy, performance requirements have been discussed.</p> <p>The chair recognizes that there is no desire to disrupt ongoing activities. Mme de Jong (Netherlands) reiterates the importance of creating group synergies.</p> <p>M. Hart (UK) indicates some worry about overlapping with scope of work done by Dr. Choi.</p> <p>M. Schmidtchen from DIN (Germany) indicates that it is not necessarily obvious that this work should be led by TC 197 due to the fact that hydrogen in the topic discussed could be considered as a by-product.</p> <p>The Chair agrees that hydrogen may not be a main aspect of the project but that it is a key aspect of the project.</p> <p>Dr Choi wishes to contact Mme de Jong to ensure no project overlap.</p> <p>M. Boyd (USA) indicates that some standardization related to technical elements of going from idling to full power of electrolyzers may be needed.</p> <p>M. Scheffler (USA) indicates that electrolyzers can be important technology as capacitors on a power grid and helping power stability.</p> <p>Because of the discussions, a development track of 48 months is suspected, and the NWIP ballot needs to begin before April.</p> <p>The document title would be determined, but the document number is proposed to be 22734-2.</p>		
10.2	<p>M. Scheffler of the USA exposes the project of a communication protocol for heavy duty, high-flow applications.</p> <p>He proposes 3 parts: 19880-7-1: design and verification of dispenser control system</p>	R. 465	N 1139

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	<p>19880-7-2: Vehicle to dispenser communications 19880-7-3: High-flow for heavy duty uses.</p> <p>M. Ruiz and M. Karzel also present a vision for a HD HF fuelling communications protocol, indicates that SAE J2601 is inadequate. M. Ruiz and M. Karzel proposed as co-convenors.</p> <p>M. Keller comments: This discussion has improved significantly on previous discussions, there is emphasis on newly acquired knowledge.</p> <p>M Webster comments: A detail on the scope needs to be clarified on the minimum and maximum speed of refuelling, proposing that the scope aim at fuelling in the 60-200g/sec range.</p> <p>The chair appreciates the comments but indicates that this level of detail isn't appropriate for the current discussion.</p> <p>M. de Réals comments: There is a key missing word in the proposed NWIP: validation, and this needs to be addressed. There is agreement from M. Scheffler.</p> <p>The TC discusses about establishing the rules, how to test, and the quality, but a preference would be to leave it to industry to determine the exact filling method.</p> <p>The chair is in agreement with a package approach, determining the general rules and the communications; the Chair also emphasises the variety of HD applications.</p> <p>M. Quong comments that he supports part 3 especially. The SAE 2601 group is also interested in the topic and indicates that the vehicle could be responsible to control the refuelling rather than the station.</p> <p>The TC discusses the level of knowledge and indicates that for some applications, the level is currently in pre-normative research.</p> <p>Delegates from China indicate that they would like Type 3 and Type 4 tanks considered in this work.</p> <p>M. Scheffler indicates that he would prefer the process to be non-restrictive and could be adapted to each country.</p> <p>M. Keller comments that protocols would be tank specific.</p>		N 1140

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	<p>M. Hart comments that Type 3 refuelling protocols already exist in Europe.</p> <p>M. Scheffler indicates that some time will be needed to absorb the Chair's comments.</p> <p>The Chair appreciates the proposal, and would like to note that the NWIP proposal would need to come within the next 3 months to be able to obtain a 48-month project development track.</p>		
10.3	<p>Mrs. Doyle from Australia presents a project proposal on use of 100% hydrogen appliances.</p> <p>The TC discusses if TC 197 is the best group to lead a project focussed on appliances, even those that use 100% H2 as a fuel. CEN is identified as a plausible leading organization as work has already moved significantly. TC 291 on Natural Gas appliances work on similar standards.</p> <p>The Chair welcomes the proposal but recommends to investigate other avenues to develop this standard as TC 197 doesn't have any expertise in appliance design. However, TC 197 is happy to provide support to any other organization that wishes to lead this project.</p>	R. 466	N 1136
	<i>Day 1 of the plenary ends at 6:03 PM.</i>		
	<i>Day 2 of the plenary begins at 9:02 AM.</i>		
10.4	<p>Craig Webster presents a proposal from Canada on hydrogen vehicle fuel system components.</p> <p style="text-align: center;"><i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i></p> <p>The NWIP is forthcoming with the help of M. Meadows. The NWIP would look at valves, filters, fittings, etc. Excluded in the NWIP are pressure relief valves.</p> <p>The document structure would somewhat mimic ISO 15500 for CNG. The HGV 3.1 document would be used as a seed document.</p> <p>There is a question on seals and sealing materials.</p> <p>The Chair proposes that this comment be sent when the NWIP is formally submitted.</p> <p>There is a comment on compatibility with other standards and requirements and the Chair signals work made in GTR 13.</p> <p>The TC votes to welcome the NWIP within the next 3 months.</p>	R. 468	N 1138

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10.5	<p>M. Nishimura presents a proposal from Japan on O-Rings. <i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i></p> <p>The proposal discusses self-sealing mechanisms and work completed by TC 131 SC7 WG 3, referencing ISO 3601 which has 5 parts.</p> <p>The presentation includes images of O-Ring failures.</p> <p>The proposal includes a new WG and incorporate work in the 19880-X family of documents.</p> <p>M. Barthélémy indicates that TC 58 has done a significant amount of work on O-rings to generate enough knowledge on the topic. Delegation from China indicates that there is interest to discuss O-Rings for HFCV, including guidance for the structure of O-Rings. The TC discusses again that there is a lot of information that we do have, including groove size and materials, but that due to the infinite number of combinations of materials and construction, this work may not help but is a good positive step.</p> <p>The Chair indicates that there is value in the work, and proposes that the scope of the work be clarified, but that the document would fit in the 19880-X family.</p> <p>Because the intent is to complete work within a 36month track, the TC votes to accept the NWIP within 6 months.</p>	R. 469	N 1137
10.6	<p>M. Hart and M. Aarhaug present a previously discussed NWIP on the topic of hydrogen sampling of impurities. <i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i></p> <p>The project was initially discussed in 2015.</p> <p>It was withdrawn due to the WG24 workload being too important.</p> <p>If approved, this NWIP would help reduce the weight of the 19880-1 document.</p> <p>The device is called HySam, the timeframe as a new project is 3y.</p> <p>A discussion on creating a joint Ad Hoc Group to help the NWIP, the NWIP would be presented in the second half of 2020.</p> <p>The TC resolves to welcome the NWIP and to establish a JWG between ISO/TC 158 and 197 under the responsibility of TC 197.</p>	R. 470	N754

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11	Liaisons and report of liaisons		
11.1	<p>Liaison with IEC/TC 105 <i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i> M. Tomioka presents the liaison work, as well as the JWG. With IEC/TC 105. Laurent Antoni presents IEC/TC 105 – mimics the structure of TC 197.</p> <p>The TC discusses issues of interoperability, and refuelling, and the Chair responds by indicating that collaboration will happen naturally with these groups.</p> <p>M. Hawsworth describes the liaison with HySafe <i>[This item was presented out of sequence from the agenda due to time constraints – this item was presented on day 2]</i> The work completed by HySafe is presented. A reminder that Hysafe is a research organisation which promotes evidence-based results. Recent work has included HyTunnel and HySafety handbook.</p> <p>The next HySafe meeting will be in Edinburgh in Sept. 2021.</p> <p>M. Barthélémy presents the liaison reports for: TC 58 SC 2 TC 58 SC 3 TC 220 CEN/TC 268</p> <p>M. Barthélémy discusses applications using helium which in turn could be useful for LHG standards.</p> <p>M Bathélémy also discusses work on material compatibility done in TC 58.</p> <p style="text-align: right;"><i>[Please Note: Not discussed during the plenary meeting were the liaison reports filled as: N 1141 – CEN/CLC/JTC 6 N 1142 - ECMA N 1145 – TC 45 SC 1 N1146 – JWG 7 N 1147 – ISO TC 158]</i></p>		<p>N 1144</p> <p>N 1143</p> <p>N1113 N1114 N1115 N1116</p>
11.2	The Chair presents work with TC 22 SC 41 on fuel blends incorporating hydrogen under the responsibility of SC 41 to revise ISO 12619 series of documents.	R. 467	

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	<p>Blends between natural gas with hydrogen will vary from 2 to 9% H₂, and later blends will vary between 10-20%, and eventually 50-50%.</p> <p>SC 41 is interested in looking at vehicle components.</p> <p>The TPM indicates that it is possible to determine a co-convenor from TC 197. The Chair indicates that this isn't preferred for now.</p> <p style="text-align: center;"><i>[Implicit is the establishment of a JWG with TC 158 as per discussed in Resolution R. 470]</i></p> <p style="text-align: center;"><i>[The establishment of a liaison with CEN 234 as per discussed in Resolution R. 461 was already unanimously approved]</i></p>	<p>R. 470</p> <p>R. 461</p>	
12	Business plan for TC 197		
12.1	<p>Mini Round Table discussion on 19884 Document</p> <p>The chair summarizes the events related to the failed FDIS ballot for the 19884 document.</p> <p>The Chair explores the history of the events as well as the options that are in front of us, as well as the issues. The head of delegation for Norway wanted to make a comment, the Chair asks to defer until later.</p> <p>M. Barthélémy, as TPD, comments in the situation, indicating that in situations such as these are rare due to the fact that technical comments are usually raised at the DIS stage. M. Barthélémy thanks those who helped push the document forward.</p> <p>The Head of delegation for the US indicates that several technical concerns were raised but were not taken into consideration.</p> <p>The Chair discusses that there are no mechanisms within ISO to control situations such as these. If required, a CIB can be requested if time permits, but the CIB is the only possible intermediary ballot between DIS and FDIS.</p> <p>The head of delegation for Norway exposes the issues that lead to the difference in DIS and FDIS votes and indicates that there were 7 new pages and significant changes in 2 chapters.</p> <p>The delegation from Germany supports Norway in that the ISO rules do not prohibit changes in vote between DIS and FDIS.</p> <p>M. Barthélémy indicates that changes made to the document were to oblige US concerns and that technical comments were considered. The situation with respect to the document at CEN is that it could be published as an IS, or</p>		

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	<p>resubmitted for a second vote. Currently, the first option is preferred by CEN. CEN will re-open the document but the need is urgent for Europe.</p> <p>M. Barthélémy proposes that moving forward, ISO/TC 197 should wait until the decisions are made at CEN and wait until the 2020 Plenary to decide how to move forward.</p> <p>M. Scheffler of the US recommends a different approach and proposes a call for new leadership and new experts, and to restart the project immediately.</p> <p>The head of delegation for Norway indicates that the preference of the Member Body is to have an ISO Standard, and indicates that need for this document is not as urgent as is being portrayed. M. Heggem proposes also an immediate restart of the project within the ISO system as there is a requirement for global consensus for this product.</p> <p>The Chair reminds the committee that ISO/TC 11 on pressure vessels is one of the oldest TCs in the ISO system and in the past 60 years has only published 2 standards, indicating the level of difficulty in obtaining consensus on this topic.</p> <p>The head of the UK delegation concurs that preference is to have ISO continue the work.</p> <p>M. Barthélémy disagrees with the interpretation of the representative of Norway and indicates that in his opinion, having no standard is less safe than having a standard.</p> <p>The Chair emphasises to the TC that the concept of Safe vs. Not Safe doesn't affect the ISO publication protocol and should therefore not be part of this discussion.</p> <p>The Chair reminds the TC that CEN publication is likely and voices his concern regarding possible confusion if there are 2 documents.</p> <p>M. Schmidtchen indicates that the DIN preference is for an ISO Standard.</p> <p>The head of delegation for the Czech Republic indicates that the preference is to see a CEN document as guidance for a future ISO standard.</p> <p>M. Heggem opposes waiting for CEN to move forward as there is no guarantee that CEN will publish.</p> <p>The Chair summarizes the comments from the TC as a clear desire for TC 197 to resume work on the topic, but that the question of "when" has not been clarified.</p>		

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	<p>M. Heggem proposes to reactivate WG15, and to keep the same document number, and will support a new call for experts.</p> <p>The TPM indicates that he can reactivate the WG but experts will need to re-register.</p> <p>The head of delegation for Italy indicates that he supports waiting for CEN to work on the project but sees no incompatibility with restarting work on the 19884 project.</p> <p>M. Scheffler proposes that the document is advanced and that there exists technical solutions to the problems.</p> <p>A discussion on the convenorship of the WG is stopped by the Chair.</p> <p>The TC resolves to restart by consensus, discusses the possibility of reactivating the project through a Vienna accord, but this is not a noted item.</p> <p>The project is agreed to go through a NWIP Ballot, and will be proposed within the next 3 months.</p> <p>9 vote in Favour SCC / Canada UNMZ / Czech Republic DIN / Germany UNI / Italy JISC / Japan SN / Norway KATS/ Republic of Korea ANSI / United States BSI / United Kingdom</p> <p>3 abstain: SA / Australia AFNOR / France SAC / China</p> <p>0 vote against.</p>	R. 471	
12.2.1	Presentation from Japan on the market realities for hydrogen in Japan.		N 1148
12.2.2	Presentation from Dr. Choi (<i>this presentation is made out of sequence due to time constraints and combined with item 14</i>).		N 1149
13	Permanent editing committee	R. 472	

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	<p>The TC resolves to confirm the composition of the PEC:</p> <p>The members are Jonathan Lafontaine as Committee Manager of TC 197, Karen Quackenbush of the United States, and Frédéric Solbes of France.</p>		
13.1	<p>Jonathan Lafontaine proposes that the PEC be given a space on the ISO Platform for the following purposes:</p> <ul style="list-style-type: none"> • Ensuring a continuity of editing decisions, • Facilitating follow-up of the documents as they are presented to the PEC, • Facilitating transfer of knowledge in adverse circumstances. <p>The TC unanimously accepts this proposal.</p>	R. 473	
14	<p>Future ISO TC 197 meetings</p> <p>Dr Choi presents an official invitation to come to Seoul, Republic of Korea in 2020 for the 29th plenary of ISO/TC 197.</p> <p>Dr Choi also makes a very brief presentation of the Korean market (see item 12.2.2 of these minutes.)</p> <p>Rachelle Doyle proposes that the 2021 ISO/TC 197 plenary be held in Australia.</p> <p>The TC applauds the invitation, the destination city is clarified as Sydney.</p>	R. 474	<p>N 1150</p> <p>N 1151</p>
15	<p>Other business</p> <p>The presence of Dr. Ulrich Schmidtchen as a representative of DIN (Germany) is highlighted as his last at the TC 197 meeting.</p> <p>A resolution is unanimously approved to thank him for his participation.</p>	R. 475	
16	<p>All resolutions are shown on-screen.</p> <p>The TC reads and comments resolutions as they appear.</p> <p>2 editing comments are made: all document numbers should be accompanied by their title AND the organisations voting in favour, against, and abstaining from resolution 471 need to be clarified on the resolution document.</p> <p>The editing changes are assigned to the committee manager. These are the</p>	R. 477	

Agenda Item (N1112)	Comments and notes	Resolution Number (N1121)	Related N Doc Number
	only changes that will be accepted by the TC. Otherwise, the TC resolves to accept the resolutions as they appear on-screen.		
17	The meeting is closed at 13:15 pm of day 2 in view of the optional site tour.		

DRAFT