

**Minutes of the IAPWS working group IRS, London, September 1st 2013
(Numbering of topics follows TPWS agenda)**

1. Ingo Weber opened the session for IRS at about 11 am. The agenda was adopted unchanged and is IRS Attachment A.
2. Michael Hiegemann was appointed clerk of minutes.
3. Covered in TPWS minutes.
4. Covered in TPWS minutes.
5. Covered in TPWS minutes.
8. Hans-Joachim Kretzschmar reported about the proposed “Guideline on the Fast Calculation of Steam and Water Properties in Computational Fluid Dynamics Using the Spline-Based Table Look-Up Method (STM)”. The need for fast evaluation of fluid properties was repeated again, particularly with respect to backward evaluations. Shortcomings of the table look-up method being subject of the “IAPWS Guideline on the Tabular Taylor Series Expansion Method (TTSE) for Calculation of Thermodynamic Properties of Water and Steam” were reminded as they delivered the motivation for the development of a spline based method. This method was applied with a given grid size and respective deviations to the original IAPWS-IF97 were discussed. Some discussion evolved about what exactly the guideline should cover. There was a general agreement that the guideline should consist of two sections: One describing the general concept and another section describing the application to IAPWS-IF97 and IAPWS-95. The working groups decided that the proposed guideline is ready for evaluation and an evaluation task group was appointed to prepare adoption of the final version of the document in the next year. The work group consists of Adam Novy (chair), Francisco Blangetti, Kiyoshi Miyagawa (to be confirmed), Reiner Pawellek, Julien Bonifay (tbc) and Ingo Weber.
9.
 - 9.1. The task group “New Industrial Requirements” (chaired by Ingo Weber) is an ongoing task group collecting new developments throughout the year. No new developments could be reported at this time.
 - 9.2. The Task Group “Industrial Survey” could not report any progress. It was decided to discontinue the task group. It may be reactivated after the release of the Guideline on the Spline based Method.
 - 9.3. The Task Group “Advisory Notes” (Bert Rukes, Michael Hiegemann, Anurag Singh and Allan Harvey) has considered the existing Advisory Notes and has one further proposal concerning the IAPWS documents relevant for industrial application. The document is under preparation and is supposed to be ready for adoption in the 2014 meeting. The task group will be formally renamed to “Industrial Advisory Note”.
10. Covered in SCSW minutes.
11. Covered in SCSW minutes.
14. Covered in TPWS minutes.

16. Other business: No International Collaborative Projects were proposed and no ICRNS need the WGs attention
17. Membership:
The working group accepted Dr. Francesca di Mare of the German Aerospace Center (DLR) as a new member
18. Contribution to Press release will be done by the WG chair during the conference week
19. Formal motion to the EC will be prepared by the WG chair during the conference week
20. Ingo Weber adjourned the meeting at about 6 pm

Agenda for the IAPWS Working Group Industrial Requirements and Solutions (IRS)

London, England, 01 September 2013
(Numbering of topics follows TPWS agenda)

1. Opening Remarks; Adoption of Agenda
2. Appointment of Clerk of Minutes
3. OPAL Web Space for Working Material for WGs TPWS, IRS, and SC SW, joint with WG TPWS and SC SW (H.-J. Kretzschmar)
4. Potential International Collaborative Projects
5. Advisory Note on the Properties of Sea Water for Industrial Use, joint with WGs TPWS and SC SW
 - Report of the Evaluation Task Group
 - Formal consideration of the Advisory Note by the Working Groups
8. Proposal for an IAPWS Guideline on the Fast Calculation of Steam and Water Properties in Computational Fluid Dynamics Using Spline Interpolation, joint with WG IRS (H.-J. Kretzschmar, M. Kunick, J. Hruby, M. Duška, V. Vinš, F. di Mare, and A. Singh)
9. Industrial Requirements and Solutions for Steam Property Calculations, joint with WG TPWS
 - 9.1 Report of the New Industrial Requirements Task Group (I. Weber)
 - 9.2 Report of the Industrial Survey Task Group (A. Singh)
 - 9.3 Report of the Task Group “Advisory Notes” (M. Hiegemann, B. Rukes, P. Murphy, A. Harvey)
10. Report of Task Group on Extension of Range of Formulation for Thermodynamic Properties of Sea Water, joint with WGs TPWS and SC SW (R. Feistel)
11. Report of Task Group on Transport Properties of Seawater, joint with SC SW and WG TPWS and PCAS (A. Anderko, A. Harvey)
14. Report of Task Group on Heavy Water Properties, joint with WG TPWS (A. Harvey, R. Span)
16. Other Business
 - 16.1 Report on International Collaborative Projects
 - 16.2 Report on ICRNs
17. Membership
18. Contribution to Press Release
19. Preparation of the Formal Motion to the EC
20. Adjournment

2013-August-30, Ingo Weber (Chair)