

# **CCEM 2017 Report from Working Group on the SI**

## **CCEM WGS**

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**BIPM  
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# *Terms of Reference*

**The Consultative Committee on Electricity and Magnetism formed the Working Group on the SI (CCEM WGSI) in 2005. Since that time the working group has drafted the CCEM's recommendation EM1(2007) and its mise en pratique (2009), all in support of the proposed redefinition of the SI.**

**With redefinition approaching the CCEM has decided to reconstitute the WGSI focusing on the effective implementation of the revised SI and preparing for other possible changes impacting electrical metrology.**

# *Terms of Reference*

**The revised Terms of Reference of the CCEM WGSI are:**

- To liaise with the CIPM's SI promotion Task Group concerning the promotion and coordination of the implementation of the proposed changes to the SI,**
- To liaise with the CCU, other CC's and related committees concerning the implementation of the revised SI and other changes that may occur in the future,**
- To prepare guidelines for the NMIs and affected clients concerning the discontinuous change in the electrical units occurring at the time of redefinition,**
- To consider and possibly revise the mise en pratique as needed,**
- To continue to monitor changes in other units that may impact the electrical measurement system.**

# *WGSI Members*

## **Chairperson:**

**Dr. Barry Wood**

**NRC**

## **Members :**

**Dr. Ilya Budovsky**

**NMIA**

**Mr. Nick Fletcher**

**BIPM**

**Dr. Steve Giblin**

**NPL**

**Dr. Beat Jeckelmann**

**METAS**

**Dr. François Piquemal**

**LNE**

**Dr. James Olthoff**

**NIST**

**Dr. Ian Robinson**

**NPL**

**Dr. Uwe Siegner**

**PTB**

**Dr. Michael Stock**

**CCEM Secretary**

**Dr. Gert Rietveld**

**CCEM Président**

# *Revised Mise en Pratique*

**See document CCEM 17 08**

**Updated dates numbers and references.**

**Essentially the same structure and content.**

**Improved some of the wording.**

**Conventional values of  $R_K$  and  $J_K$  are a creation of the CCEM. We recommend 16 digits for their values.**

**A post-redefinition mise and supplementary document are under consideration with a more practical viewpoint.**

# *Implementation Guidelines*

**See document CCEM 17 09**

**Advice for NMI's and clients about implementing redefinition.**

**NOT necessary to correct all electrical values on implementation day (May 20, 2019).**

**Numerical correction versus recalibration versus wait till next calibration cycle.**

**Other requirements and sources of information.**

**This document is also guidance for QS auditors.**

# *CCU's Common Statement*

**The CCU is preparing a short, general statement from all of the CCs introducing the SI redefinition and directed towards stakeholders. It is titled:**

**Joint statement from all the Consultative Committees of the CIPM to their stakeholders on the forthcoming redefinition of the SI**

**Only a working draft is presently available.**



# CCU's Common Statement

*(CCEM paragraph)*

**In the 'Revised SI', the methods used at present for the practical realization of electrical units at the highest metrological level will become fully consistent with the definitions of the units. The transition to the 'Revised SI' will result in a small change in the size of all disseminated electrical units. The maximum change will be about 0.1 parts per million, and for the vast majority of measurement users no action need be taken. Practitioners working at the highest level of accuracy may need to adjust the values of their standards and review their uncertainty budgets. They are invited to consult guidance documents available through the CCEM, particularly the CCEM's *mise en pratique* .**

# *Timeline*

<b>July 1, 2017</b>	<b>deadline of acceptance of new data</b>
<b>Sept 4, 2017</b>	<b>CODATA TGFC meeting manuscript already accepted and publically available</b>
<b>Sept 5-6, 2017</b>	<b>CCU reviews values recommends digits etc</b>
<b>Oct 16-20, 2017</b>	<b>CIPM meeting – recommendation to the CGPM</b>
<b>Nov 13-24, 2018</b>	<b>approves the ‘Revised SI’</b>
<b>May 20, 2019</b>	<b>Implementaion day</b>

# *Future Plans*

**How detailed should the CCEM mise be ?**

**What do other CCs do ?**

**Should it be more applicable to all NMIs as opposed to the most advanced NMIs ?**

**Should a separate document of typical traceability chains in electrical measurements be prepared?**

# *CCEM Actions*

**Consider endorsing the mise document.**

**Consider endorsing the Implementation Guidelines.**

**Comments about the CCU's common statement**

**Other comments?**