

The New CIPM and its Workplan

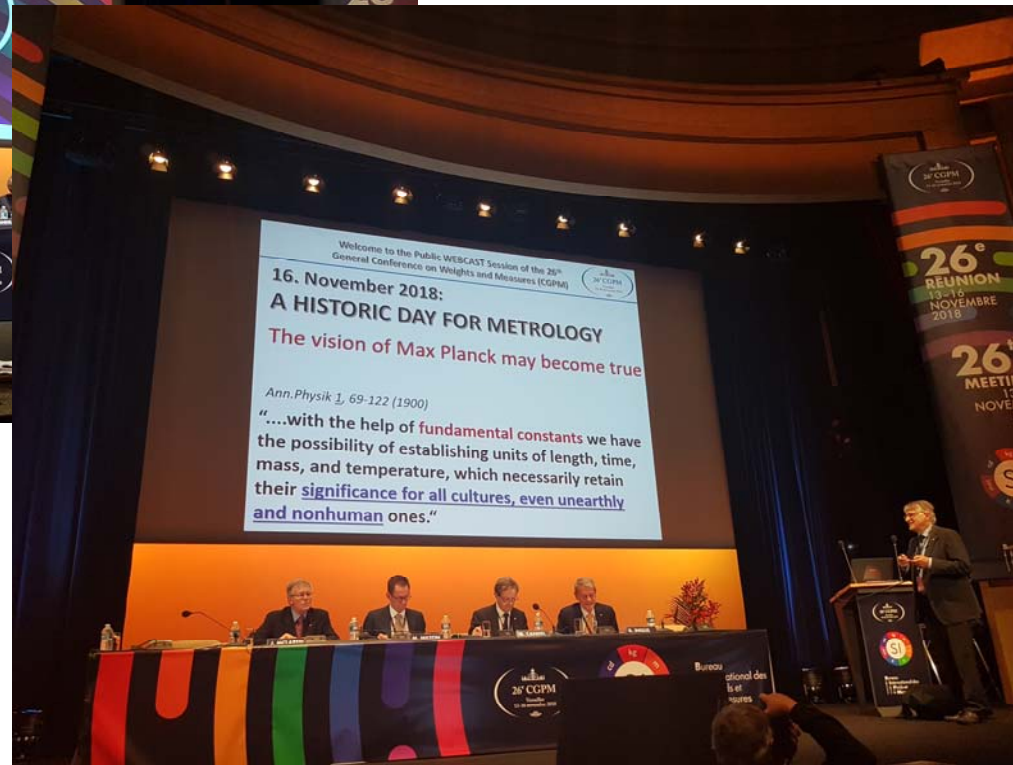
Directors meeting
October 2019

Wynand Louw
President of CIPM

Bureau
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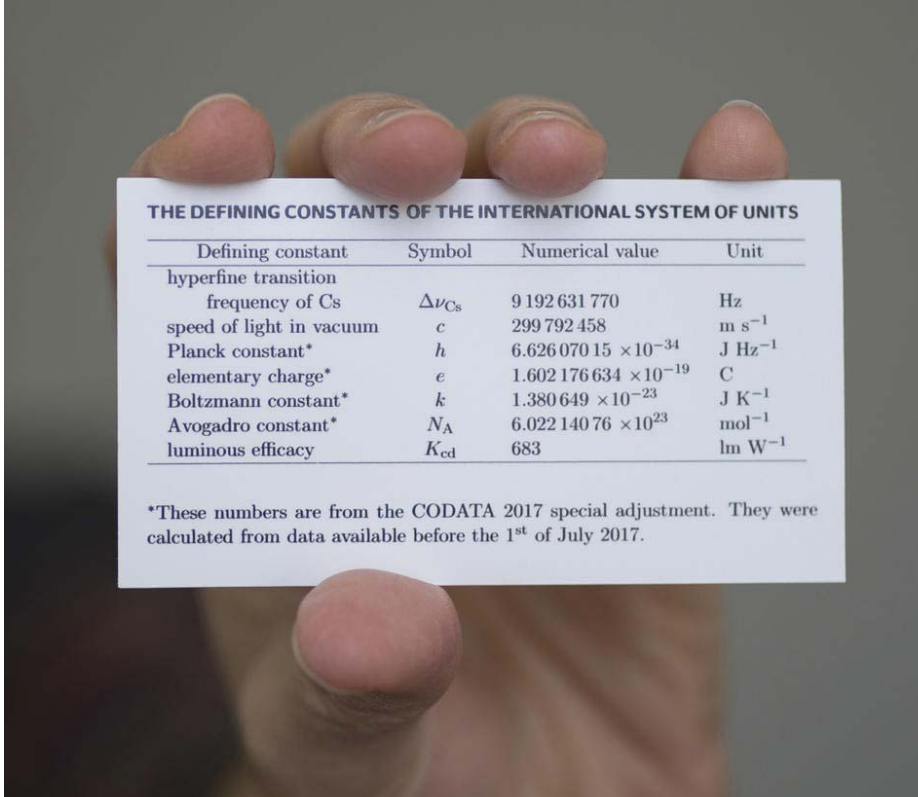


16 November 2018





The Revised SI



THE DEFINING CONSTANTS OF THE INTERNATIONAL SYSTEM OF UNITS

Defining constant	Symbol	Numerical value	Unit
hyperfine transition frequency of Cs	$\Delta\nu_{\text{Cs}}$	9 192 631 770	Hz
speed of light in vacuum	c	299 792 458	m s^{-1}
Planck constant*	h	$6.626\,070\,15 \times 10^{-34}$	J Hz^{-1}
elementary charge*	e	$1.602\,176\,634 \times 10^{-19}$	C
Boltzmann constant*	k	$1.380\,649 \times 10^{-23}$	J K^{-1}
Avogadro constant*	N_{A}	$6.022\,140\,76 \times 10^{23}$	mol^{-1}
luminous efficacy	K_{cd}	683	lm W^{-1}

*These numbers are from the CODATA 2017 special adjustment. They were calculated from data available before the 1st of July 2017.

The new CIPM



The CIPM

President

Dr W. Louw (South Africa)

Secretary

Dr T. Usuda (Japan)

Vice-Presidents

Prof. J. Ullrich (Germany)

Dr J. Olthoff (United States of America)

Other CIPM members

Dr F. Bulygin (Russian Federation)

Dr I. Castelazo (Mexico)

Dr D. del Campo Maldonado (Spain)

Dr Y. Duan (People's Republic of China)

Dr N. Dimarcq (France)

Dr H. Laiz (Argentina)

Dr T. Liew (Singapore)

Prof. P. Neyezhnikov (Ukraine)

Dr S.-R. Park (Republic of Korea)

Dr M.L. Rastello (Italy)

Dr P. Richard (Switzerland)

Dr G. Rietveld (Netherlands)

Dr M. Sené (United Kingdom)

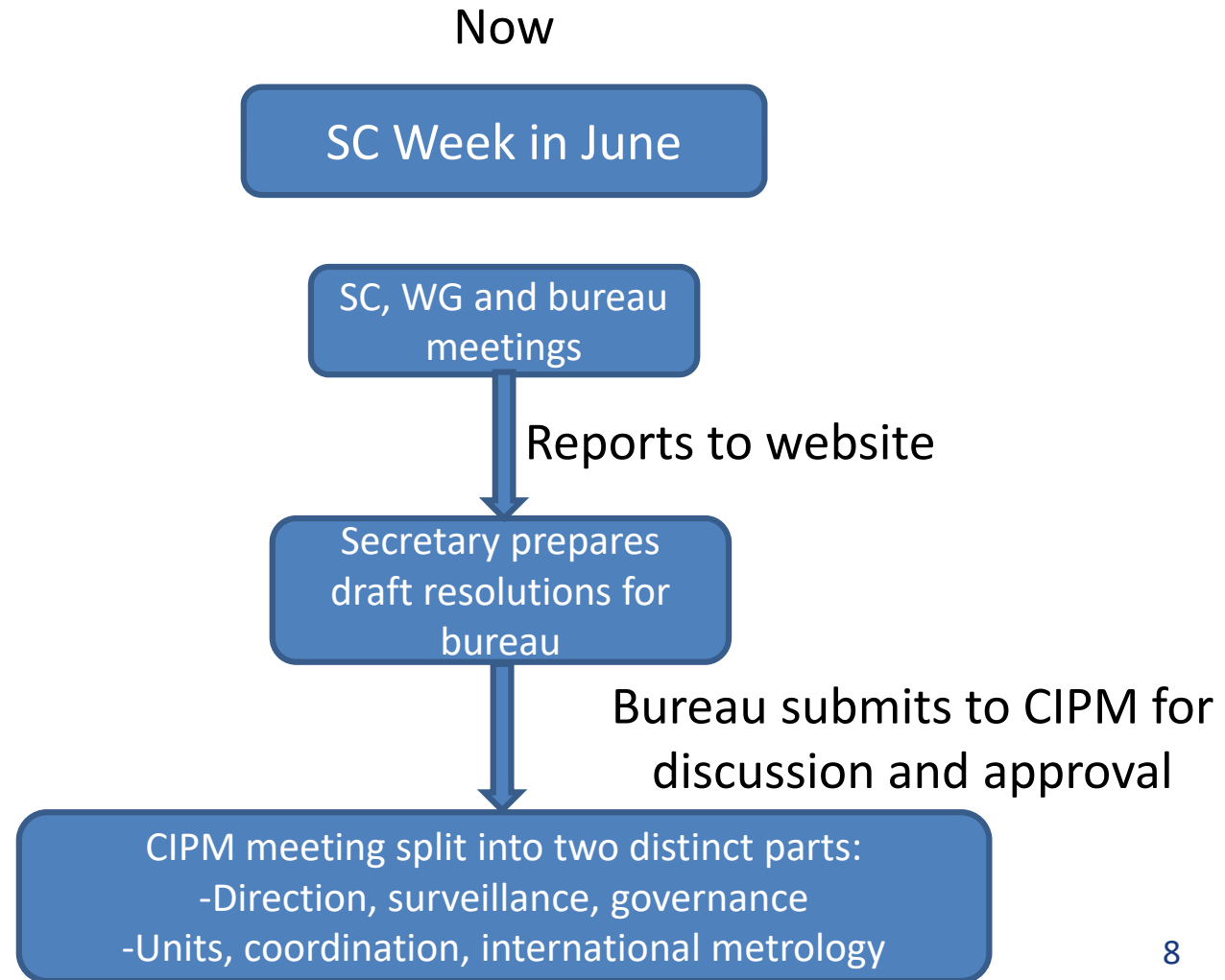
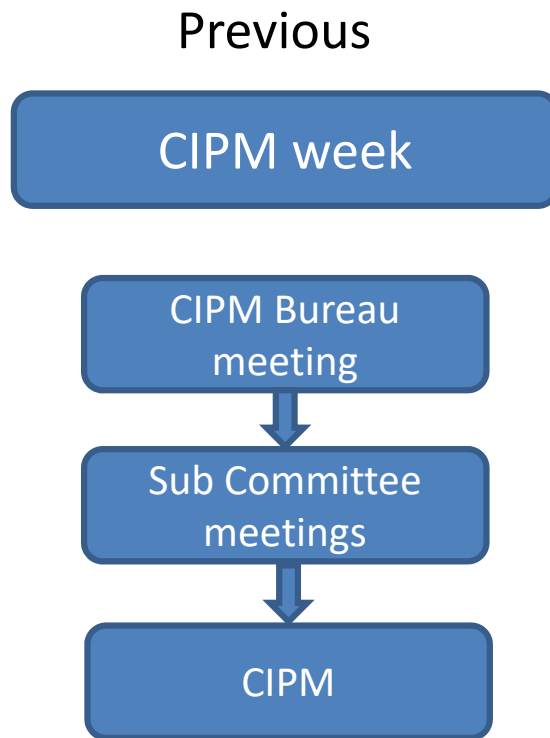
Dr A. Steele (Canada)

*Elected on 16 November 2018

Activities since March 2019

1. After the elections, the CIPM considered the 26th CGPM
2. The CIPM spent considerable time on the directive stemming from the withdrawn “draft resolution F”, interpreting the discussions in the CGPM and the additional input received from Members states after the CGPM
3. A task group was formed that prepared letters to the State representatives on progress, how the CIPM were approaching the issue and with input as to possible discussion points of a Task Group of State Representatives

Activities since November 2018 cont.



Draft Work plan to develop Strategy 2030+

1. Responding to Evolving Needs for Metrology

2. Addressing key scientific challenges to advance the global measurement system

3. Strategy for deepening engagement with other international organisations on measurement science issues

4. Reviewing the strategy for the future membership of the organisation

5. Modernising the operations of the organisation

1.b Responding to Evolving Needs for Metrology

- f. Addressing priority needs by convening subject matter experts at a series of workshops to bring together NMIs and stakeholders to consider the evolving needs for metrology in:
- Developing a digitisation agenda for measurement (jointly with OIML),
 - Addressing reproducibility issues,
 - Validated reference data to address “big data” challenges,
 - New and advanced manufacturing technologies (e.g. Industry 4.0)
 - Accurately quantifying climate change

2. Addressing key scientific challenges to advance the global measurement system

- a. Overseeing the implementation of the 2018 revisions to the SI.
 - i. Consult and assist the NMI and scientific community with implementation (CCU)
 - ii. Review of scientific developments and alternate metrological traceability paths created by the 2018 revisions

- b. Consider possible future revision of the SI:
 - i. Developing a consensus roadmap for a new definition of the second and updating the applicable principles of traceability in view of the enormous uptake of GNSS time signals globally.
 - ii. Consider the longer term needs for a quantum candela

2.b Addressing key scientific challenges to advance the global measurement system

- c. Primary metrology outside of the NMIs, and its linkage with/impact on the wider quality infrastructure
 - i. Considering issues such as accreditation, metrological traceability, remote and embedded calibration

5. Modernising the operations of the organisation by:

- a. Developing “Rules of procedure” for the CIPM
- b. Reviewing the role and operation of the CIPM bureau (and all Agents of the Org)
- c. Reviewing future requirements for the work of the BIPM staff and laboratories
 - i) Launching a survey amongst the NMIs to determine their needs for technical and coordinating work from the BIPM Secretariat staff in the future
- d. Agreeing policies for the organisation in line with best practice amongst International Organisations (e.g. to more transparently address issues of diversity, gender balance, whistleblowing, etc.)
- e. Better exploitation of all available vehicles for stakeholder interaction

Summary of context

The Strategy is developed by the CIPM to address issues the CIPM has been mandated for by the Metre Convention and General Conference. It will also:

- Develop a new financial model and work programme for the BIPM staff, buildings, site and laboratories for the period 2024 to 2027
- Providing full feedback to the General Conference on progress with all of the above

Member States and Associates (As of 06 August 2019)

- 61 Member States*
- 41 Associates of the CGPM
(States and Economies)

* The official term is "State Parties to the Metre Convention"; the term "Member States" is its synonym and used for easy reference.



New Member States and Associates since last NMI Directors meeting (2017)

New Member States:

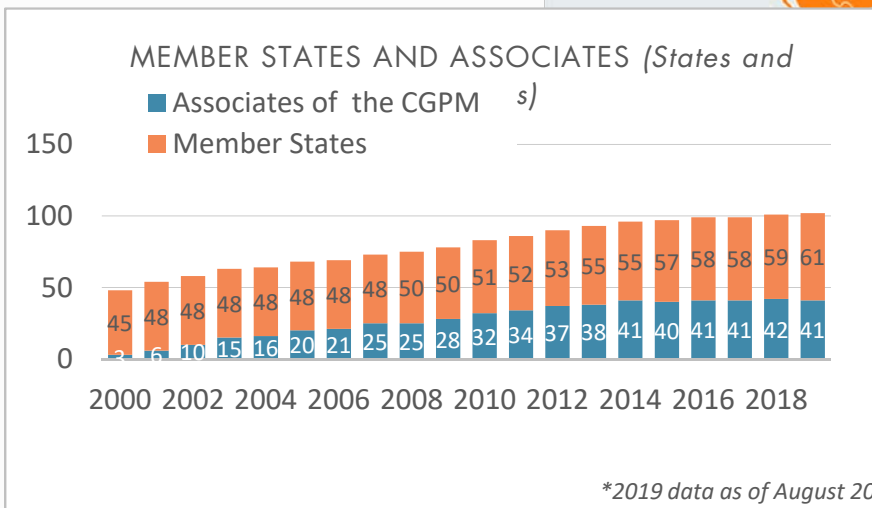
- Montenegro on 24 January 2018 (formerly an Associate since 2011)
- Ukraine on 7 August 2018 (formerly an Associate since 2002)
- Morocco on 24 May 2019
- Ecuador on 6 August 2019 (formerly an Associate since 2000)

New Associates of the CGPM:

- Ethiopia on 1 January 2018.
- Tanzania on 1 January 2018.
- Kuwait on 23 March 2018.
- Uzbekistan on 13 July 2018.

Exclusions:

- Yemen on 1 January 2018 (Associate since 2014).
- Venezuela on 14 November 2018 (Member State since 1960. Original signatory of *Metre Convention*)



Thank you

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