The CCEM strategy 2020-2030 and the future of electromagnetic metrology

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The recently published CCEM strategy 2020–2030 [1, 2] presents the future challenges for electrical measurement science, as seen by the CCEM community in consultation with CCEM stakeholders. These challenges originate from the development of emerging technologies like smart electrical grids incorporating renewable energy production, high-frequency communication, electrical vehicles and sensor networks. Fundamental quantum phenomena underpin the extraordinary accuracy that can be achieved with electrical measurements and the development of novel quantum technologies will continue to have a significant impact on electrical metrology. A general challenge for the CCEM community is the ubiquitous application of electricity and electrical measurements that leads to a large number of electrical quantities, having wide ranges of values and frequencies ranging from DC far into the GHz-range.

In this presentation, an overview will be given of the CCEM 2020-2030 strategy including how the CCEM plans to provide leadership and vision to NMIs and DIs to inform their decisions on measurement science and research activities. One of the ambitions of the CCEM is to extend its interactions beyond its member institutes to other Consultative Committees and by seeking further engagement with other international organizations.

An important element of the CCEM work is to oversee the work programme of the BIPM electricity laboratories. An short overview of this work programme will be given, and more details will be presented by the Director of Physical Metrology at the BIPM.

References:

[1] Consultative Committee for Electricity and Magnetism (CCEM). Available online: https://www.bipm.org/en/committees/cc/ccem

[2] CCEM Strategy 2020-2030. Available online: https://www.bipm.org/documents/20126/41396945/CCEM-Strategic-Plan/b593e22d-35d8-fddc-ba51-8bb494696e43