

Photometry and Radiometry

The Consultative Committee for Photometry and Radiometry (CCPR)



Photometry

Describes the effects of visible light on the human eye in terms of brightness and colour as perceived by the human eye.

Radiometry

Metrology related to the physical measurement of the properties of electromagnetic radiation, including visible light.



Global forum for progressing the state of the art

- Revision of the *Principles governing photometry* written with CIE published May 2019
- New Task Group on *cone-fundamentals* launched after CCPR May 2022 on-line meeting

“Cone fundamentals-based colorimetry(photometry) allows the parameterization of the colour matching functions and the spectral luminous efficiency function”



- New Task Group : *digitalization* – to identify the role that CCPR can play in the Digital SI

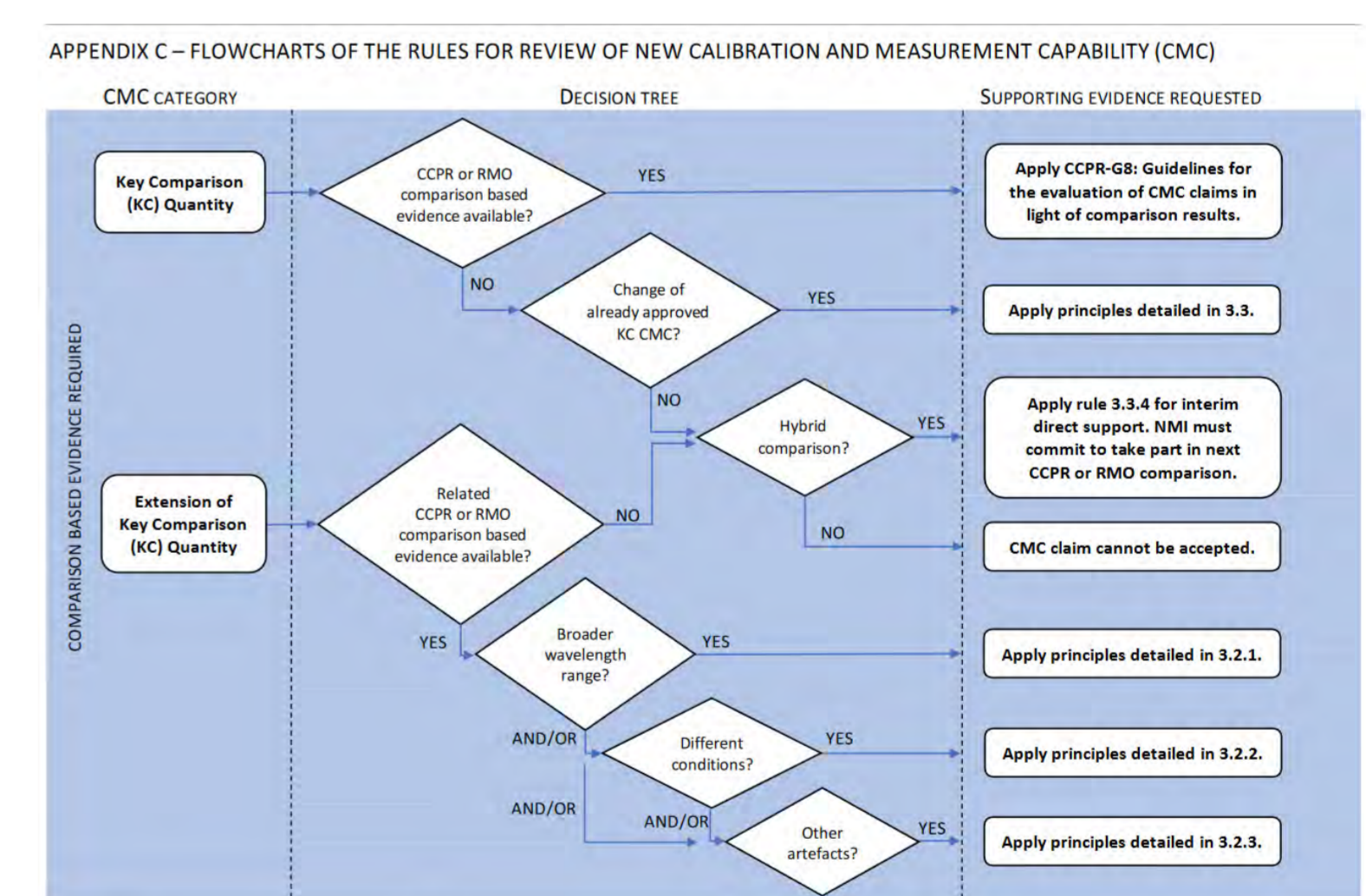
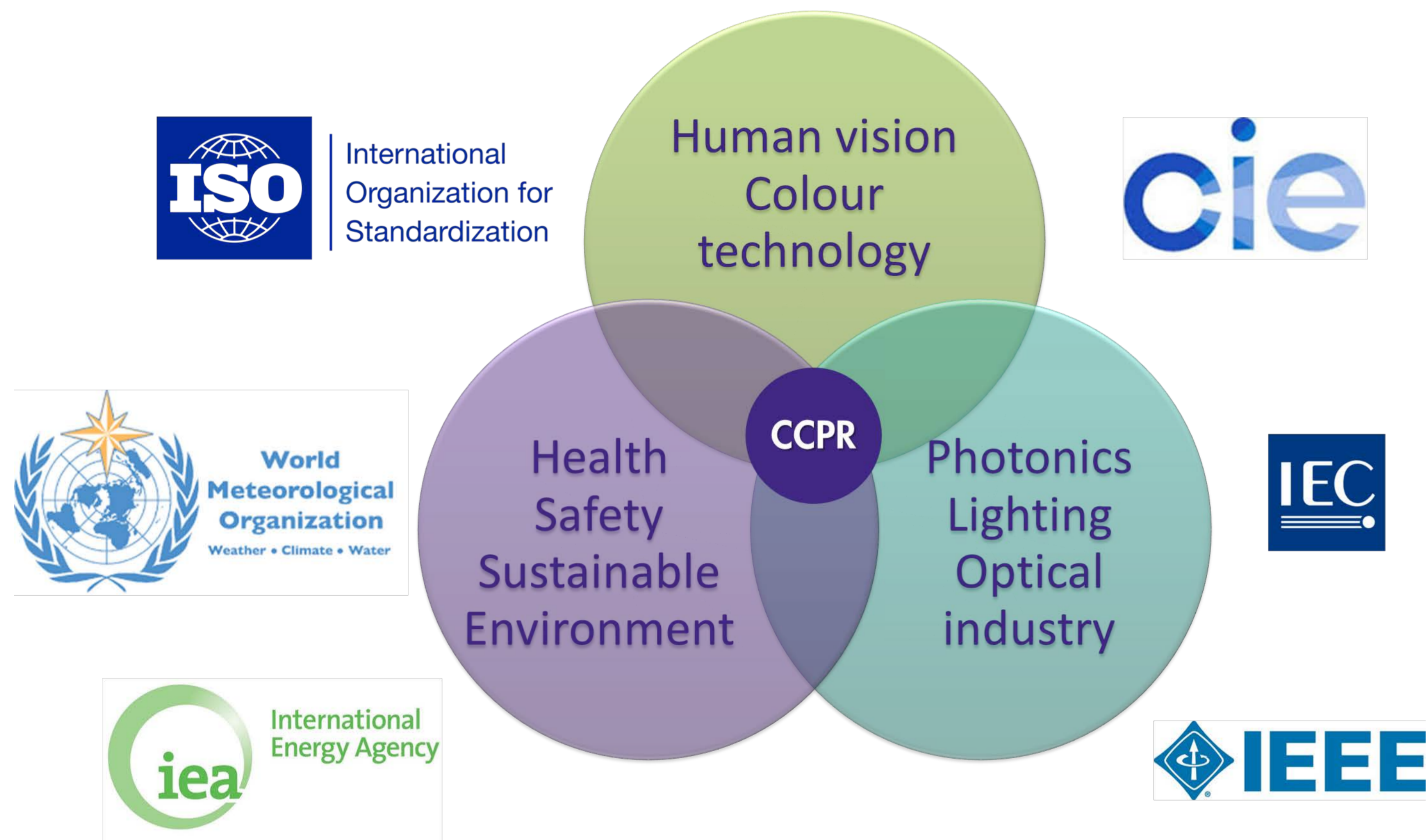
- Digital Calibration certificates
- Data formats
- Digital sensors and complex systems



Global Comparability

- Strengthening *core competencies* at the CC level
2nd round of Key Comparisons ongoing
- Extending comparability *world-wide* with RMOs
10 RMO comparisons in progress
- Testing *future standards* in Pilot Studies, e.g.
« detection efficiency of single-photon detectors »
- 3 *new members* since 2022 : INMETRO (Brazil), JV (Norway), NSC-IM (Ukraine) - *official observer*
- *Harmonization* and *rationalization* of CCPR rules to claim calibration and measurement capabilities, supporting access to emerging NIMs (economies).

Stakeholders



New guidelines published in 2021

Key challenges for the future

Lighting

Support energy efficient lighting (LED)

Appearance

Colour and other optical properties of materials

Photovoltaics

Energy rating standards

Climate

Support earth observation community

Quantum

Metrology infrastructure for optical quantum-enhanced measurements

More in new CCPR Strategy for 2022-2032 published on BIPM website