

CCT President's Report

28th CGPM (2026)



Working together to
promote and advance
the global comparability
of measurement

Report by the President of the CCT

Dr Dolores del Campo Maldonado, President of the Consultative Committee for Thermometry (Comité consultatif de thermométrie, CCT) here reports on the activities of the CCT since the 27th meeting of the CGPM (2022).

This report has been prepared in collaboration with the CCT Executive Secretary Dr Stéphane Solve and the members of the CCT Working Group for Strategic Planning (CCT-WG-SP).

Executive summary

Since the 27th meeting of the CGPM (2022), the Consultative Committee for Thermometry (CCT) has continued to strengthen the global comparability, traceability and dissemination of temperature and related thermal quantities. Its work supports the realization of the kelvin and addresses major societal and technological challenges in climate, health, food safety, energy, advanced manufacturing and digital transformation.

The CCT has updated its strategy for 2025–2030+ in line with the CIPM Strategy 2030+, identifying priority areas where reliable thermal measurements are essential, including environmental monitoring, clinical thermometry, humidity and moisture, thermophysical quantities, autonomous production, quantum technologies, nanoscale thermometry and space applications.

Key achievements include progress in maintaining and improving the International Temperature Scale of 1990 (ITS-90), publishing low-uncertainty thermodynamic temperature data below 335 K, completing high-temperature fixed-point determinations, finalizing CCT-K10, developing a digital and machine-readable *Mise-en-Pratique* for the definition of the kelvin (MeP-K) and contributing to the SI Digital Framework. The CCT has also advanced on guidance documents for the thermal metrology community.

Looking ahead, the CCT will focus on resolving discrepancies in primary thermometry above 400 K, improving contact and non-contact thermometry, strengthening key comparisons and CMC support, developing APIs and digital services, and enabling traceability at the point of measurement through practical primary thermometry and self-validating sensors. These efforts will help ensure that thermal metrology remains robust, internationally harmonized and responsive to emerging needs beyond 2030.

Scope of the CCT

The Consultative Committee for Thermometry (CCT), like the other Consultative Committees, serves as a global forum through which National Metrology Institutes (NMIs) exchange information on state-of-the-art developments and best practices in thermal metrology. It also facilitates dialogue between NMIs and both established and emerging stakeholders in order to identify new opportunities for thermal metrology to contribute to global measurement challenges, while promoting and improving the world-wide comparability of measurements.

In collaboration with the Regional Metrology Organizations (RMOs) and within the framework of the CIPM Mutual Recognition Arrangement (CIPM MRA), the CCT is responsible for planning, coordinating, executing, and monitoring Key Comparisons (KCs), as well as supporting the review process of Calibration and Measurement Capabilities (CMCs).

In line with the high-level objectives established by the General Conference on Weights and Measures (CGPM), the CCT specifically aims to establish, maintain, and improve the global compatibility of thermal measurements through the promotion of traceability to the International System of Units (SI). It also seeks to ensure that the SI unit of temperature, together with related derived quantities such as humidity, moisture, thermophysical quantities, and thermal energy (heat), is realized and disseminated world-wide in a consistent and appropriate manner.

The CCT provides recommendations to the CIPM concerning the realization and dissemination of the SI unit of temperature and its derived quantities, while also encouraging and supporting research activities necessary for the maintenance and further development of the SI in relation to the kelvin. Furthermore, the CCT supports NMIs in providing traceability for

thermal metrology quantities through the development of guidance documents, technical recommendations, and training materials.

The CCT also promotes the active involvement of NMIs in addressing emerging needs in thermal metrology and provides authoritative guidance to users in the field. In addition, it maintains close liaison with relevant stakeholders to ensure continuous awareness and understanding of current and future measurement needs.

Strategy

The CCT has updated its Strategy Document for Rolling Programme Development from 2025 to 2030+ in 2026¹, that was approved at its 2026 plenary meeting.

Following the “CIPM Strategy 2030+: responding to evolving needs in metrology”, the CCT Strategy identifies a series of thematic areas that will be the focus of the international metrology community in the next 30 to 50 years. It addresses the needs that arise for thermal metrology from current global challenges as well as from fast developing new technologies.

Temperature, being an intrinsic quantity is one of the most measured quantities, meaning that the activities of the CCT are profoundly cross-cutting and can contribute to addressing the needs of all stakeholders. Thermal metrology plays a fundamental role in addressing global challenges related to environment, health, food safety, energy, and advanced manufacturing. The following selected priority areas of thermal metrology, directly linked to the “CIPM Strategy 2030+”, have been identified:

Thermometry for global challenges

- In environment/climate: Temperature and humidity are recognized as Essential Climate Variables (ECVs), making reliable and traceable thermal measurements crucial for climate monitoring, environmental protection, and climate adaptation policies. The measurement capabilities provided by CCT members support observations in the atmosphere, oceans, and land environments, including air, sea, and soil temperature, as well as humidity and moisture measurements. Thermal metrology also contributes to reducing pollution and carbon emissions through improved industrial efficiency, optimized energy use, and enhanced building thermal performance.
- In health and life sciences: Accurate clinical temperature measurement is essential for diagnostics, patient monitoring, and thermal therapies. The CCT promotes SI-traceable calibration of clinical devices and supports the harmonization of international standards. Improved non-contact thermometry is particularly important for disease diagnosis and reliable subject triaging during pandemics. Emerging techniques such as luminescence thermometry at the nanoscale provide new opportunities for biomedical diagnostics and therapy monitoring. Thermal and humidity measurements are also relevant in pharmaceutical manufacturing, wound care, skin health and medical gas control.
- In food safety: There is a strong dependence of food safety on reliable temperature and moisture control during food transport, storage, cooking, packaging, and drying processes. Accurate thermal measurements are essential for food quality, sterility, and long-term preservation.
- In the energy sector thermal metrology has very significant impact. Accurate temperature, humidity, and thermal quantity measurements support low-carbon energy generation technologies, including renewable energy, hydrogen systems, nuclear power, and biofuels. Thermal metrology makes a major contribution to the improvement of energy efficiency in industrial processes, transportation, and buildings. In addition reliable monitoring of temperature and humidity is essential for efficient modern battery technologies, fuel gas characterization, combustion processes and the long-term storage and decommissioning of nuclear waste.
- In advanced manufacturing; precise and traceable thermal measurements are increasingly required due to the digitalization and progressive automation of industrial processes. Sample applications such as semiconductor

¹ <https://www.bipm.org/documents/20126/41598583/CCT+Strategy/145827b2-4f6a-42ed-bd77-bbffa782e2f7>

manufacturing, additive manufacturing, and advanced turbine engines (and many more) require highly accurate temperature and moisture control. The development of *in situ* traceable thermal sensors and embedded sensor networks is expected to become ubiquitous for future autonomous production systems.

New technologies spawning new thermal metrology

- The digital transformation of metrology is another strategic area for the CCT. The Committee supports developments such as digital calibration certificates, machine-readable data, and the SI Digital Framework to ensure reliable digital metrology infrastructures and trustworthy automated workflows involving Artificial Intelligence. Related to this, system metrology focuses on ensuring the traceability, interoperability, and uncertainty evaluation of interconnected sensor networks widely used in industrial and environmental monitoring.
- Quantum technologies are creating both challenges and opportunities for thermometry. Accurate thermal measurements are required for the operation of quantum devices and sensors, while emerging quantum thermometry methods are expanding metrological capabilities. The CCT actively supports both the application of metrology to quantum technologies and the use of quantum technologies to improve thermometry itself.

New thermal metrology developments to address new challenges

- New developments in perceptual metrology are becoming increasingly important due to rising global temperatures and heat stress. Indices such as the Universal Thermal Climate Index (UTCI), which combines temperature, humidity, radiation, and wind speed, are used to evaluate human thermal comfort and physiological response under extreme environmental conditions.
- Thermal measurements in space applications are another growing field. Space-based instruments, Earth observation systems, and quantum sensors require robust and traceable thermometric methods capable of operating under extreme thermal conditions. The CCT supports research into self-traceable thermometry and shortened traceability chains through innovative primary thermometry approaches to enable *in situ* (*i.e.* in-space) reliable calibration and instrument validation.
- At the nanoscale, thermal characterization of biological systems is enabling advances in nano-biometrology, particularly through luminescence thermometry techniques capable of measuring temperature at cellular and subcellular levels.
- Finally, the CCT recognizes the increasing need for education and training in thermal metrology. Improved understanding of traceability, uncertainty analysis, sensor selection, and accreditation is essential for NMIs and stakeholders world-wide, making training initiatives, technical guidance, and e-learning activities increasingly important.

To address these issues, the CCT considers the following to be the priorities in thermal measurements:

Key advantages required for the future of the kelvin and the MeP-K:

- A formal review of the *MeP-K-19* is required to determine if current scales (ITS-90 and PLTS-2000) still meet stakeholder needs, particularly regarding the cost and method of implementing thermodynamic temperature dissemination and/or the introduction of a new temperature scale both for the NMI but also more especially for the user community.
- Urgent Data Needs: There is a critical requirement for new thermodynamic temperature measurements above 400 K to help define and facilitate future dissemination routes.
- Collaborative Research: A new task group will focus on primary thermometry (specifically non-contact and acoustic gas thermometry) to realize the kelvin between 303 K and 1235 K. The goal is to develop ultra-low uncertainty values of $T-T_{90}$ with full uncertainty characterization.

- Future Outlook: Research into novel "*in situ*" primary thermometry methods (such as Johnson noise, Doppler Broadening, and ring resonator thermometry) will continue. By 2030, these technologies are expected to reach sufficiently high technology readiness levels (TRL) to clarify their role in practical traceable thermometry.

Key advances required for Contact Thermometry and Temperature Scales:

- Thermometer Alternatives: There is an urgent need to find alternative high performance temperature sensors to replace the no-longer available Rhodium-Iron thermometers below 25 K and to address the reliability issues of current standard platinum resistance thermometers (SPRTs). Research into improving current high-temperature SPRTs (HTSPRTs) and into pure-metal thermocouples is being undertaken to improve contact thermometry realization and dissemination above 933 K (Al freezing point).
- Scale Refinement (ITS-90 and PLTS-2000), efforts focus on:
 - reducing the non-uniqueness of the ITS-90 through improved reference functions
 - addressing the ongoing un-resolved deviations below 8 mK in the PLTS-2000
 - finding and preparing a viable alternative to the Mercury Triple Point which is required for safety and practical use.
- Uncertainty and Impurity Analysis: The CCT will continue to collect crystallographic data to better estimate uncertainties caused by chemical impurities in fixed-point materials.
- Guide Updates: Future guides will include updated secondary reference points (e.g., the lambda-point of helium-4) and improved recommendations for validating fixed-point cells.
- Thermodynamic Integration: New data above 400 K will be used to improve $T-T_{90}$ estimates, facilitating easier user access to thermodynamic temperature via the existing scale.
- Monitoring and Validation: The group will continue to track the progress of practical primary thermometry and self-validating sensors to determine if an update (e.g. add a new primary thermometry method that can attain sufficiently low uncertainties) to the *MeP-K* is necessary.

Key advances required in High-Temperature and Non-Contact Thermometry:

- Replacing ITS-90 at High Temperatures: High-Temperature Fixed Points (HTFPs) are becoming the standard for high temperature metrology above the Silver (Ag) point. In this region, thermodynamic temperature realization (by relative radiometric thermometry) is expected to eventually supplant the ITS-90 scale.
- Global Validation: Regional Metrology Organizations (RMOs) will conduct Key Comparisons (KCs) linked to CCT-K10. These comparisons will validate the global accuracy of non-contact temperature scales and substantiate Calibration and Measurement Capabilities (CMCs) above the Ag freezing point.
- Radiometric Research: A new task group has been established to determine the best technical approaches for radiometric measurements of $T-T_{90}$ above the Tin (Sn) point, with a report expected by 2028.
- Industrial Standardization: CCT experts are collaborating with the International Electrotechnical Commission (IEC) to improve industrial standards for two-colour pyrometry and thermal imaging, ensuring these commercial technologies are grounded in sound metrological principles.
- Digital Infrastructure: Support is being provided to develop an Application Programming Interface (API) that allows for digital, automated access to $T-T_{90}$ data and its associated uncertainties.
- Body Temperature Metrology: The task group dedicated to this area has completed its primary work; the final remaining activity – a key comparison of body temperature calibrators – is scheduled for completion by 2028.

Thermophysical quantities:

- CMC Implementation: CMCs for infrared spectral normal emissivity, thermal conductivity, and thermal diffusivity are to be submitted, approved, and uploaded following the agreed-upon schedule and *ad hoc* processes.
- New Strategic Actions: The group will begin drafting official guidelines and protocols for future Key Comparisons. This includes measuring and assessing uncertainties for specific radiative, transport, and caloric quantities.

Standardization and strategy for humidity metrology:

- **Terminology and Definitions:** Ongoing efforts are directed towards creating unambiguous terminology and units for humidity in collaboration with international bodies like International Organization for Standardization (ISO) and World Meteorological Organization (WMO). A primary goal is the formal internationally agreed definition of Relative Humidity and its realization within the SI system.
- **Mathematical Framework:** The group continues to develop equations for evaluating and interconverting various humidity quantities, supported by the International Association for the Properties of Water and Steam (IAPWS).
- **Climate and Environmental Impact:** Metrological support is being provided for Net-Zero emissions initiatives through training and uncertainty evaluation guidance.
- **Technical Infrastructure:** Research is continuing into water vapour enhancement factors across different gases and pressures. New infrastructure is being developed to support metrology for moisture in materials.
- **Digital information services** are being established to provide modern access to humidity data.

Environmental Metrology and Climate Initiatives:

- **Global Climate Monitoring:** CCT members will support the WMO and GCOS (Global Climate Observing System) in the pilot phase of the Global Surface Reference Network (GSRN), focusing on station nomination and refining measurement requirements.
- **Infrastructure and Intercomparisons:** A world-wide intercomparison specifically for air temperature calibration methods is being planned.
- **Air Temperature Standards:** Efforts are under way to establish a formal practical definition of the air temperature measurand. A method for evaluating uncertainty in practical air temperature measurements will be proposed, leading to a new official calibration guide on the CCT website.
- **Research and Innovation:** Members will study the impact of AI in metrology and continue researching non-contact air temperature measurement methods.

Digital transformation and automation in thermal metrology:

- **API Development:** The group will complete the beta testing and publication of *MeP*-K-related APIs. They will also identify needs for new APIs to provide digital access to reference data for humidity, thermophysical quantities, and primary thermometry.
- **Digital Calibration Certificates (DCCs):** Efforts will focus on expanding DCCs to link directly with CCT APIs, the KCDB (CMCs), and the SI Digital Framework, ensuring strict version control. In collaboration with manufacturers, the group aims to enable a workflow where calibration results are automatically updated into end-user devices, removing the need for manual data entry.
- **Web and Information Infrastructure:** The CCT will advise the BIPM on its website redesign and document repository to improve usability. A specific goal is to solve the issue of search engines displaying outdated document versions and to improve the internal search functionality on the BIPM site.
- **Comparison Analysis Tools:** In coordination with WG-KC, the group will explore using the Digital Metrology Expert (DME) software to analyse key and supplementary comparisons, potentially integrating it with the NIST Decision Tree and other digital resources.

Activities and achievements since the last meeting of the CGPM

Main activities and achievements

Temperature Standards and Traceability

- ITS-90 Maintenance and Uncertainty: Maintained the ITS-90 as the global foundation for traceable temperature measurement and completed non-uniqueness studies to clarify the magnitude of key uncertainties in the realization of the scale.
- Low-Uncertainty Data: Measurements performed and a collation published of updated, low-uncertainty $T-T_{90}$ data for temperatures below 335 K.
- Kelvin Redefinition and HTFPs: Established direct traceability to the redefined kelvin (from ~1300 K to ~3000 K) via the thermodynamic temperatures of four new High-Temperature Fixed Points (HTFPs): WC-C, Ru-C, Pd-C, and Fe-C. This completed the HTFP additions to the *MeP-K* annex in May 2024. These can now be used to realize low uncertainty temperatures, T or T_{90} , in NMIs and advanced calibration laboratories.
- Comparison Completion: Finished the CCT-K10 key comparison for temperatures above the silver point, which was the first to combine non-contact thermometers and HTFPs to substantiate CMCs in both ITS-90 and thermodynamic temperature.
- Scale Development: Established low-uncertainty HTFP thermodynamic temperature values from Fe-C to WC-C, enabling the realization of low-uncertainty scales in NMIs and advanced laboratories.
- Guidance: A new appendix of the Guide to the Realization of the ITS-90 dealing with the uncertainties in the realization of ITS-90 metal freezing points using sealed cells was prepared in 2021².

Primary and Industrial Thermometry

- Formalism Publication: Prepared and published a peer-reviewed study summarizing the formalism for new practical thermometry methods capable of providing *in situ* traceability³.
- Industrial Standardization: Established formal links to provide metrological input for industrial standards regarding thermal imagers and two-colour pyrometers.
- Public Health Support: Published guides in English and Spanish for tympanic, forehead, and thermal imaging fever screening in response to the COVID-19 pandemic⁴.

Humidity and Environmental Metrology

- Humidity Frameworks: Continued development of humidity definitions and nomenclature. Development of a comprehensive document on humidity primary realizations and fostering the harmonization of the nomenclature, in particular related to relative humidity.
- Stakeholders' engagement: Formal collaboration established many international organizations and working groups in the climate field.
- Support in the validation of records associated with extreme climate events with main focus on the extreme values of temperature

Digitalization

- Digital *MeP-K*: Developed and published a restructured, machine-readable version of the *MeP-K* (designated "2019D") on the BIPM website.

² [https://www.bipm.org/documents/20126/41773843/Guide ITS-90 2 4 MetalFixedPoints Appendix-1.pdf/792eb42d-d98c-9e35-78b4-c7fab1394f9?version=1.7&t=1635510850651&download=true](https://www.bipm.org/documents/20126/41773843/Guide+ITS-90+2+4+MetalFixedPoints+Appendix-1.pdf/792eb42d-d98c-9e35-78b4-c7fab1394f9?version=1.7&t=1635510850651&download=true)

³ <https://doi.org/10.1098/rsta.2024.0453>

⁴ [https://www.bipm.org/documents/20126/41773843/Best Practice Guide human body temp measurement thermal imager screening.pdf/0d8f88c1-9ef6-2e26-0d95-b4fa47f87e43?version=2.0&t=1693300587635&download=true](https://www.bipm.org/documents/20126/41773843/Best+Practice+Guide+human+body+temp+measurement+thermal+imager+screening.pdf/0d8f88c1-9ef6-2e26-0d95-b4fa47f87e43?version=2.0&t=1693300587635&download=true)
<https://www.bipm.org/documents/20126/41773843/Best%20Practice%20Guide%20for%20Forehead%20Thermometers.pdf/7550747b-1344-7416-3e7a-ec54f863ed5c?version=1.3&t=1652455631920&download=true>
<https://www.bipm.org/documents/20126/41773843/Best%20Practice%20Guide%20for%20Infrared%20Ear%20Thermometers.pdf/52e3d750-f282-beca-8b5d-bfb0d748d304?version=1.6&t=1652452565611&download=true>

- API Development: Collaborated with the BIPM to develop APIs that provide both human and machine-actionable access to digital functions and reference data related to the *MeP-K*.
- Calibration Certificates: Performed a comprehensive review of NMI progress regarding the implementation of thermometry Digital Calibration Certificates (DCCs), including their schema and templates.
- Strategic Advising: Provided technical advice to the BIPM during the development and testing phases of the SI Digital Framework.
- Archiving: Developed and submitted a formal document indexing and archiving suggestion to the CCT and CIPM for potential implementation across all Consultative Committees.

Challenges and difficulties

The current transition toward a more digitalized and thermodynamic-based measurement framework presents several profound and multi-dimensional challenges for the global thermal metrology community. At a technical level, a primary difficulty lies in resolving the discrepancies observed in primary thermometry results above 400 K, an essential step to consolidate the practical implementation of the kelvin redefinition. This challenge is compounded by the issue of "non-uniqueness" in Standard Platinum Resistance Thermometers (SPRTs) within the ITS-90 scale, as the quality of current manufacturing remains highly variable. This inconsistency significantly compromises the reproducibility and reliability of measurements across various temperature ranges, making it difficult to maintain a uniform global standard.

Furthermore, there is growing concern regarding the vulnerability of the supply chain for critical materials. The scarcity of rhodium-iron (RhFe) sensors severely limits capabilities in cryogenic ranges, while increasing environmental regulatory pressure necessitates the urgent search for reliable substitutes for the mercury triple point. These alternatives must be capable of maintaining the extreme accuracy required. In sectors with direct social impact, such as environment and health, the obstacles are equally significant. In environmental metrology, critical gaps persist in the understanding and standardization of air temperature and relative humidity measurements, hindering the harmonization of long-term climate data. Meanwhile, medical metrology faces both the challenge of establishing robust SI traceability for regulated clinical devices, chiefly clinical thermometers (a practice that remains non-existent in many national regulatory frameworks, affecting diagnostic reliability) and also providing definitive guidance on the best performing clinical thermometers.

In parallel, the shift toward Industry 4.0 demands the development of "*in situ*" and autonomous traceability systems that can guarantee continuous, correct temperature and other thermal measurements in advanced production environments. The proliferation of massive sensor networks also introduces unprecedented complexity in analysing uncertainty propagation, particularly when low-cost, low-fidelity devices are integrated into critical systems. Finally, the integration of sensing methods at the technological frontier such as quantum thermometry and nanoscale luminescence require the creation of robust characterization protocols to successfully transition these innovations from the laboratory to industrial practice. Overcoming these challenges will require not only scientific breakthroughs but also new temperature metrological approaches and a sustained effort in knowledge transfer and academic training of a new generation of metrologists capable of managing and using this constantly evolving technological ecosystem.

The coordination and execution of Key and Regional Comparisons in the field of thermal metrology present a formidable strategic challenge, primarily due to the inherent technical complexity of thermal measurements and the rigorous operational demands they impose. These exercises often require extensive measurement timeframes, as establishing thermal equilibrium and performing high-precision characterizations at the national metrology level cannot be expedited without compromising data integrity. This prolonged duration inherently delays the dissemination of results and the subsequent update of Calibration and Measurement Capabilities (CMCs).

Furthermore, a critical difficulty lies in the identification and procurement of suitable transfer standards. Finding artefacts with the requisite long-term stability is increasingly complex; any drift or instability in the standards during the comparison loop poses a significant risk to the calculation of robust Key Comparison Reference Values. This technical hurdle is exacerbated by the logistical perils of international transport. The delicate nature of high-precision thermometers or fixed-

point cells makes them highly susceptible to mechanical shock and environmental fluctuations during transit. Such factors not only threaten the physical integrity of the instruments but can also introduce subtle shifts in their characteristics, potentially undermining the global comparability of measurements and the overall effectiveness of the CIPM Mutual Recognition Arrangement (MRA).

Outlook in the short and long term

In the short term (2025–2030), the primary objective is the seamless integration of the kelvin redefinition into the global measurement system. This involves finalizing the technical validation of High-Temperature Fixed Points (HTFPs) to complete the *Mise en Pratique* (MeP-K) annexes, providing NMIs with the tools to realize thermodynamic temperature with unprecedented accuracy. Effort will be directed toward resolving existing discrepancies in primary thermometry above 400 K and mitigating the "non-uniqueness" issues currently affecting the ITS-90.

Simultaneously, a rapid digital transformation is under way. The short-term horizon includes the widespread adoption of Digital Calibration Certificates (DCCs) and the deployment of machine-readable versions of reference documents (such as the "2019D" MeP-K). These tools, supported by robust APIs, will allow metrological data to be integrated directly into automated industrial processes and global climate observation networks. The CCT also aims to provide immediate, standardized solutions for emerging challenges, such as a unified definition for the air temperature measurand to support climate change monitoring.

In the long term (beyond 2030), the CCT envisions a paradigm shift toward "Traceability at the Point of Measurement". The ultimate goal is to evolve beyond the traditional reliance on the periodic calibration of physical artefacts. By advancing practical primary thermometry – leveraging techniques like Johnson Noise (JNT), Doppler Broadening (DBT), and Ring Resonator (RRT) thermometry – the temperature metrology community aims to develop sensors that are inherently traceable to the SI kelvin *in situ*. This would enable "always-right" measurements in autonomous manufacturing, deep-space exploration, and remote environmental monitoring.

Furthermore, the long-term outlook contemplates the potential retirement or fundamental restructuring of the ITS-90 in favour of a purely thermodynamic-based framework. As technology matures, the CCT will also lead the standardization of frontier fields, such as quantum thermometry and nanoscale luminescence (the latter for clinical diagnostics). This future ecosystem will be underpinned by a global "SI Digital Framework," ensuring that metrological traceability is not just a laboratory requirement, but a real-time, automated feature of the global digital economy.

CCT Data

CCT was set up in 1937

President: Dr D. del Campo Maldonado

Executive Secretary: Dr Stéphane Solve

Membership 25 members and 4 observers

List of CCT members and observers

<https://www.bipm.org/en/committees/cc/cct/members>

Meetings since the 27th CGPM

meeting:

31st Meeting - May 2024

32nd Meeting - May 2026

Full reports of the CCT

meetings:

<https://www.bipm.org/en/committees/cc/cct/publications>

Nine Working Groups:

<https://www.bipm.org/en/committees/cc/cct>

- Calibration and Measurement Capabilities (WG-CMC)
- Contact Thermometry (WG-CTH)

- Digitalization (WG-DIG)
- Environment (WG-ENV)
- Humidity (WG-HU)
- Key Comparisons (WG-KC)
- Non-Contact Thermometry (WG-NCTH)
- Strategic Planning (WG-SP)
- Thermophysical Quantities (WG-THQ)

Four Task Groups:

- Future Thermodynamic Temperature Traceability (CCT-TG-CTh-TTT)
- Air Temperature (TG-Env-AirT)
- Determination of thermodynamic temperature, T , by non-contact thermometry between the Sn and Ag points with < 10 ppm uncertainty (CCT-TG-SNAG)
- Temperature sensor networks (TG-DIG-DTMN)

CCT Comparison activity	Completed	In progress	Planned
CCT key comparisons (and supplementary comparisons)	23	8 (3)	1
BIPM comparisons	0	0	0
CCT pilot studies	0	0	0
CMCs	3 126 thermometry CMCs registered in the KCDB (13 May 2026)		