**Introduction to EURAMET TC-T**

This introductory material is intended to help new contact persons of the EURAMET TC-T (The technical committee for thermometry) to better understand the function, structure and purpose of this organisation and to clarify the specific meanings of abbreviations used during presentations and communication in the specific field of metrology (Thermometry, Humidity and Thermophysical quantities of materials).

**Useful resources**

A number of web resources are available which contain valuable information for TC-T contact persons. The main web portals of EURAMET and BIPM are the most important sources:

* [www.euramet.org](http://www.euramet.org)
* [www.bipm.org](http://www.bipm.org)

An introduction to metrology – mainly the organisational and structural matters – can be found in [Metrology in short](http://www.euramet.org/publications-media-centre/documents-and-publications/metrology-in-short/), found on the EURAMET web pages. It is longer than the name suggests.

[The technical committee for thermometry](http://www.euramet.org/technical-committees/thermometry/) has its own web pages, with a quick access to all [projects](http://www.euramet.org/technical-committees/thermometry/tc-t-projects/) conducted within the committee.

**Organisational structure**

The organisational units of EURAMET are the General Assembly, the chair-persons, the Board of Directors, the Technical committees, the EMPIR committee, the Research council, the management support unit, and the secretariat. Their roles are described on the [EURAMET web page](http://www.euramet.org/about-euramet/organisation/).

The [rules of procedure](http://www.euramet.org/get/?tx_stag_base%5Bfile%5D=3871&tx_stag_base%5Baction%5D=downloadRaw&tx_stag_base%5Bcontroller%5D=Base) is the fundamental document describing how the work is carried out in the Euramet units.

Mostly the [technical committees](http://www.euramet.org/technical-committees/) mirror the [consultative committees](http://www.bipm.org/en/committees/cc/) of [CIPM](file:///C%3A%5Ctmp%5C2015%5Ceuramet%5Cintro_SMU-PP.docx#CIPM), with a few exceptions.

**Key Comparisons**

An important part of the EURAMET activity is to disseminate traceability to the [NMI](file:///C%3A%5Ctmp%5C2015%5Ceuramet%5Cintro_SMU-PP.docx#NMI)s in Europe. This is accomplished via regional comparisons. The purpose, organisation, data analysis and result handling is explained in other resources, for example in the [technical description of comparisons](http://www.bipm.org/utils/common/documents/CIPM-MRA/CIPM-MRA-D-05.pdf) within the CIPM MRA.

For regional key comparisons the short name given follows a stringent code: typically a temperature or humidity comparison is called EURAMET.T-K<number> or EUROMET.T-K<number>. The “K” indicates a key comparison (as opposed to S for supplementary comparison), and the number which key comparison. The number refers to a CCT comparison, so the EURAMET.T-K9 will link to the same reference values as the SIM.T-K9, for example.

The online [key comparison database](http://kcdb.bipm.org/) is searchable by comparison names, nations, discipline etc. EURAMET comparisons may also be found using the [project search functionality](http://www.euramet.org/technical-committees/search-tc-projects/) on the EURAMET web pages.

**EURAMET PROJECTS**

Members are encouraged to formalise their cooperation as EURAMET projects. Such projects are categorised in one of the following areas:

* Cooperation in research
* Comparison in measurement standards
* Traceability
* Consultation on facilities

Comparisons other than those registered as key comparisons by BIPM can be carried out as EURAMET projects.

Organisations may participate if they fulfil the [Eligibility criteria for the participation in EURAMET TC projects](http://www.euramet.org/?tx_stag_base%5Bfile%5D=21585&tx_stag_base%5Baction%5D=downloadRaw&tx_stag_base%5Bcontroller%5D=Base).

Annual reporting of projects is expected. Progress reports and Final reports are submitted by e-mail to the TC-T Chair by the TC-T meeting each year. The report files are named “XXXX\_THERM\_Progress/Final\_YYYY” where XXXX is the project number given by EURAMET Secretariat and YYYY is the year of report.

Projects are not financially supported by the EURAMET organisation (for funded projects please see the [EMPIR](http://msu.euramet.org/) programme website).

Registration and reporting is carried out through TC-T contact persons and the TC-T Chair. The [forms](http://www.euramet.org/technical-committees/search-tc-projects/) are available on the Euramet webpage:

* [Report template](http://www.euramet.org/get/?tx_stag_base%5Bfile%5D=21587&tx_stag_base%5Bidentifier%5D=%252Ftc%252FG-OPS-TMP-025_EURAMET_Project_Report.docx&tx_stag_base%5Baction%5D=downloadRaw&tx_stag_base%5Bcontroller%5D=Base)
* [Traceability projects proposal](http://www.euramet.org/get/?tx_stag_base%5Bfile%5D=21586&tx_stag_base%5Bidentifier%5D=%252Ftc%252FG-OPS-TMP-026_EURAMET_Project_Form_Traceability.docx&tx_stag_base%5Baction%5D=downloadRaw&tx_stag_base%5Bcontroller%5D=Base)
* [Project proposal](http://www.euramet.org/get/?tx_stag_base%5Bfile%5D=21588&tx_stag_base%5Bidentifier%5D=%252Ftc%252FG-OPS-TMP-024_EURAMET_Project_Form.docx&tx_stag_base%5Baction%5D=downloadRaw&tx_stag_base%5Bcontroller%5D=Base)

**Advice**

* You can join WG meetings as an observer
* Talk to at least one unknown person every year
* Try to establish the simple projects with others – a simple comparison or a small computation can be enough to spark more interesting ideas

**Acronyms, abbreviations and concepts**

With a few exceptions the list below explains metrology specific abbreviations. It is organised in different sections. The first section is an alphabetical list, followed by topical lists with more detailed explanations. The detailed lists associate a unique number with each abbreviation.

Non-native users of English may find the following resources valuable:

* Oxford dictionary online <http://www.oxforddictionaries.com/>
* Acronym web page <http://www.acronymfinder.com/>

Useful web resources for metrology specific acronyms

* NMIs on the web <http://www.euramet.org/search-contacts/search-institutes/>

General metrology vocabulary (VIM3) <http://www.bipm.org/en/publications/guides/vim.html>

**Alphabetical list of abbreviations**

| *Acronym* | *Id in list* | *Acronym* | *Id in list* |
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**Committees, organisations, associations etc**

|  |  |
| --- | --- |
| **Acronym** | **Description** |
| 1. BIPM
 | Bureau International des Poids et Mesures (International Bureau of Weights and Measures)The intergovernmental organization established by the Metre Convention, through which Member States act together on matters related to measurement science and measurement standards.<http://www.bipm.org>  |
| 1. CC
 | Consultative CommitteeA committee under the CIPM that brings together the world's experts in their specified fields as advisers on scientific and technical matters. The committees are mostly mirrored by EURAMET technical committees (see [TC](file:///C%3A%5CUsers%5Caao%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.IE5%5CHHVYQIXJ%5C254699_READONLY.DOCX#TC)), except the [CCU](http://http:/www.bipm.org/en/committees/cc/ccu/). The committees may establish [working groups](file:///C%3A%5CUsers%5Caao%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.IE5%5CHHVYQIXJ%5C254699_READONLY.DOCX#WG) or [task groups](file:///C%3A%5CUsers%5Caao%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.IE5%5CHHVYQIXJ%5C254699_READONLY.DOCX#TG) to handle various tasks. <http://www.bipm.org/en/committees/cc/cipm-consultative-committees.html>  |
| 1. CCT
 | Consultative Committee for Thermometry<http://www.bipm.org/en/committees/cc/cct/>  |
| 1. CCT-WG
 | Consultative Committee for Thermometry – working groups |
| 1. CGPM
 | Conférence Générale des Poids et Mesures (General Conference on Weights and Measures)A conference that brings together the delegates of the governments of the Member States with observers from the Associates of the CGPM. It adopts resolutions addressing scientific, institutional matters, future redefinition of the International System of Units, the SI etc.<http://www.bipm.org/en/worldwide-metrology/cgpm/>  |
| 1. CIMO
 | Commission for instruments and methods of observationCIMO promotes and facilitates international standardisation and compatibility of instruments and methods of observations used in meteorology.<http://www.wmo.int/pages/prog/www/CIMO/AboutCIMO.html>  |
| 1. CIPM
 | Comité international des poids et mesures (International Committee for Weights and Measures)The principal task of the CIPM is to promote world-wide uniformity in units of measurement and it does this by direct action or by submitting draft resolutions to the General Conference ([CGPM](http://www.bipm.org/en/worldwide-metrology/cgpm/)).<http://www.bipm.org/en/committees/cipm/>  |
| 1. EA
 | European co-operation for AccreditationThe association of national accreditation bodies in Europe recognised by their national Governments to assess and verify—against international standards—organisations that carry out evaluation services such as certification, verification, inspection, testing and calibration<http://www.european-accreditation.org/about-us>  |
| 1. EMPIR
 | European Metrology Programme for Innovation and ResearchA European research programme executed by EURAMET, and financed partly by the participating countries and partly the EU.<http://www.euramet.org/research-innovation/empir/><http://msu.euramet.org/> |
| 1. EMRP
 | The predecessor to EMPIR.<http://www.euramet.org/research-innovation/emrp/> <http://www.emrponline.eu/>  |
| 1. ESRMG
 | Early-stage research mobility grantThis was a grant within EMRP intended to stimulate exchange of young guest researchers.<http://www.euramet.org/research-innovation/emrp/researcher-grants-emrp/>  |
| 1. GUM
 | Guide to the expression of uncertainty in measurementFor an electronic version and accompanying supplements visit<http://www.bipm.org/en/publications/guides/gum.html>  |
| 1. IAPWS
 | The International Association for the Properties of Water and Steam<http://www.iapws.org/>  |
| 1. IEC
 | International electrotechnical commission<http://www.iec.ch/>  |
| 1. ILAC
 | International Laboratory Accreditation Cooperation<http://ilac.org/>  |
| 1. IPC
 | International pyrheliometer comparison |
| 1. JCRB
 | Joint Committee of the Regional Metrology Organizations and the BIPM |
| 1. JRP
 | Joint Research Projects |
| 1. PRT
 | Proposed Research Topic |
| 1. REG
 | Researcher Excellence Grant<http://www.euramet.org/research-innovation/emrp/researcher-grants-emrp/> |
| 1. RMG
 | Researcher mobility grant<http://www.euramet.org/research-innovation/emrp/researcher-grants-emrp/> |
| 1. RMO
 | Regional Metrology Organization<http://www.bipm.org/en/worldwide-metrology/regional/>  |
| * 1. AFRIMETS
 | [Intra-Africa Metrology System](http://www.afrimets.org/SitePages/Home.aspx) |
| * 1. APMP
 | [Asia Pacific Metrology Programme](http://www.apmpweb.org/) |
| * 1. COOMET
 | [Euro-Asian Cooperation of National Metrological Institutions](http://www.coomet.org/) |
| * 1. EURAMET
 | [European Association of Metrology Institutes](http://www.euramet.org) |
| * 1. SIM
 | [Inter-American Metrology System](http://www.sim-metrologia.org.br/)  |
| 1. RPOT
 | Research potential project<http://www.euramet.org/research-innovation/capacity-building/research-potential-projects/>  |
| 1. SIP
 | Support for impact project |
| 1. SRT
 | Selected research topic |
| 1. TC
 | Technical committee. EURAMET technical committees are found at <http://www.euramet.org/technical-committees/>. They conduct comparisons, facilitate research cooperation, training and traceability dissemination between European countries.TC-L (length)TC-T (temperature)TC-AUV (Acoustics, ultrasound, vibrations)TC-EM (Electricity and magnetism)TC-FLOW (flow)TC-IM (Interdisciplinary metrology)TC-IR (Ionising radiation)TC-M (mass and related)TC-MC (chemistry)TC-PR (photometry and radiometry)TC-Q (quality)TC-TF (time and frequency) |
| 1. TG
 | Task groupA temporary consultative committee within the BIPM with a defined and final list of tasks. It is dissolved when the task has been accomplished. |
| 1. WG
 | Working groupA consultative committee within the BIPM or RMO with a defined field of focus. In EURAMET TC-T we have four active [working groups](http://www.euramet.org/technical-committees/thermometry/working-groups-restricted/): best practice, CMC review, strategy, and thermophysical properties. |
| 1. WMO
 | World Meteorological Organisation, <https://www.wmo.int>  |

**Terms and concepts**

|  |  |
| --- | --- |
| **Acronym** | **Description** |
| 1. ATA Carnet
 | Admission Temporaire/Temporary AdmissionAn international customs document that permits the duty-free and tax-free temporary export and import of goods. |
| 1. BoD
 | Board of directors. The EURAMET BoD is listed at<http://www.euramet.org/about-euramet/committees-and-bodies/board-of-directors/>  |
|
| 1. CMC
 | Calibration and measurement capabilities, see also KCDB<http://www.bipm.org/utils/common/CIPM_MRA/CIPM_MRA-D-04.pdf>  |
| 1. DI
 | Designated Institutes[www.bipm.org/utils/en/pdf/designation.pdf](http://www.bipm.org/utils/en/pdf/designation.pdf) |
| 1. FP
 | Fixed point |
| 1. HTFP
 | High-temperature fixed pointsFixed point cells that reproduce higher temperature that the freezing point of silver (961.78 °C).  |
| 1. HTGHP
 | High-Temperature Guarded Hot Plate |
| 1. HTSPRT
 | High-temperature standard platinum resistance thermometers |
| 1. IPRT
 | Industrial platinum resistance thermometersSee [IEC 60751:2008](https://webstore.iec.ch/publication/3400) |
| 1. KC
 | Key ComparisonWorldwide comparisons to prove measurement capabilities of NMIs. The comparisons are usually carried out in a hierarchical manner, with only a few participants from each RMO. Those NMIs in turn disseminate traceability via regional comparisons. Examples of TC-T specific comparisons are listed below.<http://www.bipm.org/utils/common/CIPM_MRA/CIPM_MRA-D-05.pdf> |
| * 1. EURAMET K5
 | Intercomparison of local realizations of the ITS-90 above Silver point. Started in 1997 ended in 2013. Participated NMIs: VSL, CEM, IPQ, MKEH, SMU, SP, UME. |
| * 1. EURAMET.T-K1
 | Realisations of the ITS-90, 2.4 K to 24.5561 K, using rhodium-iron resistance thermometers. Started in 2010 ended in 2015. Participated NMIs: PTB, INRiM, INTiBS, NPL, VSL. |
| * 1. EURAMET.T-K6.1
 | Bilateral comparison of the realisations of local dew/frost-point temperature scales in the range -70 °C to +20 °C. Started in 2009 ended in 2010. Participated NMIs: HMI/FSB-LPM, MIKES. |
| * 1. EURAMET.T-K7.2
 | Comparison of Water Triple Point Cells. Started in 2010 ended in 2013. Participated NMIs: VSL, INTiBS |
| * 1. EURAMET.T-K7.3
 | Bilateral comparison of triple point of water cells. Started in 2011 ended in 2013. Participated NMIs: VSL, GUM. |
| * 1. EUROMET.T-K4
 | Comparison of the realizations of the ITS-90 at the freezing points of Al(660,323 °C) and Ag (961,78 °C). Started in 2004 ended in 2008. Participated NMIs: PTB, BEV, CEM, CMI, EIM, FTMC, GUM, HMI, INM, INRiM, IPQ, JV, LNE-INM, METAS, MIKES, MIRS, MKEH, NPL, SMU, SP, UME, VSL |
| * 1. EUROMET.T-K7.1
 | Key comparison of water triple point cells (regional extension of CCT-K7), Started in 2008 ended in 2012. Participated NMIs: SMU, CMI, GUM |
| * 1. EUROMET.T-K9
 | Regional key comparison: ITS-90 SPRT Calibration from the Ar TP to the Zn fixed point. |
| 1. KCDB
 | Key comparison data baseAvailable online at<http://kcdb.bipm.org/>Brief explanation of the KCDB at<http://kcdb.bipm.org/kcdb_faq.asp>  |
| 1. KCRV
 | Key Comparison Reference ValueThe key comparison reference value is the reference value resulting from the measurements taken in a CIPM key comparison, accompanied by its uncertainty (normally the standard uncertainty). |
| 1. KO
 | Kick-off, as in KO-meeting, a meeting to launch a joint research project. |
| 1. MRA
 | Mutual recognition arrangement<http://www.bipm.org/en/cipm-mra/>  |
| 1. NMI
 | National Metrology Institute |
| 1. NMS
 | National measurement system |
| 1. PRT
 | Platinum resistance thermometer |
|  |  |
| 1. RP
 | Recommended practice |
| 1. SC
 | Supplementary comparisonA supplementary comparison is a comparison, usually carried out by an RMO to meet specific needs not covered by key comparisons (e.g. regional needs), for instance measurements of specific artefacts, or measurements of parameters not within the “normal” scope of the Consultative Committees. |
| 1. SC
 | Sub-committeeSome of the technical committees cover more than one related disciplines, which may be handled in subcommittees. An example is our subcommittee for humidity.  |
| 1. SI
 | Système International d'Unités (The International System of Units) |
| 1. SPRT
 | Standard platinum resistance thermometers |
| 1. ToR
 | Terms of reference |
| 1. TQM
 | Thermophysical quantities of materials |
| 1. UTC
 | Coordinated Universal Time, <http://www.bipm.org/en/bipm/tai/> |