

Mutual recognition in metrology

The Convention of the Metre and international metrology bodies

The Convention of the Metre (Convention du Mètre) is a diplomatic treaty which gives authority to the General Conference on Weights and Measures (Conférence Générale des Poids et Mesures, CGPM), the International Committee for Weights and Measures (Comité International des Poids et Mesures, CIPM) and the International Bureau of Weights and Measures (Bureau International des Poids et Mesures, BIPM) to act in matters of world metrology. This includes the need to demonstrate equivalence between national measurement standards and to provide for the mutual recognition of calibration and measurement certificates issued by national metrology institutes (NMIs).

The Convention, first signed in 1875 and modified slightly in 1921, remains the basis of international agreement on units of measurement. There are now fifty-one Member States, including all the major industrialized countries.

Why mutual recognition?

The ultimate aim of mutual recognition is to encourage free trade between countries by removing technical barriers giving customers the widest choice of goods and services at the lowest cost. Mutual recognition, creates the basis for a “product tested once and accepted everywhere” principal to be established.

Through the mutual recognition of National Standards (to which measurements are traceable) and of the accreditation bodies within different countries, customers are able to make an informed decision when comparing products and services even when they come from different countries.

A certificate issued by a laboratory or company registered by a recognised accreditation body (or indirectly by a body accredited by it) and with measurements traceable to one country's National Standards should therefore be acceptable in any other country where their own national measurements institute and recognised accreditation body(ies) are also signatories to the CIPM mutual recognition agreement (MRA) and ILAC MRA (see below).

Mutual Recognition between National Metrology Institutes

At a meeting held in Paris on 14 October 1999, the directors of the NMIs of thirty-eight Member States of the Metre Convention and representatives of two international organisations signed a MRA for national measurement standards and for calibration and measurement certificates issued by NMIs.



The CIPM MRA has now been signed by the representatives of 85 institutes – from 49 Member States, 33 Associates of the CGPM, and 3 international organisations – and covers a further 137 institutes designated by the signatory bodies.

Under the MRA, all participating institutes recognise the validity of each other's calibration and measurement certificates for the quantities, ranges and measurement uncertainties specified in Appendix C of the CIPM MRA. This arrangement facilitates the international acceptance of test data, and the elimination of technical barriers to trade.

The technical basis of this mutual recognition is the test results obtained over time of key comparisons carried out by the Consultative Committees of the CIPM, the Bureau International des Poids et Mesures (BIPM) and the regional metrology organisations (RMOs). This data is published by the BIPM and maintained in the key comparison database as Appendix B of the CIPM MRA.

UKAS is the United Kingdom member of European Co-operation on Accreditation (EA), the International Laboratory Accreditation Cooperation (ILAC) and the International Accreditation Forum (IAF). If a certificate is issued under a laboratory's scope of accreditation then the certificate should be recognised in all other countries whose national accreditation bodies are signatory to the EA & ILAC multilateral agreement.

International Cooperation

ILAC is the international co-operation between the various laboratory accreditation schemes operated throughout the world. ILAC was formalised as a co-operation in 1996 when 44 national bodies signed a Memorandum of Understanding (MOU). This MOU provided the basis for the further development of the Co-operation and the establishment of the multilateral recognition arrangement (MRA).

The ILAC MRA has 72 signatories who are “full members” of ILAC. There are also nearly 70 other members of ILAC of different membership levels. Refer to www.ilac.org for more details

ILAC Mutual Recognition Agreement (MRA) signatories

FULL MEMBERS

1. Organismo Argentino de Acreditacion (OAA), **Argentina**
2. National Association of Testing Authorities (NATA), **Australia**
3. Bundesministerium fur Wirtschaft, Familie und Jugend (BMWA), **Austria**
4. Belgian Accreditation Structure (BELAC), **Belgium**
5. Coordenação Geral de Acreditação, General Coordination for Accreditation (CGCRE), **Brazil**
6. Standards Council of Canada (SCC), **Canada**
7. Canadian Association for Laboratory Accreditation Inc. (CALA), **Canada**
8. Instituto Nacional de Normalización (INN), **Chile**
9. China National Accreditation Service for Conformity Assessment (CNAS), **People’s Republic of China**
10. Ente Costarricense de Acreditación (ECA), **Costa Rica**
11. Croatian Accreditation Agency (HAA), **Croatia**
12. National Accreditation Body of Republica de Cuba (ONARC), **Cuba**
13. Czech Accreditation Institute (CAI), **Czech Republic**
14. Danish Accreditation (DANAK), **Denmark**
15. Egyptian Accreditation Council (EGAC), **Egypt**
16. Finnish Accreditation Service (FINAS), **Finland**
17. Comite Francais d’Accreditation (COFRAC), **France**
18. Deutsche Akkreditierungsstelle GmbH (DakKS), **Germany**
19. Hellenic Accreditation System S.A. (ESYD), **Greece**
20. Oficina Guatemalteca de Acreditación (OGA), **Guatemala**
21. Hungarian Accreditation Board (NAT), **Hungary**
22. Hong Kong Accreditation Service (HKAS), **Hong Kong, China**
23. National Accreditation Board for Testing & Calibration Laboratories (NABL), **India**
24. National Accreditation Body of Indonesia (KAN), **Indonesia**
25. Irish National Accreditation Board (INAB), **Ireland**
26. Israel Laboratory Accreditation Authority (ISRAC), **Israel**
27. Sistema Italiano di Accreditemento (ACCREDIA), **Italy**
28. Japan Accreditation Board for Conformity Assessment (JAB), **Japan**
29. International Accreditation Japan (IA Japan), **Japan**
30. Voluntary EMC Laboratory Accreditation Center INC (VLAC), **Japan**
31. National Centre of Accreditation (NCA), **Kazakhstan**
32. Korea Laboratory Accreditation Scheme (KOLAS), **Republic of Korea**
33. Office Luxembourgeois d’Accréditation et de Surveillance (OLAS), **Luxembourg**
34. Department of Standards Malaysia (STANDARDS MALAYSIA), **Malaysia**
35. entidad mexicana de acreditación, a.c. (ema), **Mexico**
36. Dutch Accreditation Council (RvA), **Netherlands**
37. International Accreditation New Zealand (IANZ), **New Zealand**
38. Norsk Akkreditering (NA), **Norway**

39. Pakistan National Accreditation Council (PNAC), **Pakistan**
40. Papua New Guinea Laboratory Accreditation Scheme (PNGLAS),
Papua New Guinea
41. Philippine Accreditation Office (PAO), **Philippines**
42. Polish Centre for Accreditation (PCA), **Poland**
43. Instituto Portugues de Acreditacao (IPAC), **Portugal**
44. Romanian Accreditation Association (RENAR), **Romania**
45. Association of Analytical Centers “Analitica” (AAC “Analitica”), **Russia Federation**
46. Singapore Accreditation Council (SAC), **Singapore**
47. Slovak National Accreditation Service (SNAS), **Slovakia**
48. Slovenian Accreditation (SA), **Slovenia**
49. South African National Accreditation System (SANAS), **South Africa**
50. Entidad Nacional de Acreditacion (ENAC), **Spain**
51. Sri Lanka Accreditation Board for Conformity Assessment (SLAB), **Sri Lanka**
52. Swedish Board for Accreditation and Conformity Assessment (SWEDAC), **Sweden**
53. Swiss Accreditation Service (SAS), **Switzerland**
54. Taiwan Accreditation Foundation (TAF), **Chinese Taipei**
55. The Bureau of Laboratory Quality Standards, Department of Medical Sciences,
Ministry of Public Health, Thailand (BLQS-DMSc), **Thailand**
56. National Standardization Council of Thailand – Office of the National Accreditation
Council (NSC – ONAC), **Thailand**
57. Bureau of Laboratory Accreditation, Department of Science Service,
Ministry of Science and Technology (BLA-DSS), **Thailand**
58. Tunisian Accreditation Council (TUNAC), **Tunisia**
59. Turkish Accreditation Agency (TURKAK), **Turkey**
60. Dubai Municipality – Accreditation Department (DAC), **United Arab Emirates**
61. United Kingdom Accreditation Service (UKAS), **United Kingdom**
62. American Association for Laboratory Accreditation (A2LA), **USA**
63. National Voluntary Laboratory Accreditation Program (NVLAP), **USA**
64. International Accreditation Service, Inc (IAS), **USA**
65. ANSI-ASQ National Accreditation Board doing business as ACLASS, **USA**
66. Laboratory Accreditation Bureau (L-A-B), **USA**
67. Perry Johnson Laboratory Accreditation, Inc. (PJLA), **USA**
68. American Society of Crime Laboratory Directors/Laboratory Accreditation Board
(ASCLD/LAB), **USA**
69. AIHA Laboratory Accreditation Program, LLC (AIHA-LAP, LLC), **USA**
70. Forensic Quality Services (FQS), **USA**
71. Organismo Uruguayo De Acreditación (OUA), **Uruguay**
72. Bureau of Accreditation (BoA), **Vietnam**

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CIPM MRA signatories

1. Albania, Drejtoria e Pergjithshme e Metrologjise (DPM)
2. Argentina, Instituto Nacional de Tecnología Industrial (INTI)
3. Australia, National Measurement Institute (NMI)
4. Austria, Bundesamt für Eich- und Vermessungswesen (BEV)
5. Bangladesh, National Metrology Laboratory, Bangladesh Standards and Testing Institution (NML-BSTI),
6. Belarus, Committee for Standardization, Metrology and Certification of Belarus (Gosstandart),
7. Belgium, Quality and Safety Department, Ministry of Economic Affairs (Metrology Division)
8. Bolivia, Instituto Boliviano de Metrología (IBMETRO)
9. Bosnia and Herzegovina, Institute of Metrology of Bosnia and Herzegovina (IMBIH),
10. Brazil, Instituto Nacional de Metrologia, Normalização e Qualidade Industrial (INMETRO)
11. Bulgaria, Bulgarian Institute of Metrology (BIM)
12. Canada, National Research Council Canada (NRC),
13. Caricom, Caribbean Community (CARICOM)
14. Chile, Instituto Nacional de Normalización (INN)
15. China, National Institute of Metrology (NIM)
16. Chinese Taipei, Bureau of Standards, Metrology and Inspection (BSMI)
17. Costa Rica, Laboratorio Costarricense de Metrología (LACOMET)
18. Croatia, Croatian Metrology Institute (HMI)
19. Cuba, Oficina Nacional de Normalización (NC)
20. Czech Republic, Czech Metrology Institute (CMI)
21. Denmark, Danish Fundamental Metrology Ltd (DFM)
22. Ecuador, Instituto Ecuatoriano de Normalización (INEN)
23. Egypt, National Institute for Standards (NIS)
24. Estonia, Central Office of Metrology (AS METROSERT)
25. Finland, Mitatekniikan Keskus, Centre for Metrology and Accreditation (MIKES),
26. France, Laboratoire National de Métrologie et d'Essais (LNE),
27. Georgia, Georgian National Agency for Standards, Technical Regulations and Metrology, (GEOSTM)
28. Germany, Physikalisch-Technische Bundesanstalt (PTB)
29. Ghana, Ghana Standards Board (GSB)
30. Greece, Hellenic Institute of Metrology, (EIM)
31. Hong Kong (China), Standards and Calibration Laboratory (SCL)
32. Hungary, Hungarian Trade Licensing Office (MKEH)
33. India, National Physical Laboratory of India (NPLI)
34. Indonesia, Research Center for Calibration, Instrumentation and Metrology – Indonesian Institute of Sciences, Puslit (KIM-LIPI)
35. Ireland, NSIA National Metrology Laborator (NSAI NML)
36. Israel, National Physical Laboratory of Israel (INPL)
37. Italy, National Institute of Metrological Research (INRIM)
38. Jamaica, Bureau of Standards Jamaica (BSJ)

39. Japan, National Metrology Institute of Japan (NMIJ AIST)
40. Kazakhstan, Kazakhstan Institute of Metrology RSE (KazInMetr)
41. Kenya, Kenya Bureau of Standard (KEBS)
42. Korea (Republic of), Korea Research Institute of Standards and Science (KRISS)
43. Latvia, Latvian Metrology Bureau (LATMB)
44. Lithuania, State Metrology Service (VMT)
45. Macedonia, the FYR of, Bureau of Metrology, Ministry of Economy (BOM)
46. Malaysia, National Metrology Laboratory, SIRIM Berhad (NML-SIRIM)
47. Malta, Malta Standards Authority (MSA)
48. Mauritius, Mauritius Standards Bureau (MSB)
49. Mexico, Centro Nacional de Metrología (CENAM)
50. Moldova, Rep of, National Institute of Standardization and Metrology of the Republic of Moldova (INSM)
51. Netherlands, VSL Dutch Metrology Institute (VSL)
52. New Zealand, Measurement Standards Laboratory (MSL)
53. Norway, Norwegian Metrology Service/Justervesenet (JV)
54. Panama, Centro Nacional de Metrología de Panamá AIP (CENAMEP AIP)
55. Paraguay, Instituto Nacional de Tecnología y Normalización (INTN)
56. Peru, Instituto Nacional de Defensa de la Competencia y de la Protección de la Propiedad Intelectual (INDECOPI)
57. Philippines, National Metrology Laboratory (NMLPHIL)
58. Poland, Central Office of Measures (GUM)
59. Portugal, Instituto Português da Qualidade (IPQ)
60. Romania, National Institute of Metrology (INM)
61. Russian Federation, Rostekhnregulirovaniye of Russia (formerly the Gosstandart of Russia)
62. Saudi Arabia, Saudi Standards, Metrology and Quality Organization (SASO)
63. Serbia, Directorate of Measures and Precious Metals (DMDM)
64. Seychelles, Seychelles Bureau of Standards (SBS)
65. Singapore, National Metrology Centre, Agency for Science, Technology and Research (NMC, A*STAR)
66. Slovakia, Slovak Institute of Metrology/Slovenský Metrologický Ústav (SMU)
67. Slovenia, Metrology Institute of the Republic of Slovenia (MIRS)
68. South Africa, National Metrology Institute of South Africa (NMISA)
69. Spain, Centro Español de Metrología (CEM)
70. Sri Lanka, Measurement Units, Standards and Services Department (MUSSD)
71. Sweden, Technical Research Institute of Sweden (SP)
72. Switzerland, Federal Office of Metrology (METAS)
73. Thailand, National Institute of Metrology (NIMT)
74. Tunisia, Laboratoire Central d'Analyses et d'Essais (LCAE)
75. Turkey, National Metrology Institute/TÜBİTAK Ulusal Metroloji Enstitüsü (UME)
76. Ukraine, State Committee of the Ukraine for Technical Regulation and Consumer Policy (Derzhspozhivstandard of Ukraine)
77. United Kingdom, National Physical Laboratory (NPL)
78. United States, National Institute of Standards and Technology (NIST)
79. Uruguay, Laboratorio Tecnológico del Uruguay (LATU)
80. Vietnam, Vietnam Metrology Institute, Directorate for standards and quality (VMI-STAMEQ)
81. Zambia, Zambia Bureau of Standards (ZABS)
82. Zimbabwe, National Metrology Institute (NMI-SIRDC)

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