

Directory of Consultative Committees created by the CIPM



December 2009

Bureau international des poids et mesures

Update as of 09/12/09

CONTENTS

Introduction	3
Criteria for membership of the Consultative Committees of the CIPM.....	4
Consultative Committee for Electricity and Magnetism (CCEM)	5
Consultative Committee for Photometry and Radiometry (CCPR)	14
Consultative Committee for Thermometry (CCT).....	18
Consultative Committee for Length (CCL).....	32
Consultative Committee for Time and Frequency (CCTF).....	40
Consultative Committee for Ionizing Radiation (CCRI).....	50
Consultative Committee for Units (CCU).....	62
Consultative Committee for Mass and Related Quantities (CCM)	66
Consultative Committee for Amount of Substance: metrology in chemistry (CCQM)	76
Consultative Committee for Acoustics, Ultrasound and Vibration (CCAUV)	85
Acronyms and Addresses	90

Introduction

The International Committee for Weights and Measures (CIPM) has ten Consultative Committees.

- Consultative Committee for Electricity and Magnetism (CCEM)*
- Consultative Committee for Photometry and Radiometry (CCPR)
- Consultative Committee for Thermometry (CCT)
- Consultative Committee for Length (CCL)
- Consultative Committee for Time and Frequency (CCTF)
- Consultative Committee for Ionizing Radiation (CCRI)
- Consultative Committee for Units (CCU)
- Consultative Committee for Mass and Related Quantities (CCM)
- Consultative Committee for Amount of Substance: metrology in chemistry (CCQM)
- Consultative Committee for Acoustics, Ultrasound and Vibration (CCAUV)

The broad remit of each Committee is to advise the CIPM on matters related to its particular field of metrology.

This Directory gives a brief description of the current activities of each of these Committees, lists the members and the names and addresses of the participants, details the membership and tasks of working groups. The structure of the working groups differs from committee to committee depending on the nature of the work to be done. For example, in some working groups the members are laboratories while in others members are named individuals; some working groups are long standing and relatively formal, such as the CCEM Working Group on Radiofrequency Quantities. Others are set up for a particular task, such as running an international comparison or preparing a monograph, and are dissolved as soon as the work is completed. This is normal and no attempt is made to impose rules on how working groups should be established other than to require that the work be done in the simplest and most efficient way. At the end of this Directory is a list of the acronyms and full names and addresses of institutes and organizations around the world that participate in the work of the Consultative Committees.

The CIPM has asked all Consultative Committees to establish working groups to deal with the relevant operational aspects of the CIPM MRA. The CIPM also asked Consultative Committees to establish working groups on strategy. More details can be found in the document “Rules of procedure for the Consultative Committees (CCs) created by the CIPM, CC working groups and CC workshop” at <http://www.bipm.org>.

The purpose of this Directory is to make available a concise list of contact points for each Consultative Committee over the whole range of its activities and to identify the BIPM contact in each field. The printed version of this Directory is revised at the beginning of each year and an up to date version is maintained on the BIPM home page: <http://www.bipm.org> which also contains the text of the CIPM MRA and the BIPM key comparison database.

BIPM

December 2009

* Here and elsewhere in this document the acronyms come from the French names of the Committees.

Criteria for membership of the Consultative Committees of the CIPM

On :

www.bipm.org/en/committees/cc/cc_criteria

And note the special case of the Consultative Committee for Units at :

www.bipm.org/en/committees/cc/ccu_criteria

In general, the national metrology institute of each Member State of the Metre Convention wishing to participate can expect to be a member or, if they do not fulfil the criteria, an observer of at least one Consultative Committee.

Applications for Membership or Observer status should be sent to the Director of the BIPM or to the President of the Consultative Committee.

The Presidents of Consultative Committees may from time to time invite guests to meetings, including representatives of appropriate laboratories that are not yet members.

Consultative Committee for Electricity and Magnetism (CCEM)**Created in 1927**

Present activities concern practical realizations of the SI volt, ohm, ampere and watt, laboratory reference standards of the volt and the ohm based upon the Josephson and quantum-Hall effects, capacitance standards and ac/dc measurements, RF and microwave standards and advice to the CIPM on matters related to electrical standards.

President: Dr Barry D. Inglis
 National Measurement Institute, Australia
 Department of Industry, Tourism and Resources
 P.O. Box 264
 NSW 2070, West Lindfield
 Australia
 Tel: +61 2 8467 3650
 Fax: +61 2 8467 3655
 E-mail: barry.inglis@measurement.gov.au or bkinglis@bigpond.com

Executive Secretary: Dr Michael Stock, BIPM
 Tel: + 33 1 45 07 70 24
 Fax: + 33 1 45 07 62 62
 E-mail: mstock@bipm.org

Members:

Centre for Metrology and Accreditation [MIKES], Espoo
 D.I. Mendeleev Institute for Metrology, Rostekhnregulirovaniye of Russia [VNIIM], St Petersburg
 Danish Fundamental Metrology Ltd. [DFM], Lyngby
 Federal Office of Metrology [METAS], Bern-Wabern
 Instituto Nacional de Metrologia, Normalizacao e Qualidade Industrial [INMETRO], Rio de Janeiro
 Istituto Nazionale di Ricerca Metrologica [I.N.R.I.M.], Torino
 Justervesenet [JV], Kjeller
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 Laboratoire National de Métrologie et d'Essais [LNE], Paris
 Measurement Standards Laboratory of New Zealand [MSL], Lower Hutt
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Measurement Institute, Australia [NMIA], Lindfield
 National Metrology Centre [NMC-A*STAR], Singapore
 National Metrology Institute of Japan, [NMIJ/AIST], Tsukuba
 National Metrology Institute of South Africa [NMISA], Pretoria
 National Physical Laboratory [NPL], Teddington
 National Physical Laboratory of India [NPLI], New Delhi
 National Research Council of Canada [NRC-INMS], Ottawa
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 Technical Research Institute of Sweden [SP], Borås
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres
 VSL [VSL], Delft

Observers:

Centro Español de Metrología [CEM], Madrid
 Czech Metrology Institute [CMI], Prague
 Instituto Nacional de Tecnología Industrial [INTI], Buenos Aires
 National Metrology Institute of Turkey [UME], Gebze-Kocaeli

Attendees to the last meeting (March 2009)**President: Dr Barry D. Inglis****Delegates and experts of member laboratories:****Dr William E. Anderson, NIST**

Tel: + 1 301 975 8280
 Fax: + 1 301 975 3530
 E-mail: william.anderson@nist.gov

Dr Hans Bachmair, PTB

Tel: + 49 531 592 2010
 Fax: + 49 531 592 2015
 E-mail: hans.bachmair@ptb.de

Dr Ilya Budovsky, NMIA

Tel : + 61 2 8467 3541
 Fax : + 61 2 8467 3783
 E-mail : ilya.budovsky@measurement.gov.au

Dr Laurie Christian, MSL

Tel: + 64 4 931 3110
 Fax: + 64 4 931 3194
 E-mail: l.christian@irl.cri.nz

Dr Sze Wey Chua, A*STAR Singapore

Tel: + 65 6279 1909
 Fax: + 65 6279 1993
 E-mail: Chua_sze_wei@nmc.a-star.edu.sg

Mr Erik Dressler, NMISA

Tel: + 27 12 841 4152
 Fax: + 27 12 841 4458 or 2131
 E-mail: redressler@nmisa.org

Mr Hans Arne Frøystein, JV

Tel: + 47 64 84 84 55
 Fax: + 47 64 84 84 85
 E-mail: hans.froystein@justervesenet.no

Dr Gérard Genevès, LNE

Tel: + 33 1 30 69 21 62
 Fax: + 33 1 30 16 28 41
 E-mail: gerard.geneves.@lne.fr

Dr Dave Inglis, NRC-INMS

Tel: + 1 613 991 5650
 Fax: + 1 613 952 1394
 E-mail: dave.inglis@nrc-cnrc.gc.ca

Dr Beat Jeckelmann, METAS

Tel: + 41 31 323 3297
 Fax: + 41 31 323 3210
 E-mail: beat.jeckelmann@metas.ch

Dr Hans D. Jensen, DFM

Tel: + 45 4525 5874
 Fax: + 45 4593 1137
 E-mail: hdj@dfm.dtu.dk

Dr Tae-Weon Kang, KRISS

Tel: + 82 42 868 5175
 Fax: + 82 42 868 5018
 E-mail: twkang@kriss.re.kr

Dr Alexander S. Katkov, VNIIM

Tel: +7 812 323 9619
 Fax: +7 812 113 0114
 E-mail: a.s.katkov@vniim.ru

Dr Koji Komiyama, NMIJ/AIST

Tel: + 81 29 861 5637
 Fax: + 81 29 861 4289
 E-mail: koji.komiyama@aist.go.jp

Dr Zuliang Lu, NIM
Tel: + 86 10 6452 4501
Fax: + 86 10 8425 1573
E-mail: luzl@nim.ac.cn

Dr Antti Manninen, MIKES
Tel: + 358 10 6054 416
Fax: +358 10 6054 498
E-mail: antti.manninen@mikes.fi

Ing. Giancarlo Marullo Reedtz, I.N.R.I.M
Tel: + 39 011 391 9421
Fax: + 39 011 346 384
E-mail: g.marulloreedtz@inrim.it

Dr Jürgen Melcher, PTB
Tel: + 49 531 592 2100
Fax: + 49 531 592 2105
E-mail: juergen.melcher@ptb.de

Dr Yasuhiro Nakamura, NMIJ/AIST
Tel: + 81 29 861 5659
Fax: + 81 29 861 3469
E-mail: y.nakamura@aist.go.jp

Mr Håkan Nilsson, SP
Tel: + 46 10 51 65 387
Fax: + 46 10 51 65 620
E-mail: hakan.nilsson@sp.se

Dr James K. Olthoff, NIST
Tel: + 1 301 975 2220
Fax: + 1 301 975 4091
E-mail: james.olthoff@nist.gov

Dr François Piquemal, LNE
Tel: + 33 1 30 69 21 73
Fax: + 33 1 30 69 12 34
E-mail: francois.piquemal@lne.fr

Ing. Umberto Pogliano, I.N.R.I.M
Tel: + 39 011 3919 433
Fax: + 39 011 346 384
E-mail: u.pogliano@inrim.it

Dr He Qing, NIM
Tel: + 86 10 6452 4551
Fax: + 86 10 6422 0525
E-mail: heqing@nim.ac.cn

Dr James Randa, NIST
Tel: + 1 303 497 3150
Fax: + 1 303 497 3970
E-mail: randa@boulder.nist.gov

Dr Gert Rietveld, VSL
Tel: + 31 15 269 1645
Fax: + 31 15 261 2971
E-mail: grietveld@vsl.nl

Dr Ian A. Robinson, NPL
Tel: + 44 208 943 7139
E-mail: ian.robinson@npl.co.uk

Mr Anil Kishore Saxena, NPLI
Tel: + 91 11 4560 9314
Fax: + 91 11 2572 6938 /+ 91 11 2572 6952
E-mail: aksaxena@nplindia.ernet.in

Dr Yury P. Semenov, VNIIM
Tel: + 7 812 323 9621
Fax: + 7 812 113 0114
E-mail: y.p.semenov@vniim.ru

Dr Uwe Siegner, PTB
Tel: + 49 351 592 2010
Fax: + 49 351 592 2015
E-mail: uwe.siegner@ptb.de

Dr Yang Sup Song, KRISS
Tel: + 82 42 868 5447
Fax: + 82 42 868 5018
E-mail: yssong@kriss.re.kr

Dr Alan G. Steele, NRC-INMS
Tel: + 1 613 993 9384
Fax: + 1 613 990 6439
E-mail: alan.steele@nrc-cnrc.gc.ca

Mr Jonathan Williams, NPL
Tel: + 44 208 943 6376
Fax: + 44 208 943 7138
E-mail: jonathan.williams@npl.co.uk

Dr Barry Wood, NRC-INMS
Tel: + 1 613 990 9225
Fax: + 1 613 952 1394
E-mail: Barry.wood@nrc-cnrc.gc.ca

Prof. Zhonghua Zhang, NIM
Tel: + 86 10 6429 7138
Fax: + 86 10 6422 0525
E-mail: zzh@nim.ac.cn

Observers:

Mr Edson Afonso, INMETRO
 Tel: + 55 21 2679 9080
 Fax: + 55 21 2679 1627
 E-mail: eafonso@inmetro.gov.br

Dr Hector Laiz, INTI
 Tel: + 54 11 4724 6413
 Fax: + 54 11 4724 6244
 E-mail: laiz@inti.gob.ar

Mr Yakup Gülmez, UME
 Tel: + 90 262 679 5000
 Fax: + 90 262 679 5001
 E-mail: yakup.gulmez@ume.tubitak.gov.tr

Mr Miguel Neira, CEM
 Tel: + 34 91 807 4715
 Fax: + 34 91 807 4807
 E-mail: mneirar@cem.mityc.es

Dr Gregory Kyriazis, INMETRO
 Tel: + 55 21 2679 1627
 Fax: + 55 21 2679 1627
 E-mail: gakyriazis@inmetro.gov.br

Mr Jiri Streit, CMI
 Tel: + 420 545 555 208
 Fax: + 420 545 555 183
 E-mail: jstreit@cmi.cz

Invited by the President:

Dr Thomas J. Witt, c/o BIPM
 E-mail: thomasjwitt@gmail.com

CCEM Working Group on Radiofrequency Quantities (GT-RF)**Chairman:**

Dr James Randa, NIST
 Tel: + 1 303 497 3150
 Fax: + 1 303 497 3970
 E-mail: randa@boulder.nist.gov

Members:

Institute for Physical-Technical and Radiotechnical Measurements, Rostekhregulirovaniye of Russia [VNIIFTRI], Moscow
 International Union of Radio Science, [URSI]
 Istituto Nazionale di Ricerca Metrologica [I.N.R.I.M.], Torino
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 Laboratoire national de métrologie et d'essais [LNE], Paris
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Metrology Centre [NME-A*STAR], Singapore
 National Measurement Institute, Australia [NMIA], Lindfield
 National Metrology Institute of Japan, [NMIJ/AIST], Tsukuba
 National Metrology Institute of South Africa [NMISA], Pretoria
 National Physical Laboratory [NPL], Teddington
 National Research Council of Canada [NRC-INMS], Ottawa
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 Federal Office of Metrology [METAS], Bern-Wabern
 Mr Luc Erard, [LNE, former chairman of GT-RF]
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres
 VSL [VSL], Delft

Delegates and experts of member laboratories (March 2009)

Chairman: Dr James Randa, NIST

Dr Djamel Allal, LNE
Tel: + 33 1 30 69 21 50
Fax: + 33 1 30 69 12 34
E-mail: djamel.allal@lne.fr

Dr Hans Bachmair, PTB
Tel: + 49 531 592 2010
Fax: + 49 531 592 2015
E-mail: hans.bachmair@ptb.de

Dr Luciano Brunetti, I.N.R.I.M
Tel: + 39 011 391 9323
Fax: + 39 011 346 384 or 391 9259
E-mail: l.brunetti@inrim.it

Dr Ilya Budovsky, NMIA
Tel : + 61 2 8467 3541
Fax : + 61 2 8467 3783
E-mail : ilya.budovsky@measurement.gov.au

Dr Sze Wey Chua, NMC-A*STAR Singapore
Tel: + 65 6279 1909
Fax: + 65 6279 1993
E-mail: Chua_sze_wei@nmc.a-star.edu.sg

Mr Robert Clarke, NPL
Tel: + 44 208 943 6156
Fax: + 44 208 943 7176
E-mail: bob.clarke@npl.co.uk

Mr Erik Dressler, NMISA
Tel: + 27 12 841 4152
Fax: + 27 12 841 2131
E-mail: redressler@nmisa.org

Mr Qiulai Gao, NIM
Tel: + 86 10 64 218 565
Fax: + 86 10 64 218 703
E-mail: gaoql@nim.ac.cn

Mr David Gentle, NPL
E-mail: david.gentle@npl.co.uk

Dr Barry D. Inglis, NMIA, CCEM President
Tel: + 61 2 8467 3650
Fax: + 61 2 8467 3655
E-mail: barry.inglis@measurement.gov.au

Dr Rolf Judaschke, PTB
Tel: + 49 531 592 2229
Fax: + 49 531 592 2228
E-mail: rolf.judaschke@ptb.de

Dr Tae-Weon Kang, KRISS
Tel: + 82 42 868 5175
Fax: + 82 42 868 5018
E-mail: twkang@kriss.re.kr

Dr Kyu-Tae Kim, KRISS
Tel: + 82 42 868 5175
Fax: + 82 42 868 5018
E-mail: ktkim@kriss.re.kr

Dr Koji Komiyama, NMIJ/AIST
Tel: + 81 29 861 5637
Fax: + 81 29 861 4289
E-mail: koji.komiyama@aist.go.jp

Mr Alexander Matlejoane, NMISA
Tel : +27 12 841 4152
Fax : + 27 12 841 4458
E-mail : amatlejoane@nmisa.org

Dr Alain Michaud, NRC-INMS
Tel: + 613 998 6925
Fax: + 613 952 1394
E-mail: Alain.michaud@nrc-cnrc.gc.ca

Dr Yasuhiro Nakamura, NMIJ/AIST
Tel: + 81 29 861 5659
Fax: + 81 29 861 3469
E-mail: y.nakamura@aist.go.jp

Dr Yang Sup Song, KRISS
Tel: + 82 42 868 5447
Fax: + 82 42 868 5018
E-mail: yssong@kriss.re.kr

Mr Jonathan Williams, NPL
Tel: + 44 208 943 6376
Fax: + 44 208 943 7138
E-mail: jonathan.williams@npl.co.uk

Dr Markus Zeier, METAS
Tel: + 41 31 323 3491
Fax: + 41 31 323 3210
E-mail: markus.zeier@metas.ch

CCEM Working Group on low frequency quantities (WGLF)

Chairman:

Mr Jonathan Williams, NPL

Tel: + 44 208 943 6376

Fax: + 44 208 943 7138

E-mail: jonathan.williams@npl.co.uk

Members:

I.N.R.I.M

KRISS

LNE

NIST

NMIJ/AIST

NMIA

NPL

NRC-INMS

PTB

SP

VNIIM

VSL

BIPM

Delegates and experts of member laboratories (March 2009)

Chairman: Mr jonathan Williams

Dr Franz Ahlers, PTB

Tel : + 49 531 592 2600

Fax: + 49 531 592 1005

E-mail: franz.ahlers@ptb.de

Dr Dave Inglis, NRC-INMS

Tel: + 1 613 991 5650

Fax: + 1 613 952 1394

E-mail: dave.inglis@nrc-cnrc.gc.ca

Dr Hans Bachmair, PTB

Tel: + 49 531 592 2010

Fax: + 49 531 592 2015

E-mail: hans.bachmair@ptb.de

Dr Barry D. Inglis, NMIA, CCEM President

Tel: + 61 2 8467 3650

Fax: + 61 2 8467 3655

E-mail: barry.inglis@measurement.gov.au

Dr Alexandre Bounouh, LNE

Tel: + 33 1 30 69 21 51

Fax: + 33 1 30 69 12 34

E-mail: alexandre.bounouh@lne.fr

Dr Tae-Weon Kang, KRISS

Tel: + 82 42 868 5175

Fax: + 82 42 868 5018

E-mail: twkang@kriss.re.kr

Dr Ilya Budovsky, NMIA

Tel : + 61 2 8467 3541

Fax : + 61 2 8467 3783

E-mail : ilya.budovsky@measurement.gov.au

Dr Alexander S. Katkov, VNIIM

Tel: +7 812 323 9619

Fax: +7 812 113 0114

E-mail: a.s.katkov@vniim.ru

Dr Luciano Brunetti, I.N.R.I.M

Tel: + 39 011 391 9323

Fax: + 39 011 346 384

E-mail: l.brunetti@inrim.it

Dr Kyu-Tae Kim, KRISS

Tel: + 82 42 868 5157

Fax: + 82 42 868 5018

E-mail: ktkim@kriss.re.kr

Mr Luca Callegaro, I.N.R.I.M

E-mail: l.callegaro@inrim.it

Dr Koji Komiyama, NMIJ/AIST

Tel: + 81 29 861 5637

Fax: + 81 29 861 4289

E-mail: koji.komiyama@aist.go.jp

Ing. Giancarlo Marullo Reedtz, I.N.R.I.M

Tel: + 39 011 391 9421
 Fax: + 39 011 346 384
 E-mail: g.marulloreedtz@inrim.it

Dr Jürgen Melcher, PTB

Tel: + 49 531 592 2100
 Fax: + 49 531 592 2105
 E-mail: juergen.melcher@ptb.de

Dr Yasuhiro Nakamura, NMIJ/AIST

Tel: + 81 29 861 5659
 Fax: + 81 29 861 3469
 E-mail: y.nakamura@aist.go.jp

Dr James K. Olthoff, NIST

Tel: + 1 301 975 2220
 Fax: + 1 301 975 4091
 E-mail: james.olthoff@nist.gov

Dr François Piquemal, LNE

Tel: + 33 1 30 69 21 73
 Fax: + 33 1 30 69 12 34
 E-mail: francois.piquemal@lne.fr

Ing. Umberto Pogliano, I.N.R.I.M

Tel: + 39 011 3919 433
 Fax: + 39 011 346 3970
 E-mail: u.pogliano@inrim.it

Dr James Randa, NIST

Tel: + 1 303 497 3150
 Fax: + 1 303 497 3970
 E-mail: randa@boulder.nist.gov

Dr Gert Rietveld, VSL

Tel: + 31 15 269 1645
 Fax: + 31 15 261 2971
 E-mail: grietveld@vsl.nl

Dr Ian A. Robinson, NPL

Tel: + 44 208 943 7139
 E-mail: ian.robinson@npl.co.uk

Mr Karl-Erik Rydler, SP

Tel: + 46 33 16 54 01
 Fax: + 46 33 12 50 38
 E-mail: karlerik.rydler@sp.se

Dr Yury P. Semenov, VNIIM

Tel: + 7 812 323 9621
 Fax: + 7 812 113 0114
 E-mail: y.p.semenov@vniim.ru

Dr Efim Shapiro, VNIIM

Tel: + 7 812 251 7444
 Fax: + 7 812 251 7444
 E-mail: ezshapiro@vniim.ru

Dr Yang Sup Song, KRIS

Tel: + 82 42 868 5447
 Fax: + 82 42 868 5018
 E-mail: yssong@kriss.re.kr

Mr Valter Tarasso, SP

E-mail: valter.tarasso@sp.de

Mr Jonathan Williams, NPL

Tel: + 44 208 943 6376
 Fax: + 44 208 943 7138
 E-mail: jonathan.williams@npl.co.uk

**CCEM Working Group on Electrical Methods
 to Monitor the Stability of the Kilogram**

Chairman:**Dr Ian A. Robinson, NPL**

Tel: + 44 208 943 7139
 E-mail: ian.robinson@npl.co.uk

Members:

LNE
 METAS
 NIST
 NMIJ/AIST

NPL
PTB
BIPM

Participants from member institutes at the informal meeting of 7 June 2008

Delegates:

Dr Horst Bettin,	PTB	(horst.bettin@ptb.de)
Dr Ali Eichenberger,	METAS	(ali.eichenberger@metas.ch)
Dr Hao Fang,	BIPM	(fang@bipm.org)
Dr Kenichi Fujii,	NMIJ	(fujii.kenichi@aist.go.jp)
Dr Gérard Genevès,	LNE	(gerard.geneves@lne.fr)
Dr Pierre Gournay,	LNE	(pierre.gournay@lne.fr)
Dr Darine Haddad	NIST	(darine.haddad@nist.gov)
Dr Beat Jeckelmann,	METAS	(beat.jeckelmann@metas.ch)
Dr Mike Kelley	NIST	(mkelley@nist.gov)
Dr Rüdiger Kessel	NIST	(rudiger.kessel@nist.gov)
Dr Naoki Kuramoto,	NMIJ	(n.kuramoto@aist.go.jp)
Dr Ruimin Liu	NIST	(ruimin.lin@nist.gov)
Dr Estefania de Mirandes	BIPM	(estefania.de.mirandes@bipm.org)
Dr David Newell,	NIST	(david.newell@nist.gov)
Dr Alain Picard,	BIPM	(apicard@bipm.org)
Dr Ian A. Robinson,	NPL	(ian.robinson@npl.co.uk) (Chairman)
Dr Richard Steiner,	NIST	(richard.steiner@nist.gov)
Dr Michael Stock,	BIPM	(mstock@bipm.org)
Dr Yi-Hua Tang	NIST	(yi-hua.tang@nist.gov)
Dr Barry Taylor,	NIST	(barry.taylor@nist.gov)
Dr Atsushi Waseda,	NMIJ	(waseda.atsushi@aist.go.jp)
Dr Edwin Williams,	NIST	(edwin.williams@nist.gov)
Dr David Wollmann	NIST	(david.wollmann@nist.gov)

CCEM Working Group for RMO Coordination

Chairman:

Dr Gregory Kyriazis, INMETRO
Tel: + 55 21 2679 9075
Fax: + 55 21 2679 1627
E-mail: gakyriazis@inmetro.gov.br

Members:

- Chairpersons of the Regional Metrology Organizations' technical committees for electricity and magnetism
- Chairpersons of the Working Groups on low Frequency Quantities and on Radiofrequency Quantities
- Executive Secretaries of the CCEM and the Joint Committee of the Regional Metrology Organizations and the BIPM
- Coordinator of the Key comparison database

CCEM Working Group for Strategic Planning

Chairman:

Dr William E. Anderson, NIST

Tel: + 1 301 975 8280

Fax: 1 301 975 3530

E-mail: william.anderson@nist.gov

Members:

Barry D. Inglis, NMIA

Yashuhiro Nakamura, NMIJ

Gert Rietveld, VSL

Uwe Siegner, PTB

Alan G. Steele, NRC-INMS

Michael Stock, BIPM

Jonathan Williams, NPL

CCEM Working Group on Proposed Modifications to the SI

Chairman:

Dr Barry Wood, NRC-INMS

Tel: + 1 613 990 9225

Fax: + 1 613 952 1394

E-mail: barry.wood@nrc-cnrc.gc.ca

Members:

J. Melcher, PTB

B. Jeckelmann, METAS

F. Piquemal, LNE

B. Ricketts, NMIA

Ian Robinson, NPL

M. Stock, BIPM

C. Thomas, BIPM

E. Williams, NIST

Consultative Committee for Photometry and Radiometry (CCPR)**Created in 1933**

*Present activities concern measurement standards for photometric and radiometric quantities,
development of absolute radiometry
and advice to the CIPM on matters concerned with radiometry and photometry*

President: **Dr Franz Hengstberger**
 GTMS (Pty) Ltd.
 P.O Box 38843
 0060 Garsfontein East Pretoria
 South Africa
 Tel: + 27 12 841 4352
 Fax: + 27 12 841 3382
 E-mail: franz.hengstberger@gmail.com

Executive Secretary: **Dr Michael Stock**, BIPM
 Tel: + 33 1 45 07 70 24
 Fax: +33 1 45 07 62 62
 E-mail: mstock@bipm.org

Members:

Centre for Metrology and Accreditation [MIKES], Espoo
 Centro Nacional de Metrología [CENAM], Querétaro
 Federal Office of Metrology [METAS], Bern-Wabern
 Hungarian Trade Licensing Office [MKEH], Budapest
 Institute for Optico-Physical Measurements, Rostekhnregulirovaniye of Russia [VNIIOFI], Moscow
 Instituto de Física Aplicada, Consejo Superior de Investigaciones Científicas [IFA-CSIC], Madrid
 Istituto Nazionale di Ricerca Metrologica [I.N.R.I.M.], Torino
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 Laboratoire National de Métrologie et d'Essais [LNE], Paris
 Measurement Standards Laboratory of New Zealand [MSL], Lower Hutt
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Measurement Institute, Australia [NMIA], Lindfield
 National Metrology Centre [NMC-A*STAR], Singapore
 National Metrology Institute of Japan, AIST [NMIJ/AIST], Tsukuba
 National Metrology Institute of South Africa [NMISA], Pretoria
 National Metrology Institute of Turkey [UME], Gebze-Kocaeli
 National Physical Laboratory [NPL], Teddington
 National Research Council of Canada [NRC-INMS], Ottawa
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 Slovak Institute of Metrology/Slovenský Metrologický Ústav [SMU], Bratislava
 VSL [VSL], Delft
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Commission internationale de l'éclairage [CIE], Wien
World Meteorological Organization [WMO], Geneva

Attendees to the last meeting (September 2009)**President: Dr Franz Hengstberger****Delegates and experts of member laboratories:****Mr György Andor, MKEH**

Tel: + 36 1 4585 984

Fax: + 36 1 4585 927

E-mail: andorgy@mkeh.hu

Dr Peter Blattner, METAS

Tel: + 41 31 32 33 340

Fax: + 41 31 32 33 210

E-mail: peter.blattner@metas.ch

Dr Jimmy Dubard, LNE

Tel: + 33 1 30 69 12 37

Fax: + 33 1 30 69 12 34

E-mail: jimmy.dubard@lne.fr

Dr Nigel Fox, NPL

Tel: + 44 208 943 6825

Fax: + 44 208 943 6935

E-mail: nigel.fox@npl.co.uk

Mr A.A. Gaertner, NRC-INMS

Tel: + 613 993 9344

Fax: +613 952 1394

E-mail: Arnold.Gaertner@nrc-cnrc.gc.ca

Mr Xuebo Huang, A*STAR

Tel: + 65 6279 1939

Fax: + 65 6279 1995

E-mail: huang_xuebo@nmc.a-star.edu.sg

Prof. Erkki Ikonen, MIKES

Tel: + 358 505 502 283

Fax: + 358 9 451 2222

E-mail: erkki.ikonen@mikes.fi

Dr Boris Khlevnoy, VNIIOFI

Tel : + 7 095 4475 653

Fax : + 7 095 4373 147

E-mail : khlevnoy-m4@vniiofi.ru

Dr Seung Kwan Kim, KRISS

Tel: + 82 42 861 5701

Fax: + 82 42 868 5022

Email: skkfiber@kriss.re.kr

Dr Dong-Hoon Lee, KRISS

Tel: + 82 42 868 5706

Fax: + 82 42 868 5022

E-mail: dh.lee@kriss.re.kr

Dr Yandong Lin, NIM

Tel: + 86 10 6421 8651

Fax: + 86 10 6421 8703

E-mail: linyd@nim.ac.cn

Dr Peter Manson, NMIA

Tel: + 61 2 8467 3858

Fax: + 61 2 8467 3752

E-mail: peter.manson@measurement.gov.au

Dr Peter Nemeček, SMU

Tel: +421 2 6029 4278

Fax: + 421 2 6542 9592

E-mail: nemecek@smu.gov.sk

Mrs Kathryn Nield, MSL

Tel: + 644 931 3272

Fax: + 644 931 3117

E-mail: k.niel@irl.cri.nz

Dr Yoshihiro Ohno, NIST

Tel: + 1 301 975 2321

Fax: + 1 301 840 8551

E-mail: yoshihiro.ohno@nist.gov

Mrs Alicia Pons, IFFA-CSIC

Tel: + 34 91 561 88 06

Fax: + 34 91 563 17 94

E-mail: apons@ifa.cetef.csic.es

Dr Maria Luisa Rastello, I.N.R.I.M

Tel: + 39 011 3919 219
 Fax: + 39 011 346 384
 E-mail: rastello@inrim.it

Dr Kent Rochford, NIST

Tel: + 1 303 497 5285
 Fax: + 1 303 497 7671
 E-mail: kent.rochford@boulder.nist.gov

Dr Terubumi Saito, NMIJ/AIST

Tel: + 81 29 861 5654
 Fax: + 81 29 861 4860
 E-mail: t.saito@aist.go.jp

Prof. Victor I. Sapritsky, VNIIOFI

Tel: + 7 495 437 2992
 Fax: + 7 495 437 3100
 E-mail: vsapritsky@aol.com

Prof. Werner Schmutz, PMOD/WRC

Tel: + 41 81 417 51 11
 Fax: + 41 81 417 51 00
 E-mail: werner.schmutz@pmodwrc.ch

Mr Reinhardt Sieberhagen, NMISA

Tel: + 27 12 841 27 29
 Fax: + 27 12 841 4458
 E-mail: rsieberhagen@nmisa.org

Dr Klaus Stock, PTB

Tel: + 49 (0)531 592 4100
 Fax: + 49 (0)531 592 4105
 E-mail: klaus.stock@ptb.de

Mr Kamuran Türkoglu, UME

Tel: + 90 262 679 5000
 Fax: + 90 262 679 5001
 E-mail: akt@ume.tubitak.gov.tr

Dr Gerhard Ulm, PTB

Tel: + 49 30 3481 7312
 Fax: + 49 30 3481 7550
 E-mail: gerhard.ulm@ptb.de

Dr Eric van der Ham, VSL

Tel: + 31 15 269 1586
 Fax: + 31 15 261 2971
 E-mail: evdham@nmi.nl

Dr Emma Woolliams, NPL

Tel: + 44 208 943 6661
 Fax: + 44 208 943 6935
 E-mail: emma.woolliams@npl.co.uk

Dr Gan Xu, NMC-A*STAR

Tel: + 65 6279 1937
 Fax: + 65 6279 1995
 E-mail: xu_gan@nmc.a-star.edu.sg

Dr Tatsuya Zama, NMIJ/AIST

Tel: + 81 29 861 5649
 Fax: + 81 29 861 4259
 E-mail: zama-t@aist.go.jp

Dr Joanne Zwinkels, NRC-INMS

Tel: + 1 613 993 9363
 Fax: + 1 613 952 1394
 E-mail: joanne.zwinkels@nrc-cnrc.gc.ca

Observers:**Dr Jean Bastie, CIE**

Tel: + 33 1 39 13 11 38
 E-mail: jean.bastie@wanadoo.fr

Invited by the President:**Mr M. Smid, CMI**

Tel: + 420 545 222 709
 Fax: + 420 545 222 728
 E-mail: msmid@cmi.cz

Working Group on Key Comparisons (WG-KC)

Chairman:

Dr Yoshihiro Ohno, NIST

Tel: + 1 301 975 2321

Fax: + 1 301 840 8551

E-mail: ohno@nist.gov

Secretary:

Dr Michael Stock, BIPM

Tel: + 33 1 45 07 70 24

Fax: +33 1 45 07 62 62

E-mail: mstock@bipm.org

Members:

KRISS

MIKES

NIST

NMIJ/AIST

NMIA

NPL

NRC

PTB

Pilots of ongoing key comparisons

Working Group on Calibration and Measurement Capabilities (WG-CMC)

Chairman:

Ms Natasha nel-Sakharova, NMISA

Tel: + 27 12 84 13 618

Fax: + 27 12 84 12 131

E-mail: nnelsakharova@nmisa.org

Members:

Chairs of the Technical Committees of Regional Metrology Organizations (RMOs) dealing with Photometry and Radiometry.

CCPR Working Group on Strategic Planning (WG-SP)

Chair: **Dr Joanne Zwinkels**, NRC-INMS

Tel: + 1 613 993 9363

Fax: + 1 613 952 1394

E-mail: joanne.zwinkels@nrc-cnrc.gc.ca

Members: I.N.R.I.M, KRISS, LNE, METAS, MSL, NIST, NMIJ/AIST, NMISA, VSL, NPL, NRC, PTB

Consultative Committee for Thermometry (CCT)**Created in 1937**

Present activities concern matters related to the establishment and realization of the International Temperature Scale of 1990 (ITS-90) and thermodynamic temperature, extension and improvement of the ITS-90, secondary reference points, international reference tables for thermocouples and resistance thermometers.

President: **Prof. Dr Hüseyin Ugur**
Ankara CAD. Mimoza apt. 50/19
34890 Pendik
Turkey
Tel: + 90 262 643 90 63
Fax: + 90 262 646 90 62
E-mail: ugurh@superonline.com

Executive Secretary: **Dr Richard S. Davis**, BIPM
Tel: + 33 1 45 07 70 11
Fax: +33 1 45 34 20 21
E-mail: rdavis@bipm.org

Members:

Agency for Science, Technology and research [A*STAR], Singapore
Centro Español de Metrología [CEM], Madrid
Centro Nacional de metrologia [CENAM], Querétaro
Conservatoire national des arts et métiers/Institut National de Métrologie [LNE-INM/CNAM], Paris
D.I. Mendeleev Institute for Metrology, Rostekhregulirovaniye of Russia [VNIIM], St Petersburg
Institute for Physical-Technical and Radiotechnical Measurements, Rostekhregulirovaniye of Russia [VNIIFTRI], Moscow
Istituto Nazionale di Ricerca Metrologica [I.N.R.I.M.], Torino
Korea Research Institute of Standards and Science [KRISS], Daejeon
Measurement Standards Laboratory of New Zealand [MSL], Lower Hutt
National Institute of Metrology [NIM], Beijing
National Institute of Standards and Technology [NIST], Gaithersburg
National Measurement Institute, Australia [NMIA], Lindfield
National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology [NMIJ/AIST], Tsukuba
National Metrology Institute of South Africa [NMISA], Pretoria
National Metrology Institute of Turkey [UME], Gebze-Kocaeli
National Physical Laboratory [NPL], Teddington
National Research Council of Canada [NRC-INMS], Ottawa
Nederlands Meetinstituut/Van Swinden Laboratorium [NMI VSL], Delft
Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
Slovak Metrology Institute /Slovenský Metrologický Ústav [SMU], Bratislava
The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Centre for Metrology and Accreditation [MIKES], Espoo
Instituto Nacional de Tecnología Industrial [INTI], Buenos Aires
Instituto Português da Qualidade [IPQ], Caparica
Instituto Nacional de Metrologia, Normalização e Qualidade Industrial [INMETRO], Rio de Janeiro

Attendees to the last meeting (May 2008)

President: Prof. Hüseyin Ugur

Delegates and experts of member laboratories:

Mr Masaru Arai, NMIJ/AIST

Tel: + 81 29 861 4295

Fax: + 81 29 861 4216

E-mail: masaru-arai@aist.go.jp

Dr Tetsuya Baba, NMIJ/AIST

Tel: + 81 29 861 4394

Fax: + 81 29 861 4236

E-mail: t.baba@aist.go.jp

Dr Mark Ballico, NMIA

Tel: + 61 2 8467 3573

Fax: + 61 2 8467 3752

E-mail: mark.ballico@measurement.gov.au

Dr Mauro Battuello, I.N.R.I.M

Tel: + 39 011 3977 338

Fax: + 39 011 3977 347

E-mail: m.battuello@inrim.it

Dr Stéphanie Bell, NPL

Tel: + 44 208 943 6402

Fax: + 44 208 614 0437

E-mail: stephanie.bell@npl.co.uk

Dr Dolores Del Campo, CEM

Tel: + 34 91 807 4714

Fax: + 34 91 807 4807

E-mail: ddelcampo@cem.mitycs.es

Dr Vito Fericola, I.N.R.I.M

Tel: + 39 011 3919 737

Fax: + 39 011 3919 747

E-mail: v.fericola@inrim.it

Dr Joachim Fischer, PTB

Tel: + 49 30 34 81 7473

Fax: + 49 30 34 81 7508

E-mail: joachim.fischer@ptb.de

Dr Yves Hermier, LNE-INM/CNAM

Tel: + 33 1 40 27 21 87

Fax: + 33 1 42 71 26 32

E-mail: hermier@cnam.fr

Mr Ken D. Hill, NRC-INMS

Tel: + 1 613 998 6077

Fax: + 1 613 952 1394

E-mail: ken.hill@nrc-cnrc.gc.ca

Dr Jörg Hollandt, PTB

Tel: + 49 30 3481 7369

Fax: + 49 30 3481 7508

E-mail: joerg.hollandt@ptb.de

Dr Juntaro Ishii, NMIJ/AIST

Tel: + 81 29 861 4031

Fax: + 81 29 861 4010

E-mail: j-ishii@aist.go.jp

Dr Aliye Kartal Doğan, UME

Tel: + 90 262 679 5000 / 3450

Fax: + 90 262 679 5001

E-Mail: aliye.kartal@ume.tubitak.gov.tr

Dr Gennadiy Kytin, VNIIFTRI

Tel: + 7 095 535 9348

Fax: + 7 495 744 81 79

E-mail: office@vniiftri.ru or cryom@vniiftri.ru

Mr Hans Liedberg, NMISA

Tel: + 27 12 841 2753

Fax: + 27 12 841 2131/4458

E-mail: hliedber@nmisa.org

Dr Graham Machin, NPL

Tel: + 44 208 943 6742

Fax: + 44 208 943 0491

E-mail: graham.machin@npl.co.uk

Dr Mikhail Matveyev, VNIIM

Tel: + 7 812 323 9637

Fax: + 7 812 713 0114

E-mail: m.s.matveyev@vniim.ru

Dr Peter Nemeček, SMU

Tel: + 421 2 6029 4278

Fax: + 421 2 6542 9592

E-mail: nemecek@smu.gov.sk

Mr Chul Woung Park, KRISS

Tel: + 82 42 868 5225
 Fax: + 82 42 868 5022
 E-mail: cwpark@kriss.re.kr

Dr Franco Pavese, I.N.R.I.M

Tel: + 39 011 3977 341
 Fax: + 39 011 3977 747
 E-mail: f.pavese@imgc.cnr.it

Dr Andrea Peruzzi, NMI VSL

Tel: + 31 15 269 1519
 Fax: + 31 15 261 2971
 E-mail: aperuzzi@nmi.nl

Dr Olga Podmurnaya, VNIIFTRI

Tel: + 7 3952 468 303 or + 7 3952 468 026
 Fax: + 7 3952 463 848 or + 7 3952 468 303
 E-mail: office@niiftri.irk.ru or dep15@niiftri.irk.ru

Prof. Ing. Anatoly Pokhodun, VNIIM

Tel: + 7 812 315 52 07
 Fax: + 7 812 713 01 14
 E-mail: a.i.pokhodun@vniim.ru

Dr Dean C. Ripple, NIST

Tel: + 1 301 975 4801
 Fax: + 1 301 548 0206
 E-mail: dean.ripple@nist.gov

Dr Nikolay Sokolov, VNIIM

Tel: +7 812 323 96 32
 Fax: +7 812 113-0114
 E-mail: n.a.sokolov@vniim.ru

Dr Alan G. Steele, NRC-INMS

Tel: + 1 613 993 9384
 Fax: + 1 613 952 1394
 E-mail: alan.steele@nrc-cnrc.gc.ca

Dr Peter P. M. Steur, I.N.R.I.M

Tel: + 39 011 3919 737
 Fax: + 39 011 3919 747
 E-mail: p.steur@inrim.it

Mr Gregory F. Strouse, NIST

Tel: + 1 301 975 4803
 Fax: + 1 301 548 0206
 E-mail: gregory.strouse@nist.gov

Dr Eric Van der Ham, NMI VSL

Tel: + 31 15 269 1586
 Fax: + 31 15 261 2971
 E-mail: evdham@nmi.nl

Dr Li Wang, A*STAR Singapore

Tel: + 65 6773 9865
 Fax: + 65 6773 9805
 E-mail: wangli@nmc.a-star.edu.sg

Mr Rod White, MSL

Tel: + 64 4 5690 491
 Fax: + 64 4 5690 003
 E-mail: r.white@irl.cri.nz

Dr Kazuaki Yamazawa, NMIJ/AIST

Tel: + 81 298 61 4304
 Fax: + 81 298 61 4216
 E-mail: kazuaki-yamazawa@aist.go.jp

Dr Inseok Yang, KRISS

Tel: + 82 42 868 5772
 Fax: + 82 42 868 5022
 E-mail: iyang@kriss.re.kr

Dr Howard Yoon, NIST

Tel: + 1 301 975 2482
 Fax: + 1 301 869 5700
 E-mail: howard.yoon@nist.gov

Dr Zundong Yuan, NIM

Tel: + 86 10 6452 5106
 Fax: + 86 10 6421 8637
 E-mail: yuand@nim.ac.cn

Dr Boris Yuryev, VNIIFTRI

Tel: + 7 495 535 24 01 / + 7 495 535 92 10
 Fax: + 7 495 535 93 34
 E-mail: office@vniiftri.ru or yu@vniiftri.ru

Dr Jintao Zhang, NIM

Tel: + 8610 6421 1631 ext 2216
 Fax: + 8610 6421 8637
 E-mail: zhangjint@nim.ac.cn

Observers:**Dr Maria Eduarda Filipe, IPQ**

Tel: + 351 21 294 8184

Fax: + 351 21 294 8188

E-mail: efilipe@mail.ipq.pt

Dr Leonel Lira-Cortés, CENAM

Tel: + 52 442 211 05 00 Ext 3416

Fax: + 52 442 215 3904

E-mail: llira@cenam.mx

Dr Edgar Méndez-Lango, CENAM

Tel: + 52 442 211 0542

Fax: + 52 442 211 0548

E-mail: emendez@cenam.mx

Dr Renato Teixeira, INMETRO

Tel: + 55 21 2679 9019

Fax: + 55 21 2679 9027

E-mail: rnateixeira@inmetro.gov.br

Invited by the President:**Dr Pieter Bloembergen, NMIJ/AIST**

Tel: + 81 298 61 4132

Fax: + 81 298 61 4010

E-mail: p.bloembergen@aist.go.jp

Dr Jovan Bojkovski, MIRS/FE -LMK

Tel: + 386 1 4768 798

Fax: + 386 1 4264 633

E-mail: jovan.bojkovski@fe.uni-lj.si

CCT Working Group 1*Defining fixed points and interpolating instruments***Chairman:****Dr Dean C. Ripple**, NIST

Tel: + 1 301 975 4801

Fax: + 1 301 548 0206

E-mail: dean.ripple@nist.gov

Delegates and experts of member laboratories:**Dr Bernd Fellmuth**, PTB

Tel: + 49 30 3481 224

Fax: + 49 30 3481 490

E-mail: bernd.fellmuth@ptb.de

Mr K.S. Gam, KRISS

E-mail: ksgam@kriss.re.kr

Mr David Head, NPL

Tel: + 44 20 8943 6111

Fax: + 44 20 8943 6364

E-mail: david.head@npl.co.uk

Dr Yves Hermier, LNE-INM/CNAM

Tel: + 33 1 40 27 21 87

Fax: + 33 1 42 71 37 36

E-mail: hermier@cnam.fr

Mr Anatoly Pokhodun, VNIIM

Tel: + 7 812 315 52 07

Fax: + 7 812 113 01 14

E-mail: a.i.pokhodun@vniim.ru

Dr Peter Steur, I.N.R.I.M

Tel: + 39 011 3977 340

Fax: + 39 011 3977 347

E-mail: p.steur@imgc.cnr.it

Mr Osama Tamura, NMIJ/AIST

Tel: + 81 29 861 4297

Fax: + 81 29 861 4038

E-mail: o.tamura@aist.go.jp

Delegate TBD, NMI-VSL

Delegate TBD, NIM

CCT Working Group 2

*Secondary reference points and techniques for approximating the ITS-90***Chairman:****Mr Hans Liedberg**, NMISA

Tel: + 27 12 841 2753

Fax: + 27 12 841 2131/4458

E-mail: hliedber@nmisa.org

Delegates and experts of member laboratories:**Dr Yuning Duan**, NIM

Tel: + 86 10 6421 8637

Fax: + 86 10 6429 1990/6421 8703

E-mail: duanyan@nim.ac.cn

Dr Frank Edler, PTB, Berlin

Tel: + 49 30 3481 538

Fax: + 49 30 3941 490

E-mail: frank.edler@ptb.de

Mrs Carmen Garcia, CEM

E-mail : mcgarciaiz@cem.mityc.es

Dr Yong-Gyoo Kim, KRISS

Tel: + 82 42 868 5634

Fax: + 82 42 868 5022

E-mail: dragon@kriss.re.kr

Dr Edgar Méndez-Lango, CENAM

Tel: + 52 442 211 0545

Fax: + 52 442 211 0548

E-mail: emendez@cenam.mx

Dr Andrea Merlone, I.N.R.I.M

Tel: + 39 011 39 77 354

Fax: + 39 011 39 77 347

E-mail: a.merlone@imgc.cnr.it

Dr Ronan Morice, LNE-INM/CNAM

Tel: + 33 1 4043 3927

Fax: + 33 1 4043 3737

E-mail: ronan.morice@lne.fr

Mr Rod White, MSL

Tel: +64 4 5690 491

Fax: +64 4 5690 003

E-mail: r.white@irl.cri.nz

Mr Yoshiro Yamada, NMIJ/AIST

Tel: + 81 298 61 4031

Fax: + 81 298 61 4010

E-mail: y.yamada@aist.go.jp

Dr Peter Bloembergen

Tel: + 31 71 514 2409

Fax: + 31 71 514 8329

E-mail: pbloembergen@phys.leidenuniv.nl

Dr Bernd Fellmuth, PTB

Tel: + 49 30 3481 224

Fax: + 49 30 3481 490

E-mail: bernd.fellmuth@ptb.de

Masahiko Gotoh, Tamagawa Univ. Japan

Tel: + 81 42 739 8405

Fax: + 81 42 739 8858

E-mail: mgotoh@eng.tamagawa.ac.jp

Delegate TBD, UME

CCT Working Group 3*Uncertainties***Chairman:**

Mr Rod White, MSL
Tel: +64 4 5690 491
Fax: +64 4 5690 003
E-mail: r.white@irl.cri.nz

Delegates and experts of member laboratories:

Dr Mark Ballico, NMIA
Tel: + 61 2 9413 7767
Fax: + 61 2 9413 7202
E-mail: mark.ballico@measurement.gov.au

Dr Dolores del Campo, CEM
Tel: + 34 918 074 714
Fax: + 34 918 074 807
E-mail: ddelcampo@cem.mytics.es

Mrs Aliye Kartal Dogan, UME
Tel: + 90 262 679 5000 Ext. 3452
Fax: + 90 262 679 5001
E-mail: aliye.kartal@ume.tubitak.gov.tr

Dr Stanislav Duris, SMU
Tel: + 421 2 6029 4277
Fax: + 421 2 6542 9592
E-mail: duris@smu.gov.sk

Mrs Maria Eduarda Filipe, IPQ
Tel: + 351 21 294 8184
Fax: + 351 21 284 8188
E-mail: efilipe@mail.ipq.pt

Mrs Alina Ivanova, VNIIM
Tel: + 7 812 113 0114
Fax: + 7 812 259 1087
E-mail: a.g.ivanova@vniim.ru

Dr Edgar Méndez-Lango, CENAM
Tel: + 52 442 211 0545
Fax: + 52 442 211 0548
E-mail: emendez@cenam.mx

Dr Christopher Meyer, NIST
Tel: + 1 301 975 4825
E-mail: christopher.meyer@nist.gov

Dr Franco Pavese, I.N.R.I.M
Tel: + 39 011 3977 341
Fax: + 39 011 3977 347
E-mail: f.pavese@imgc.cnr.it

Dr Andrea Peruzzi, NMi VSL
Tel: + 31 15 269 1519
Fax: + 31 15 261 2971
E-mail: aperuzzi@nmi.nl

Mrs Eliane Renaot, LNE-INM/CNAM
Tel.: +33 1 40 27 20 21
Fax: +33 1 42 71 37 36
E-mail: renaot@cnam.fr

Dr Steffen Rudtsch, PTB
Tel.: +49 30 3481 650
Fax: +49 30 3481 504
E-mail: steffen.rudtsch@ptb.de

Dr Kazuaki Yamazawa, NMIJ
Tel: + 81 298 61 4304
Fax: + 81 298 61 4216
E-mail: kazuaki-yamazawa@aist.go.jp

CCT Working Group 4

Thermodynamic temperature determinations and extension of the ITS-90 to lower temperatures

Chairman:

Dr Joachim Fischer, PTB Berlin

Tel: + 49 30 34 81 369

Fax: + 49 30 34 81 490

E-mail: joachim.fischer@ptb.de

Delegates and experts of member laboratories:

Dr M. de Podesta, NPL

Tel: + 44 208 943 6476

E-mail: michael.depodesta@npl.co.uk

Dr Ken Hill, NRC-INMS

Tel: + 1 613 998 6077

Fax: + 1 613 952 1394

E-mail: ken.hill@nrc.ca

Dr Michael R. Moldover, NIST

Tel: + 1 301 975 2459

E-mail: michael.moldover@nist.gov

Dr Laurent Pitre, LNE-INM/CNAM

Tel : + 33 1 40 27 21 55

Fax : + 33 1 42 71 37 36

E-mail: laurent.pitre@lne.fr

Mr Peter Steur, I.N.R.I.M

Tel: + +39 011 3977 342

Fax: +39 011 3977 347

E-mail:p.steur@imgc.cnr.it

Dr Osama Tamura, NMIJ/AIST

Tel: + 81 29 861 4297

Fax: + 81 29 861 4038

E-mail: o.tamura@aist.go.jp

Mr Rod White, MSL

Tel: +64 4 5690 491

Fax: + 64 4 5690 003

E-mail: r.white@irl.cri.nz

Dr Inseok Yang, KRISS

Tel: + 82 42 868 5772

Fax: + 82 42 868 5022

E-mail: iyang@kriss.re.kr

Delegate TBD, NIM

Assisted by:

Dr Marten Durieux, KOL

Tel: + 31 71 527 5619 or 527 5480

Fax: + 31 71 527 5404

E-mail: durieux@phys.leidenuniv.nl

CCT Working Group 5

*Radiation thermometry***Chairman:**

Dr Graham Machin, NPL
 Tel: + 44 208 943 6742
 Fax: + 44 208 614 0491
 E-mail: graham.machin@npl.co.uk

Delegates and experts of member laboratories:

Dr Mark Ballico, I.N.R.I.M
 Tel: + 61 2 9413 7767
 Fax: + 61 2 9413 7202
 E-mail: mark.ballico@measurement.gov.au

Dr Mauro Battuello, I.N.R.I.M
 Tel: + 39 011 3977 338
 Fax: + 39 011 3977 347
 E-mail: m.battuello@imgc.cnr.it

Dr Ahmet Diril, UME
 Tel: + 90 262 679 5000
 Fax: + 90 262 679 5001
 E-mail: ahmetd@ume.tubitak.gov.tr

Dr Jürgen Hartmann, PTB
 Tel: + 49 531 592 1000
 Fax: + 49 531 592 1005
 E-mail: juergen.hartmann@ptb.de

Dr Jörg Hollandt, PTB
 Tel: + 49 30 8481 369
 Fax: + 49 30 8481 510
 E-mail: joerg.hollandt@ptb.de

Dr J. Ishii, NMIJ/AIST
 Tel: + 81 298 61 4031
 Fax: + 81 298 61 4010
 E-mail: j-ishii@aist.go.jp

Dr Mikhail Matveyev, VNIIM
 Tel: + 7 812 259 1064
 Fax: + 7 812 113 0114
 E-mail: m.s.matveyev@vniim.ru

Dr Peter Nemeček, SMU
 Tel: + 421 2 6029 4278

Fax: + 421 2 6542 9592
 E-mail: nemecek@smu.gov.sk

Dr Seung Nam Park, KRISS
 Tel: +82 42 868 5222
 Fax: +82 42 868 5188
 E-mail: snpark@kriss.re.kr

Mr Mohamed Sadli, LNE-INM/CNAM
 Tel: + 33 1 40 27 21 55
 Fax: 01 42 71 37 36
 E-mail: sadli@cnam.fr

Dr Peter Saunders, MSL
 Tel: +64 4 569 0000
 Fax: + 64 4 569 0003
 E-mail: p.saunders@irl.cri.nz

Dr Eric van der Ham, NMi VSL
 Tel: + 31 15 2691 586
 Fax: + 31 15 2612 971
 E-mail: evdham@nmi.nl

Dr Li Wang, A*STAR Singapore
 Tel: + 65 772 9776
 Fax: + 65 778 3798
 E-mail: wangli@nmc.a-star.edu.sg

Dr Howard W. Yoon, NIST
 Tel: + 1 301 975 2482
 E-mail: howard.yoon@nist.gov

Dr Yuan Zundong, NIM
 Tel: + 86 10 6421 8637
 Fax: + 86 10 6429 1990
 E-mail: yuanzd@nim.ac.cn

Invited members:

Dr Peter Bloembergen

Tel: + 31 71 514 2409

Fax: + 31 71 514 8329

E-mail: pbloembergen@phys.leidenuniv.nl

Mr Yoshiro Yamada, NMIJ/AIST

Tel: + 81 29 861 4003

Fax: + 81 29 861 4010

E-mail: y.yamada@aist.go.jp

CCPR representative:

Dr Nigel Fox, NPL

Tel: + 44 208 943 6825

Fax: + 44 208 943 6935

E-mail: nigel.fox@npl.co.uk

CCT Working Group 6

*Humidity measurements***Chairman:****Dr Stephanie Bell**, NPL

Tel: + 44 208 943 6402

Fax: + 44 208 614 0437

E-mail: stephanie.bell@npl.co.uk

Delegates and experts of member laboratories:**Dr Robert Benyon**, INTA

Tel: + 34 915 201 714

Tel: + 34 915 201 645

E-mail: benyonpr@inta.es

Dr Nobert Böse, PTB

Tel: + 49 531 592 3231

Fax: + 49 531 592 3369

E-mail: norbert.boese@ptb.de

Dr R. Bosma, NMI VSL

E-mail : rbosma@nmi.nl

Mrs Aliye Kartal Dogan, UME

Tel: + 90 262 679 5000 Ext. 3450

Fax: + 90 262 679 5001

E-mail: aliye.kartal@ume.tubitak.gov.tr

Dr Vito Fericola, I.N.R.I.M

Tel: +39 011 3977 337

Fax: + 39 011 3977 347

E-mail: v.fericola@imgc.cnr.it

Dr Eric Georgin, LNE-INM/CNAM-CETIAT

E-mail: eric.georgin@cetiat.fr

Dr Martti Heinonen, MIKES

E-mail: martti.heinonen@mikes.fi

Mr Y. Hong, NIM**Dr Peter H. Huang**, NIST

Tel: + 1 301 975 2621

Fax: + 1 301 548 0206

E-mail: phuang@nist.gov

Dr Hiroshi Kitano, NMIJ/AIST

Tel: + 81 298 61 4222

Fax: + 81 298 61 4135

E-mail: h.kitano@aist.go.jp

Mr Jeremy Lovell-Smith, MSL

Tel: +64 4 569 0000

Fax: +64 4 569 0003

E-Mail: j.lovell-smith@irl.cri.nz

Dr George Mamontov, VNIIM

Tel: + 7 812 176 9483

Fax: + 7 812 176 9483

E-mail: mr_mamontov@mail.ru**Dr Enrique Martines-López**, CENAM

Tel: + 52 442 211 0500 Ext. 3420

Fax: + 52 442 211 0548

E-mail: emartine@cenam.mx

Mr Hyun-Soo Nham, KRISS

Tel: + 82 42 868 5195

Fax: + 82 42 868 5290

E-mail: nhs@kriss.re.kr

Dr Olga Podmurnaya, VNIIFTRI

Tel: + 7 3952 468 303 ; + 7 3952 468 026

Fax: + 7 3952 463 848 ; + 7 3952 468 303

E-mail: office@niiftri.irk.ru ; depl5@niiftri.irk.ru

Dr Li Wang, A*STAR Singapore

Tel: + 65 7729 776

Fax: + 65 3410 846

E-mail: wangli@nmc.a-star.edu.sg

CCT Working Group 7

*Key comparisons***Chairman:****Dr Alan G. Steele**, NRC-INMS

Tel: + 1 613 993 9384

Fax: + 1 613 952 1394

E-mail: alan.steele@nrc.ca

Delegates and experts of member laboratories:**Dr Mark Ballico**, NMIA

Tel: + 61 2 9413 7767

Fax: + 61 2 9413 7202

E-mail: mark.ballico@measurement.gov.au

Dr Erich Tegeler, PTB

Tel: + 49 30 3481 525

Fax: + 49 30 3481 504

E-mail: erich.tegeler@ptb.de

Dr Stephanie Bell, NPL

Tel: + 44 208 943 6402

Fax: + 44 208 614 0437

E-mail: stephanie.bell@npl.co.uk

Dr Erik van der Ham, NMI VSL

Tel: + 31 15 269 1586

Fax: + 31 15 261 2971

E-mail: evdham@nmi.nl

Dr Franco Pavese, I.N.R.I.M

Tel: + 39 011 3977 341

Fax: + 39 011 3977 347

E-mail: f.pavese@imgc.cnr.it

Mr Rod White, MSL

Tel: + 64 4 5690 491

Fax: + 64 4 5690 003

E-mail: r.white@irl.cri.nz

Dr Richard Rusby, NPL

Tel: + 44 208 943 7036

Fax: + 44 208 943 6755

E-mail: richard.rusby@npl.co.uk

Also attending:**Dr Richard S. Davis**, BIPM

Tel: + 33 1 45 07 70 11

Fax: + 33 1 45 34 20 21

E-mail: rdavis@bipm.org

Dr Claudine Thomas, BIPM

Tel: + 33 1 45 07 7073

Fax: + 33 1 4507 6262

E-mail: cthomas@bipm.org

Mr Gregory F. Strouse, NIST

Tel: + 1 301 975-4803

Fax: + 1 301 548 0206

E-mail: gstrouse@nist.gov

CCT Working Group 8*Calibration and measurement capabilities***Chairman:****Mr Gregory F. Strouse**, NIST

Tel: + 1 301 975 4803

Fax: + 1 301 548 0206

E-mail: gstrouse@nist.gov**Delegates and experts of member laboratories:****Dr Mark Ballico**, NMIA

Tel: + 61 2 9413 7767

Fax: + 61 2 9413 7202

E-mail: mark.ballico@measurement.gov.au**Dr Wolfgang Buck**, PTB**Tel : + 49 03 03 48 11**E-mail : wolfgang.buck@ptb.de**Mr Hans Liedberg**, NMISA

Tel: + 27 12 841 2753

Fax: + 27 12 841 2131/4458

E-mail: hliedber@nmisa.org**Prof. Anatoly Pokhodun**, VNIIM

Tel: + 7 812 315 52 07

Fax: + 7 812 113 01 14

E-mail: a.i.pokhodun@vniim.ru

CCT Working Group 9*Thermophysical properties***Chairman:****Dr Tetsuya Baba**, NMIJ/AIST

Tel: + 81 29 861 4394

Fax: + 81 29 861 4236

E-mail: baba@aist.go.jp

Delegates and experts of member laboratories:**Dr Jean-Rémy Filtz**, LNE-INM/CNAM

Tel: + 33 1 3069 1215

Fax: + 33 1 3069 1234

E-mail: jean-remy.filtz@lne.fr

F. Girard, I.N.R.I.M**Dr Leonard Hanssen**, NIST

Tel: + 1 301 975 2344

E-mail: leonard.hanssen@nist.gov

Dr Juntaro Ishii, NMIJ

Tel: + 81 298 61 4031

Fax: + 81 298 61 4010

E-mail: j-ishii@aist.go.jp

Dr Sang Hyun Lee, KRISS

Tel: + 82 42 868 5199

Fax: + 82 42 868 5022

E-mail: leesh@kriss.re.kr

Dr Leonel Lira-Cortés, CENAM

Tel : + 52 442 211 05 00 Ext 3416

Fax : + 52 442 215 3904

E-mail : llira@cenam.mx

Dr Stefan Sarge, PTB

Tel: + 49 531 592 3140

E-mail: stefan.sarge@ptb.de

Dr N.A. Sokolov, VNIIM

Tel: + 7 812 323 96 32

Fax: + 7 812 113-0114

E-mail: n.a.sokolov@vniim.ru

Dr C. Stacey, NPL**Dr Jintao Zhang**, NIM

Tel: + 86 10 6421 1631

Fax: + 86 10 6421 8637

E-mail: zhangjint@nim.ac.cn

Invited:**Prof. Carlons Nieto de Castro**, Universidade de Lisboa

Tel: + 351 217 500 918

Fax: + 351 217 500 088

E-mail: cacastro@fc.ul.pt

Consultative Committee for Length (CCL)

Created in 1952

Present activities concern matters related to the definition and realization of the metre, practical length and angle measurement and advice to the CIPM in the field of length metrology.

President: **Dr Attilio Sacconi**
 ScienceDirector
 Istituto Nazionale di Ricerca Metrologica
 Stradadelle Cacce, 91
 I-10135 Turin
 ITALY
 Tel : + 39 011 3919 966
 Fax : + 39 011 3919 959
 E-mail : a.sacconi@inrim.it

Executive Secretary: **Mr Raymond Felder**, BIPM
 Tel: + 33 1 45 07 70 52
 Fax: + 33 1 45 34 20 21
 E-mail: rfelder@bipm.org

Members:

Standards, Productivity and Innovation Board [A*STAR], Singapore
 Bundesamt für Eich- und Vermessungswesen [BEV], Vienna
 Centro Español de Metrología [CEM], Madrid
 Centre for Metrology and Accreditation/Mittatekniikan Keskus [MIKES], Espoo
 Centro Nacional de Metrología [CENAM], Querétaro
 Conservatoire national des arts et métiers/Institut National de Métrologie [LNE-INM/CNAM], Paris
 Czech Metrology Institut/Český metrologický Institut [CMI], Prague
 D.I. Mendeleev Institute for Metrology, Rostekhregulirovaniye of Russia [VNIIM], St Petersburg
 Federal Office of Metrology METAS [METAS], Bern-Wabern
 Instituto Nacional de Metrologia, Normalizacao e Qualidade Industrial [INMETRO], Rio de Janeiro
 Istituto Nazionale di Ricerca Metrologica [I.N.R.I.M.], Torino
 Joint Institute for Laboratory Astrophysics [JILA], Boulder
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Measurement Institute, Australia [NMIA], Lindfield
 National Metrology Institute of Japan, Advanced Institute of Science and Technology [NMIJ/AIST],
 Tsukuba
 National Metrology Institute of South Africa [NMISA], Pretoria
 National Metrology Institute of Turkey/Ulusal Metroloji Enstitüsü [UME], Gebze-Kocaeli
 National Physical Laboratory [NPL], Teddington
 National Research Council of Canada, Institute for Measurement Standards [NRC-INMS], Ottawa
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 Slovak Institute of Metrology/Slovenský Metrologický Ústav [SMU], Bratislava
 VSL [VSL], Delft
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Instituto Português da Qualidade [IPQ], Caparica

**Attendees to the last meeting
(June 2009)**

President: Dr Attilio Sacconi

Delegates and experts of member laboratories:

Mr Andrew Baker, NMIA

Tel: + 61 2 8467 3600

Fax: + 61 2 8467 3610

E-mail: andrew.baker@guest.npl.co.uk

Dr Petr Balling, CMI

Tel: + 420 257 288 326

Fax: + 420 257 328 077

E-mail: pballing@cmi.cz

Dr Alessandro Balsamo, I.N.R.I.M

Tel: + 39 011 3919 970

Fax: + 39 011 3919 959

E-mail: a.balsamo@inrim.it

Dr Rob H. Bergmans, VSL

Tel: + 31 15 269 1641

Fax: + 31 15 261 2971

E-mail: rbergmans@nmi.nl

Dr Harrald Bosse, PTB

Tel: + 49 531 592 5200

Fax: + 49 531 592 5205

E-mail: harald.bosse@ptb.de

Dr Ronald Dixon, NIST

Tel: + 301 975 4399

Fax: + 301 869 0822

E-mail: ronald.dixson@nist.gov

Mr Raymond Felder, CCL Executive Secretary

Tel: + 33 1 45 07 70 52

Fax: + 33 1 45 34 20 21

E-mail: rfelder@bipm.org

Dr Roman Fíra, SMU

Tel: + 421 2 602 94 232

Fax: + 421 2 654 29 592

E-mail: fira@smu.gov.sk

Prof. Sitian Gao, NIM

Tel: + 86 10 6421 8565

Fax: + 86 10 6421 8703

E-mail: gaost@nim.ac.cn

Mr Walter Giardini, NMIA

Tel: + 61 2 8467 3678

Fax: + 61 2 8467 3610

E-mail: walter.giardini@measurement.gov.au

Dr Patrick Gill, NPL

Tel: + 44 20 8943 6986

Fax: + 44 20 8943 7153

E-mail: patrick.gill@npl.co.uk

Dr Feng-Lei Hong, NMIJ/AIST

Tel: + 81 29 861 4032

Fax: + 81 29 861 4045

E-mail: f.hong@aist.go.jp

Dr Patrick Juncar, LNE-INM/CNAM

Tel: + 33 1 40 27 27 05

Fax: + 33 1 58 80 89 00

E-mail: juncar@cnam.fr

Dr Jae-Wan Kim, KRISS

Tel: + 82 42 868 5157

Fax: + 82 42 868 5018

E-mail: jaewan@kriss.re.kr

Mr Oelof Kruger, NMISA

Tel: +27 12 841 4340

Fax: + 27 12 841 4458

E-mail: oakruger@nmisa.org

Dr Antti Lassila, MIKES

Tel: +358 10 605 4413

Fax: + 358 10 605 4499

E-mail: antti.lassila@mikes.fi

Dr Andrew Lewis, NPL

Tel: + 44 20 8943 6124

Fax: + 44 208 614 0533

E-mail: andrew.lewis@npl.co.uk

Dr Michael Matus, BEV
 Tel: + 43 1 21 110 6540
 Fax: + 43 1 21 110 6000
 E-mail: michael.matus@bev.gv.at

Dr Jim Pekelsky, NRC-INMS
 Tel: + 1 613 993 7578
 Fax: + 1 613 952 1394
 E-mail: jim.pekelsky@nrc-cnrc.gc.ca

Dr Fritz Riehle, PTB
 Tel: + 49 531 592 4010
 Fax: + 49 531 592 4015
 E-mail: fritz.riehle@ptb.de

Dr Lennart Robertsson, BIPM
 Tel: + 33 1 45 07 70 53
 Fax: + 33 1 45 34 20 21
 E-mail: lroberts@bipm.org

Dr Attilio Sacconi, I.N.R.I.M
 Tel : + 39 011 3919 966
 Fax: + 39 011 3919 959
 E-mail: a.sacconi@inrim.it

Dr Giorgio Santarelli, LNE
 Tel: + 33 01 40 51 22 55
 Fax: + 33 01 43 25 55 42
 E-mail: giorgio.santarelli@obspm.fr

Dr Jack Stone, NIST
 Tel: + 1 301 975 5638
 Fax: + 1 301 869 0822
 E-mail: jack.stone@nist.gov

Dr Toshiyuki Takatsuji, NMIJ/AIST
 Tel: + 81 3 5501 0844
 Fax: + 81 3 5501 0855
 E-mail: toshi-yuki.takatsuji@aist.go.jp

Observers:

Mr Emilio Prieto, CEM
 Tel: + 34 91 807 4716
 Fax: + 34 91 807 4807
 E-mail: eprieto@cem.mityc.es

Invited by the President:

Dr Jose C. de Oliveira, INMETRO
 Tel: + 55 21 2679 9024
 Fax: + 55 21 2679 1505

Dr Rudolf Thalmann, METAS
 Tel: + 41 31 32 33 385
 Fax: + 41 31 32 33 210
 E-mail: rudolf.thalmann@metas.ch

Dr Claudine Thomas, BIPM KCDB Coordinator
 Tel: + 33 1 45 07 70 73
 Fax: + 33 1 45 07 62 62
 E-mail: cthomas@bipm.org

Mr Georges-Pierre Vaillau, LNE-INM/CNAM
 Tel: + 33 1 40 43 37 77
 Fax: + 33 1 40 43 37 37
 E-mail: georges.vaillau@lne.fr

Dr Miguel Viliesid, CENAM
 Tel: + 52 442 211 0574
 Fax: + 52 442 215 3904
 E-mail: mviliesi@cenam.mx

Prof. Andrew J. Wallard, Director of the BIPM
 Tel: + 33 1 45 07 70 00
 Fax: + 33 1 45 34 86 70
 E-mail: awallard@bipm.org

Dr Tanfer Yandayan, UME
 Tel: + 90 262 679 5000 ext. 5300
 Fax: + 90 262 679 5001
 E-mail: tanfer.yandayan@ume.tubitak.gov.tr

Dr Massimo Zucco, I.N.R.I.M
 Tel: + 39 011 3919 968
 Fax: + 39 011 346 384
 E-mail: m.zucco@inrim.it

Ms Siew Leng Tan, A*STAR Singapore
 Tel: + 65 6279 1938
 Fax: + 65 6279 1994
 E-mail: tan_siew_leng@nmc.a-star.edu.sg

E-mail: jcoliveira@inmetro.gov.br

Also attending:

Dr Janet Miles, BIPM

Tel: +33 1 45 07 70 08

Fax: + 33 1 45 34 20 21

E-mail: jmiles@bipm.org

Apologies :

Dr Konstantin Chekirda, VNIIM

Tel: +7 812 323 9664

Fax: +7 812 323 9664

E-mail: k.v.chekirda@vniim.ru

CCL Working Group on Dimensional Metrology (WGDM)

Chairman: Dr Rudolf Thalmann, METAS
 Tel: + 41 31 32 33 385
 Fax: + 41 31 32 33 210
 E-mail: rudolf.thalmann@metas.ch

Participants at the meeting of 8-9 June 2009

Dr A Baker, NMIA

Dr Alessandro Balsamo, I.N.R.I.M
 Tel: + 39 011 3919 970
 Fax: + 39 011 3919 959
 E-mail: a.balsamo@inrim.it

Dr Rob H. Bergmans, VSL
 Tel: + 31 15 269 1641
 Fax: + 31 15 261 2971
 E-mail: rbergmans@nmi.nl

Dr Harald Bosse, PTB
 Tel: + 49 531 592 5200
 Fax: + 49 531 592 5205
 E-mail: harald.bosse@ptb.de

Dr K Chaudhary, NPLI

Dr Jose C. de Oliveira, INMETRO
 Tel: + 55 21 2679 9024
 Fax: + 55 21 2679 1505
 E-mail: jcoliveira@inmetro.gov.br

Dr Ronald Dixon, NIST
 Tel: + 301 975 4399
 Fax: + 301 869 0822
 E-mail: ronald.dixon@nist.gov

Dr Pedro Espina, BIPM
 Tel: + 33 1 45 07 62 72
 Fax: + 33 1 45 34 20 21
 E-mail: pedro.espina@bipm.org

Mr Raymond Felder, CCL Executive Secretary
 Tel: + 33 1 45 07 70 52
 Fax: + 33 1 45 34 20 21
 E-mail: rfelder@bipm.org

Dr Roman Fíra, SMU
 Tel: + 421 2 602 94 232
 Fax: + 421 2 654 29 592
 E-mail: fira@smu.gov.sk

Prof. Sitian Gao, NIM
 Tel: + 86 10 6421 8565
 Fax: + 86 10 6421 8703
 E-mail: gaost@nim.ac.cn

Mr Walter Giardini, NMIA
 Tel: + 61 2 8467 3678
 Fax: + 61 2 8467 3610
 E-mail: walter.giardini@measurement.gov.au

Dr Feng-Lei Hong, NMIJ/AIST
 Tel: + 81 29 861 4032
 Fax: + 81 29 861 4045
 E-mail: f.hong@aist.go.jp

Dr Jae-Wan Kim, KRISS
 Tel: + 82 42 861 5114
 Fax: + 82 42 868 5444
 E-mail: jaewan@kriss.re.kr

Mr Petr Kren, CMI
 Tel: + 420 257 288 388
 Fax: + 420 2 5732 8077
 E-mail: pkren@cmi.cz

Mr Oelof Kruger, NMISA
 Tel: +27 12 841 4340
 Fax: + 27 12 841 4458
 E-mail: oakruger@nmisa.org

Dr Antti Lassila, MIKES
 Tel: +358 10 605 4413
 Fax: + 358 10 605 4499
 E-mail: antti.lassila@mikes.fi

Dr Andrew Lewis, NPL
Tel: + 44 20 8943 6124
Fax: + 44 208 614 0533
E-mail: andrew.lewis@npl.co.uk

Dr Michael Matus, BEV
Tel: + 43 1 21 110 6540
Fax: + 43 1 21 110 6000
E-mail: michael.matus@bev.gv.at

Dr Jim Pekelsky, NRC-INMS
Tel: + 1 613 993 7578
Fax: + 1 613 952 1394
E-mail: jim.pekelsky@nrc-cnrc.gc.ca

Dr Gwo-Sheng Peng, CMS/ITRI
Tel: + 886 3 574 3773
Fax: + 886 3 572 6445
E-mail: gwo-sheng.peng@itri.org.tw

Mr Emilio Prieto, CEM
Tel: + 34 91 807 4716
Fax: + 34 91 807 4807
E-mail: eprieto@cem.mityc.es

Dr Lennart Robertsson, BIPM
Tel : + 33 1 45 07 70 53
Fax : + 33 1 45 34 20 21
E-mail : lroberts@bipm.org

Dr Attilio Sacconi, I.N.R.I.M
Tel: + 39 011 3919 966
Tel: + 39 011 3919 959
E-mail: a.sacconi@inrim.it

Dr Jack Stone, NIST
Tel: + 1 301 975 5638
Fax: + 1 301 869 0822
E-mail: jack.stone@nist.gov

Dr R Thalmann, METAS
Tel: + 41 31 32 33 385
Fax: + 41 31 32 33 210
E-mail: rudolf.thalmann@metas.ch

Dr Toshiyuki Takatsuji, NMIJ/AIST
Tel: + 81 3 5501 0844
Fax: + 81 3 5501 0855
E-mail: toshi-yuki.takatsuji@aist.go.jp

Ms Siew Leng Tan, A*STAR Singapore
Tel: + 65 6279 1938
Fax: + 65 6279 1994
E-mail: tan_siew_leng@nmc.a-star.edu.sg

Dr Claudine Thomas, BIPM KCDB Coordinator
Tel: + 33 1 45 07 70 73
Fax: + 33 1 45 07 62 62
E-mail: cthomas@bipm.org

Mr Georges-Pierre Vaillau, LNE-INM/CNAM
Tel: + 33 1 40 43 37 77
Fax: + 33 1 40 43 37 37
E-mail: georges.vaillau@lne.fr

Dr Miguel Viliesid, CENAM
Tel: + 52 442 211 0574
Fax: + 52 442 215 3904
E-mail: mviliesi@cenam.mx

Dr Leonid Vitushkin, BIPM
Tel: + 33 1 45 07 70 81
Fax: + 33 1 45 34 20 21
E-mail: lvitushk@bipm.org

Prof. Andrew Wallard, BIPM Director
Tel: + 33 1 45 07 70 00
Fax: + 33 1 45 34 86 70
E-mail: awallard@bipm.org

Dr Tanfer Yandayan, UME
Tel: + 90 262 679 5000 ext. 5300
Fax: + 90 262 679 5001
E-mail: tanfer.yandayan@ume.tubitak.gov.tr

CCL/CCTF Frequency Standards Working Group

After the decisions of the CCL 2005 and of the CCTF 2006 meetings, the former CCL Working Group for the "*Mise en Pratique*" and the former CCL-CCTF Joint Working Group have been merged to become the CCL-CCTF Frequency Standards Working Group

Co-Chairs: Dr Patrick Gill, NPL
 Tel: + 44 208 943 6986
 Fax: + 44 208 943 7153
 E-mail: patrick.gill@npl.co.uk

Dr Fritz Riehle, PTB
 Tel: + 49 531 592 4010
 Fax: + 49 531 592 4015
 E-mail: fritz.riehle@ptb.de

Participants at the meeting of 2 June 2009

Dr Elisa Felicitas Arias,
 Executive Secretary of the WG
 Tel: + 33 1 45 07 70 76
 Fax: + 33 1 45 07 70 59
 E-mail: farias@bipm.org

Dr Ramiz Hamid, UME
 Tel: + 90 262 679 5000/3150
 Fax: + 90 262 679 5001
 E-mail: ramiz.hamid@ume.tubitak.gov.tr

Dr Petr Balling, CMI
 Tel: + 420 257 288 326
 Fax: + 420 257 328 077
 E-mail: pballing@cmi.cz

Dr Feng-Lei Hong, NMIJ/AIST
 Tel: + 81 29 861 4032
 Fax: + 81 29 861 4045
 E-mail: f.hong@aist.go.jp

Dr James C. Bergquist, NIST
 Tel: + 1 303 497 5459
 Fax: + 1 303 497 7375
 E-mail: berky@boulder.nist.gov

Mr Michito Imae, NMIJ/AIST
 Tel: + 81 29 861 2291
 Fax: + 81 29 861 4202
 E-mail: michito.imaie@aist.go.jp

Mr Luc Erard, LNE-INM/CNAM
 Tel: + 33 1 40 43 40 52
 Fax: + 33 1 40 43 37 37
 E-mail: luc.erard@lne.fr

Dr Patrick Juncar, LNE-INM/CNAM
 Tel: + 33 1 40 27 27 05
 Fax: + 33 1 58 80 89 00
 E-mail: juncar@cnam.fr

Mr Raymond Felder,
 Executive Secretary of the CCL
 Tel: + 33 1 45 07 70 52
 Fax: + 33 1 45 34 20 21
 E-mail: rfelder@bipm.org

Dr Nicholas Koshelyaevsky, VNIIFTRI
 Tel: + 7 095 534 8222
 Fax: + 7 095 534 0609
 E-mail: nkoshelyaevsky@imvp.ru

Prof. Xiaoxun Gao, NIM
 Tel: + 86 10 6421 2076
 Fax: + 86 10 6429 2353
 E-mail: gaoux@nim.ac.cn

Prof. Michael Kühne, Deputy Director BIPM
 Tel: + 33 1 45 07 62 90
 Fax: + 33 1 45 34 20 21
 E-mail: mkuehne@bipm.org

Dr Aldo Godone, I.N.R.I.M
 Tel: + 39 011 391 9232
 Fax: + 39 011 391 9259
 E-mail: godone@inrim.it

Dr Taeg Yong Kwon, KRISS
 Tel : + 82 42 868 5141
 Fax : + 82 42 868 5287
 E-mail : tykwon@kriss.re.kr

Dr Pierre Lemonde, LNE-SYRTE
 Tel: + 33 1 40 51 22 24
 Fax: + 33 1 43 25 55 42
 E-mail: pierre.lemonde@obsppm.fr

Dr Tianchu Li, NIM
 Tel: + 86 10 6422 0524
 Fax: + 86 10 6429 5811
 E-mail: litch@nim.ac.cn or
 tianchuli@yahoo.com.cn

Dr José Mauricio López-Romero, CENAM
 Tel: + 52 442 211 0543
 Fax: + 52 442 215 3904
 E-mail: jlopez@cenam.mx

Dr Alan Madej, NRC-INMS
 Tel: + 1 613 993 9385
 Fax: + 1 613 952 1394
 E-mail: alan.madej@nrc-cnrc.gc.ca

Dr Mikko Merimaa, MIKES
 Tel: +358 10 605 4419
 Fax: + 358 10 605 4499
 E-mail: mikko.merimaa@mikes.fi

Dr Janet Miles, BIPM
 Tel: +33 1 45 07 70 08
 Fax: + 33 1 45 34 20 21
 E-mail: jmiles@bipm.org

Dr Vitaly Palchikov, VNIIFTRI
 Tel: + 7 499 720 9210
 Fax: + 7 095 535 73 86
 E-mail: palchikov@yahoo.com

Dr Gianna Panfilo, BIPM
 Tel: + 33 1 45 07 70 75
 Fax: + 33 1 45 34 20 21
 E-mail: gpanfilo@bipm.org

Dr Gérard Petit, BIPM
 Tel: + 33 1 45 07 70 67
 Fax: + 33 1 45 07 70 59
 E-mail: gpetit@bipm.org

Dr Steven Van den Berg, VSL
 Tel : + 31 15 269 1523
 Fax : + 31 15 261 2971
 E-mail : svdberg@vsl.nl

Dr Bruce Warrington, NMIA
 Tel : + 61 2 8467 3504 (Mobile: 0408 960 735)
 Fax: + 61 2 8467 3610
 E-mail: bruce.warrington@measurement.gov.au

Dr Elena Zagirova, VNIIFTRI
 Tel: + 7 495 660 5722
 Fax: + 7 495 744 8174 ; + 7 495 660 1741
 E-mail: ezagirova@impv.ru

Dr Massimo Zucco, I.N.R.I.M
 Tel: + 39 011 3919 968
 Fax: + 39 011 346 384
 E-mail: m.zucco@inrim.it

Prof. Andrew J. Wallard, Director of the BIPM
 Tel: + 33 1 45 07 70 00
 Fax: + 33 1 45 34 86 70
 E-mail: awallard@bipm.org

Invited by the co-chairs:

Dr Michael Matus, BEV
 Tel: + 43 1 21 110 6540
 Fax: + 43 1 21 110 6000
 E-mail: michael.matus@bev.gv.at

Ms Siew Leng Tan, A* STAR Singapore
 Tel: + 65 6279 1938
 Fax: + 65 6279 1994
 E-mail: tan_siew_leng@nmc.a-star.edu.sg

Mr Chris Matthee, NMISA
 Tel: + 27 12 841 2245
 Fax: + 27 12 841 2131
 E-mail: cmatthee@nmisa.org

Regrets: **Dr Yury S. Domnin**, VNIIFTRI

Consultative Committee for Time and Frequency (CCTF)

Created in 1956

Present activities concern matters related to the definition and realization of the second, establishment and diffusion of International Atomic Time (TAI) and Coordinated Universal Time (UTC) and advice to the CIPM on matters related to time and time scales.

President: L. Erard
 Laboratoire National de Métrologie et d'Essais
 Directeur de la recherche scientifique et technologique
 1, rue Gaston Boissier
 75015 Paris / France
 Tel: + 33 1 40 43 40 52
 Fax: + 33 1 40 43 37 37
 E-mail: luc.erard@lne.fr

Executive Secretary: Dr Elisa Felicitas Arias, BIPM
 Tel: + 33 1 45 07 70 76
 Fax: + 33 1 45 07 70 59
 E-mail: farias@bipm.org

Members :

Centro Nacional de Metrología [CENAM], Mexico
 Federal Office of Metrology [METAS], Wabern
 Institute for Physical-Technical and Radiotechnical Measurements, Rostekhnregulirovaniye of Russia [VNIIFTRI], Moscow
 International Astronomical Union [IAU]
 International GNSS Service [IGS]
 International Telecommunication Union [ITU-R], Radiocommunication Bureau
 International Union of Geodesy and Geophysics [IUGG]
 International Union of Radio Science [URSI]
 Istituto Nazionale di Ricerca Metrologica [I.N.R.I.M.], Turin
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 Laboratoire National de Métrologie et d'Essais, Observatoire de Paris, Systèmes de Référence Temps-Espace [LNE-SYRTE], Paris
 National Institute of Information and Communications Technology [NICT], Tokyo
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Boulder
 National Measurement Institute of Australia [NMIA], Lindfield
 National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology [NMIJ/AIST], Tsukuba
 National Metrology Institute of South Africa [NMISA], Pretoria
 National Physical Laboratory [NPL], Teddington
 National Physical Laboratory of India [NPLI], New Delhi
 National Physical Laboratory of Israel [INPL], Jerusalem
 National Research Council of Canada [NRC-INMS], Ottawa
 Observatoire Cantonal [ON], Neuchâtel
 Observatoire Royal de Belgique [ORB], Bruxelles
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 Real Instituto y Observatorio de la Armada [ROA], Cadiz

Space Research Center of the Polish Academy of Sciences [SRC], Warsaw

Technical University [TUG], Graz

U.S. Naval Observatory [USNO], Washington

VSL [VSL], Delft

The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Standards, Productivity and Innovation Board [A*STAR], Singapore

Ulusal Metroloji Enstitüsü/National Metrology Institute of Turkey [UME], Gebze-Kocaeli

Attendees to the last meeting (June 2009)

President : Mr Luc Erard LNE

Delegates and experts of member laboratories:

Dr Joseph Achkar, LNE-SYRTE

Tel: + 33 01 40 51 22 16

Fax: + 33 01 43 25 55 42

E-mail: joseph.achkar@obspm.fr

Dr Andreas Bauch, PTB

Tel: + 49 531 592 4320

Fax: + 49 531 592 4479

E-mail: andreas.bauch@ptb.de

Dr Ronald Beard, ITU-R

Tel: + 1 202 404 7054

Fax: + 1 202 767 2845

E-mail: ronald.beard@nrl.navy.mil or
ronald.beard@ties.itu.int

Dr James C. Bergquist, NIST

Tel: + 1 303 497 5459

Fax: + 1 303 497 7375

E-mail: berkyl@boulder.nist.gov

Dr Claude Boucher, IUGG

Tel: + 33 1 55 55 98 96

Fax: + 33 1 55 55 98 46

E-mail: Claude.Boucher@espace.gouv.fr

Dr Franco Cordara, I.N.R.I.M

Tel: + 39 011 3919.1

Fax: + 39 011 346 384

E-mail: f.cordara@inrim.it

Dr John Davis, NPL

Tel: + 44 208 943 7137

Fax: + 44 208 943 6458

E-mail: john.davis@npl.co.uk

Dr Pascale Defraigne, ORB

Tel: + 32 2 373 0260

Fax: + 32 2 374 9822

E-mail: pascale.defraigne@oma.be

Mr Erik Dierikx, NMI VSL

Tel: + 31 15 269 1591

Fax: + 31 15 261 2971

E-mail: edierikx@nmi.nl

Mr Luc Erard, LNE

Tel: + 33 1 40 43 40 52

Fax: + 33 1 40 43 37 37

E-mail: luc.erard@lne.fr

Dr Francisco Javier Galindo Mendoza, ROA

Tel: + 34 956 599 286

Fax: + 34 956 599 366

E-mail: jgalindo@roa.es

Prof. Xiaoxun Gao, NIM

Tel: + 86 10 6421 2076

Fax: + 86 10 6429 2353

E-mail: gaoxx@nim.ac.cn

Dr Patrick Gill, NPL

Tel: + 44 208 943 6986

Fax: + 44 208 943 7153

E-mail: patrick.gill@npl.co.uk

Dr Aldo Godone, I.N.R.I.M

Tel: + 39 011 391 9232

Fax: + 39 011 391 9259

E-mail: godone@inrim.it

Dr Feng-Lei Hong, NMIJ/AIST

Tel: + 81 29 861 4032

Fax: + 81 29 861 4045

E-mail: f.hong@aist.go.jp

Dr Mizuhiko Hosokawa, NICT

Tel: + 81 42 327 7557

Fax: + 81 42 327 6634

E-mail: hosokawa@nict.go.jp

Dr Takeshi Ikegami, NMIJ/AIST

Tel: + 81 29 861 4253

Fax: + 81 29 861 4010

E-mail: t.ikegami@aist.go.jp

Mr Michito Imae, NMIJ/AIST

Tel: + 81 298 61 2291

Fax: + 81 298 61 4202

E-mail: michito.imaie@aist.go.jp

Dr Nicholas Koshelyaevsky, VNIIFTRI

Tel: + 7 095 534 8222

Fax: + 7 095 534 0609

E-mail: nkoshelyaevsky@imvp.ru

Dr Yasuhiro Koyama, NICT

Tel: + 81 42 327 7457

Fax: + 81 42 327 7457

E-mail: koyama@nict.go.jp

Dr Taeg Yong Kwon, KRISS

Tel: + 82 42 868 5141

Fax: + 82 42 868 5287

E-mail: tykwon@kriss.re.kr

Dr Pierre Lemonde, SYRTE

Tel: + 33 1 40 51 22 24

Fax: + 33 1 43 25 55 42

E-mail: pierre.lemonde@obsppm.fr

Dr Judah Levine, NIST

Tel: + 1 303 497 3903

Fax: + 1 303 497 6461

E-mail: jlevine@boulder.nist.gov

Dr Tianchu Li, NIM

Tel: + 86 10 6422 0524

Fax: + 86 10 6429 5811

E-mail: litch@nim.ac.cn or
tianchuli@yahoo.com.cn

Dr José Mauricio López-Romero, CENAM

Tel: + 52 442 211 0543

Fax: + 52 442 215 3904

E-mail: jlopez@cenam.mx

Dr Alan Madej, NRC-INMS

Tel: + 1 613 993 9385

Fax: + 1 613 952 1394

E-mail: alan.madej@nrc-cnrc.gc.ca

Dr Louis Marmet, NRC-INMS

Tel: + 613 993 998 1317

Fax: + 613 952 1394

E-mail: louis.marmet@nrc-cnrc.gc.ca

Dr Demetrios N. Matsakis, USNO

Tel: + 1 202 762 1587

Fax: + 1 202 762 1511

E-mail: dnm@usno.navy.mil

Mr Chris Matthee, NMISA

Tel: + 27 12 841 2245

Fax: + 27 12 841 2131

E-mail: cmatthee@nmisa.org

Mr James Mc A. Steele, NPL and URSI

Tel: + 44 1243 864 255

Fax: + 44 2089 432 155

E-mail: james.steele@tesco.net

Dr Dennis McCarthy, USNO and IAU

Tel: + 1 202 762 1837

Fax: + 1 202 762 1563

E-mail: dmc@maia.usno.navy.mil

Dr Thomas R. O'Brian, NIST

Tel: + 1 303 497 4570

Fax: + 1 301 975 6461

E-mail: obrian@boulder.nist.gov

Dr Vitaly Palchikov, VNIIFTRI

Tel: + 7 499 720 9210

Fax: + 7 095 535 73 86

E-mail: palchikov@yahoo.com

Dr Thomas E. Parker, NIST

Tel: + 1 303 497 7881

Fax: + 1 303 497 6461

E-mail: tparker@boulder.nist.gov

Dr Dirk Piester, PTB

Tel: + 49 531 592 4421

Fax: + 49 531 592 4015

E-mail: dirk.piester@ptb.de

Dr Fritz Riehle, PTB
 Tel: + 49 531 592 4010
 Fax: + 49 531 592 4015
 E-mail: fritz.riehle@ptb.de
Dr Kenneth Senior, IGS
 Tel: + 1 202 767 2043
 Fax: + 1 202 767 2845
 E-mail: ken.senior@nrl.navy.mil

Dr André Stefanov, METAS
 Tel: + 41 31 32 33 298
 Fax: + 41 31 323 3210
 E-mail: Andre.Stefanov@metas.ch

Dr Patrizia Tavella, I.N.R.I.M
 Tel: + 39 011 391 9235
 Fax: + 39 011 391 9259

Observers:

Dr Ramiz Hamid, UME
 Tel: + 90 262 679 5000/3150
 Fax: + 90 262 679 5001
 E-mail: ramiz.hamid@ume.tubitak.gov.tr

Invited by the President:

Dr Thomas R. Bartholomew
 Tel: + 1 240 456 2010 (office)
 Tel: + 1 240 599 1764 (mobile)
 E-mail: tombartholomew@netzero.com;
 thomas.bartholomew@ngc.com

Apologies:

Dr Parameswar Banerjee, NPLI
 Tel : + 91 11 2584 1506 or 11 287 4318 (private)
 Fax : + 91 11 2584 1506
 E-mail : pbanerjee@mail.nplindia.ernet.in

Dr Yury S. Domnin, VNIIFTRI
 Tel: + 7 095 535 9151
 Fax: + 7 095 534 0609
 E-mail: ydomnin@imvp.ru

Dr Peter Fisk, NMIA
 Tel: + 61 2 8467 3640
 Mobile: + 61 2 0418 693 962
 Fax: + 61 2 8467 3752
 E-mail: peter.fisk@measurement.gov.au

E-mail: tavella@inrim.it

Dr Philip Tuckey, LNE-SYRTE
 Tel: + 33 01 40 51 22 04
 Fax: + 33 01 43 25 55 42
 E-mail: philip.tuckey@obspm.fr

Dr Bruce Warrington, NMIA
 Tel: + 61 2 8467 3504 (Mobile: 0408 960 735)
 Fax: + 61 2 8467 3610
 E-mail: bruce.warrington@measurement.gov.au

Dr Elena Zagirova, VNIIFTRI
 + 7 495 660 5722
 + 7 495 744 8174 ; + 7 495 660 1741
 ezagirova@impv.ru

Ms Siew Leng Tan, A*STAR
 Tel: + 65 6279 1938
 Fax: + 65 6279 1994
 E-mail: tan_siew_leng@nmc.a-star.edu.sg

Dr William J. Klepczynski
 Tel: + 1 410 798 8457
 Tel: + 1 202 286 3050
 Fax: + 1 410 798 8567
 E-mail: wklepczy@comcast.net

Dr Kenneth J. Johnston, USNO
 Tel: + 81 422 34 3613
 Fax: + 81 422 34 3810
 E-mail: kjj@astro.usno.navy.mil

Dr Ilya Kuselman, INPL
 Tel: + 972 2 566 1856
 Fax: + 972 2 652 0797
 E-mail: ilya.kuselman@moital.gov.il

Prof Ian M. Mills, CCU President, University of Reading
 Tel: + 44 118 378 8456
 Fax: + 44 118 931 6331

E-mail: i.m.mills@reading.ac.uk
E-mail: millsat57@onetel.net.uk

Dr Robert A. Nelson, Satellite Engineering
Research Corporation
Tel: + 1 301 657 9641
Fax: + 1 301 657 9642
E-mail: robtnelson@aol.com

CCTF Working Group on TAI

The CCTF working group on TAI was set up by the CCDS in 1985 to make proposals for improvements in TAI and UTC based upon the needs of users. It organizes meetings of representatives of contributing laboratories to TAI, on the days preceding meetings of CCTF.

Chairwoman: Dr Patrizia Tavella, I.N.R.I.M

Tel: + 39 011 391 9235

Fax: + 39 011 391 9259

E-mail: tavella@inrim.it

Members:

Representative of the IAU

Representative of the IUGG

Representative of the URSI

Representative of the ITU

Representative of the CIPM

Prof. Jean Kovalevsky

Tel: + 33 4 93 40 53 87

Fax: + 33 4 93 40 53 33

E-mail: kovalevsky@obs-azur.fr

Prof. Andrew Wallard

Tel: + 33 1 45 07 70 00

Fax: + 33 1 45 34 86 70

E-mail: awallard@bipm.org

BIPM Time section

Dr Elisa Felicitas Arias

Tel: + 33 1 45 07 70 76

Fax: + 33 1 45 07 70 59

E-mail: farias@bipm.org

CCTF Group on GNSS* Time Transfer Standards (CGGTTS)

*GNSS = Global navigation satellite systems

Chairman:**Dr Judah Levine, NIST**

Tel: + 1 303 497 3903

Fax.: + 1 303 497 6461

E-mail: jlevine@boulder.nist.gov

Delegates and experts of member laboratories:

No official membership has been drawn up for the sub-group which organizes open forums whose attendees are representatives of national timing centres and manufacturers of GPS and GLONASS time receivers. However, a core of members can be listed as follows.

Dr Franco Cordara, I.N.R.I.M

Tel: + 39 0 11 39 19 239

Fax: + 39 0 11 34 87 046

E-mail: cordara@inrim.it

Dr Pascale Defraigne, ORB

Tel: + 32 2 373 0260

Fax: + 32 2 374 9822

E-mail: pascale.defraigne@oma.be

Mr Michito Imae, NMIJ/AIST

Tel: + 81 29 861 2291

Fax: + 81 29 861 4145

E-mail: michito.imaie@aist.go.jp

Dr Gerrit de Jong, NMI VSL

Tel: + 31 15269 16 23

Fax: + 31 15261 29 71

E-mail: gdejong@nmi.nl

Dr William J. Klepczynski

Innovative Solutions International

Tel: + 1 703 841 2669

Fax: + 1 703 465 9158

E-mail: wklepczy@aol.com

Dr Nicholas Kosheyalevsky, NPO-VNIIFTRI

Tel: + 7 095 534 8222

Fax: + 7 095 534 0609

E-mail: atime@adonis.iasnet.com

Dr Wlodzimierz Lewandowski, BIPM

(Secretary of the Working Group)

Tel: + 33 1 45 07 70 63

Fax: + 33 1 45 07 70 59

E-mail: wlewandowski@bipm.org

Dr Jerzy Nawrocki , SRC

Tel: + 48 22 851 1810 or 840 3570

Fax: + 48 22 840 3131

E-mail: nawrocki@cbk.poznan.pl

Dr Gérard Petit, BIPM

Tel: + 33 1 45 07 70 67

Fax: + 33 1 45 07 70 59

E-mail: gpetit@bipm.org

Dr Pierre Uhrich, LNE-SYRTE

Tel: + 33 1 40 51 22 16

Fax: + 33 1 43 25 55 42

E-mail: pierre.uhrich@obspm.fr

Dr Marc A. Weiss, NIST

Tel: + 1 303 497 3261

Fax: + 1 303 497 6461

E-mail: mweiss@boulder.nist.gov

Sub-Group of the CCTF Working Group on TAI on Algorithms

Chairwoman:

Dr Patrizia Tavella, I.N.R.I.M

Tel: + 39 011 391 9235

Fax: + 39 011 391 9259

E-mail: tavella@inrim.it

No official membership is established.

CCTF Working Group on Two-way Satellite Time and Frequency Transfer

Chairman:

Dr William J. Klepczynski

Tel: + 1 703 841 2669

Fax: + 1 703 465 9158

E-mail: wklepczy@aol.com

Delegates and experts of member laboratories:

No official membership has been drawn up for this working group which organizes meetings whose attendees are representatives of national timing centres interested in two-way time and frequency transfer and manufacturers of two-way equipment. However, a core of members can be listed as follows:

Dr Joseph Achkar, LNE-SYRTE

Tel: + 33 1 40 51 22 16

Fax: + 33 1 40 51 55 42

E-mail: joseph.achkar@obspm.fr

Dr Gerrit de Jong, NMI VSL

Tel: + 31 15269 16 23

Fax: + 31 15261 29 71

E-mail: gdejong@nmi.nl

Dr Françoise Baumont, OCA/CERGA

Tel: + 33 4 93 40 53 38

Fax: + 33 4 93 40 53 33

E-mail: baumont@obs-azur.fr

Dr James A. De Young, USNO

Tel: + 1 202 762 15 00

Fax: + 1 202 762 15 11

E-mail: dey@herschel.usno.navy.mil

Dr Franco Cordara, I.N.R.I.M

Tel: + 39 0 11 39 19 239

Fax: + 39 0 11 34 87 046

E-mail: cordara@inrim.it

Dr Peter Fisk, NMIA

Tel: + 61 2 9413 7221

Fax: + 61 2 9413 7200

E-mail: peterf@measurement.gov.au

Dr John Davis, NPL

Tel: + 44 208 943 71 37

Fax: + 44 208 943 71 39

E-mail: jad@newton.npl.co.uk

Dr Mizuhiko Hosokawa, NICT

Tel: + 81 42 327 7557

Fax: + 81 42 327 6694

E-mail: hosokawa@nict.go.jp

Mr Michito Imae, NMIJ/AIST

Tel: + 81 29 861 2291

Fax: + 81 29 861 4145

E-mail: michito.imaie@aist.go.jp

Dr Zhiheng Jiang, BIPM

Tel: + 33 1 45 07 70 34
 Fax: + 33 1 45 07 70 59
 E-mail: zjiang@bipm.org

Dr Huanxin Li, NTSC

Tel: +86-29-83890451
 Fax: +86-29-83890196
 E-mail: lhx@ntsc.ac.cn

Dr Wlodzimierz Lewandowski, BIPM

(Secretary of the Working Group)

Tel: + 33 1 45 07 70 73
 Fax: + 33 1 45 07 70 59
 E-mail: wlewandowski@bipm.org

Dr Demetrios N. Matsakis, USNO

Tel: + 1 202 762 1587
 Fax: + 1 202 762 1511
 E-mail: dnm@usno.navy.mil

Dr Juan Palacio, ROA

Tel: + 34 956 599 286
 Fax: + 34 956 599 366
 E-mail: jpalacio@roa.es

Dr Thomas E. Parker, NIST

Tel: + 1 303 497 7881
 Fax: + 1 303 497 6461
 E-mail: tparker@boulder.nist.gov

Dr Dirk Piester, PTB

Tel: + 49 531 592 43 32
 Fax: + 49 531 592 44 79
 E-mail: dirk.piester@ptb.de

Dr Peter Whibberley, NPL

Tel: + 44 208 943 6746
 Fax: + 44 208 943 6529
 E-mail: peter.whibberley@npl.co.uk

Prof. Li Zhigang, CSAO

Tel: + 86 29 389 0320
 Fax: + 86 29 389 0196
 E-mail: kyc@ms.sxso.ac.cn

CCTF Working Group on Primary Frequency Standards

Chairman:**Dr Thomas E. Parker, NIST**

Tel: + 1 303 497 7881
 Fax: + 1 303 497 6461
 E-mail: tparker@boulder.nist.gov

No official membership is established.

CCTF Working Group on Key Comparisons in Time and Frequency

Chairman:**Dr Gerrit de Jong, NMi VSL**

Tel: + 31 15 2691 623
 Fax: + 31 15 2612 971
 E-mail: gdejong@nmi.nl

Delegates and experts of member laboratories:

Dr Jean-Simon Boulanger, NRC-INMS

Tel: + 1 613 993 5698

Fax: + 1 613 952 1394

E-mail: jean-simon.boulanger@nrc.ca

Dr Nicholas Koshelyaevsky, NPO-VNIIFTRI

Tel: + 7 095 534 8222

Fax: + 7 095 534 0609

E-mail: nkoshelyavesky@imvp.aspnet.ru

Mr Louis Marais, NMISA

Tel + 27 12 841 3013

Fax + 27 12 841 21 31

E-mail: elmarais@nmisa.org

Dr Shin-Ichi Ohshima, NMIJ/AIST

Tel: + 81 298 61 4312

Fax: + 81 298 61 4313

E-mail: s.ohshima@aist.go.jp

Dr Juan Palacio, ROA

Tel: + 34 956 599 286

Fax: + 34 956 599 366

E-mail: jpalacio@roa.es

Consultative Committee for Ionizing Radiation (CCRI)**Created in 1958**

Present activities concern matters related to the definitions of quantities and units, standards and comparisons for x-ray, γ -ray, charged particle and neutron dosimetry, radioactivity measurement and the International Reference System for radionuclides (SIR), and advice to the CIPM on matters related to ionizing radiation standards.

President: **Dr Kim Carneiro**
 Director
 DFM – Danish Fundamental Metrology Ltd;
 Matematiktorvet
 Building 307
 DK-2800
 Lyngby
 Denmark
 Tel: + 45 4525 5867
 Fax: + 45 4593 1137
 E-mail: kc@dfm.dtu.dk

Executive Secretary: **Dr Penelope Allisy-Roberts**, BIPM
 Tel: + 33 1 45 07 70 90
 Fax: + 33 1 45 34 20 21
 E-mail: allisy-roberts@bipm.org

Members at the last meeting in June 2009:

The Chairman of Section I (**Dr Peter Sharpe**, NPL)
 The Chairman of Section II (**Dr Bruce Simpson**, NMISA)
 The Chairman of Section III (**Dr David Thomas**, NPL)
 The Director of the BIPM (**Prof. Andrew J. Wallard**)

CCRI RMO Working Group on IR CMCs

Coordinator: **Dr A.H.L. Aalbers**, VSL
 Tel: + 31 15 269 1500
 Fax: + 31 15 261 2971
 E-mail: aalbers@nmi.nl

Section I (X and γ rays, charged particles)

Chairman: **Dr Peter Sharpe**, NPL
 Tel: + 44 208 943 6647
 Fax: + 44 208 943 6680
 E-mail: peter.sharpe@npl.co.uk

Members:

Australian Radiation Protection And Nuclear Safety Agency [ARPANSA], Yallambie
 Bundesamt für Eich- und Vermessungswesen [BEV], Vienna
 Central Office of Measures/Główny Urząd Miar [GUM], Warsaw
 Commissariat à l'énergie atomique/Laboratoire National Henri Becquerel [LNE-LNHB], Gif sur Yvette
 D.I. Mendeleev Institute for Metrology, Rostekhregulirovaniye of Russia [VNIIM], St Petersburg
 Ente per le Nuove Tecnologie, l'Energia e l'Ambiente -Istituto Nazionale di Metrologia delle Radiazioni
 Ionizzanti [ENEA-INMRI], Roma
 Federal Office of Metrology [METAS], Bern-Wabern
 Hungarian Trade Licensing Office [MKEH], Budapest
 International Commission on Radiation Units and Measurements [ICRU]
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Metrology Institute of Japan, AIST [NMIJ/AIST], Tsukuba
 National Physical Laboratory [NPL], Teddington
 National Research Council of Canada [NRC-INMS], Ottawa
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 VSL, [VSL], Delft
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas [CIEMAT], Madrid
 Comisión Nacional de Energía Atómica [CNEA], Buenos Aires
 Czech Metrology Institute [CMI], Brno
 Instituto Tecnológico e Nuclear [ITN], Sacavém
 International Atomic Energy Agency [IAEA]
 International Organization for Medical Physics [IOMP]
 International Radiation Protection Association [IRPA]
 Instituto Tecnológico e Nuclear [ITN], Sacavém
 National Laboratory for Metrology of Ionising Radiation/Institute of Radiation Protection and Dosimetry
 CNEN [LNMRI/IRD], Rio de Janeiro
 National Metrology Institute of South Africa [NMISA], Pretoria
 Swedish Radiation Safety Authority [SSM], Stockholm

Attendees at the last meeting of Section I (May 2009)

Chairman: Dr Peter Sharpe, NPL

Delegates and experts of member laboratories:

Dr Jean-Marc Bordy, LNE-LNHB

Tel : + 33 1 69 08 41 89
 Fax : + 33 1 69 08 47 73
 E-mail : jean-marc.bordy@cea.fr

Dr Kim Carneiro, DFM

Tel: + 45 45 25 5867
 Fax: + 45 45 93 1137
 E-mail: kc@dfm.dtu.dk

Dr István Csete, MKEH

Tel: + 36 1 458 5945
 Fax: + 36 1 458 5937
 E-mail: cseteis@mkeh.hu

Mr Frank Delaunay, LNE-LNHB

Tel: + 33 1 69 08 84 05

Fax: + 33 1 69 08 47 73
 E-mail: franck.delaunay@cea.fr
Dr Simon Duane, NPL
 Tel: + 44 208 943 6568
 Fax: + 44 208 943 6070
 E-mail: simon.duane@npl.co.uk

Mr Luc Erard, LNE
 Tel: + 33 1 40 43 40 52
 Fax: + 33 1 40 43 37 37
 E-mail: luc.erard@lne.fr

Dr Hans-Michael Kramer, PTB
 Tel: + 49 531 592 6200
 Fax: + 49 531 592 6205
 E-mail: hans-michael.kramer@ptb.de

Dr Raffaele Fedele Laitano, ENEA-INMRI
 Tel: + 39 06 30 48 3559
 Fax: + 39 06 3048 3558
 E-mail: fedele.laitano@enea.it

Dr José Maria Los Arcos, CIEMAT
 Tel: + 34 91 346 6288
 Fax: + 34 91 346 6442
 E-mail: jm.losarcos@ciemat.es

Dr Franz-Josef Maringer, BEV
 Tel: + 43 1 21 110 6372
 Fax: + 43 1 21 110 6000
 E-mail: franz-josef.maringer@bev.gv.at

Dr Michael Mitch, NIST
 Tel: +1 301 975 5491
 Fax: + 1301 869 7682
 E-mail: michael.mitch@nist.gov

Mr Chris Oliver, ARPANSA
 Tel: +33 61 3 9433 2333
 Fax: +33 61 3 9432 1835
 E-mail: Chris.Oliver@arpansa.gov.au

Dr Maria Pimpinella, ENEA-INMRI
 Tel: + 39 06 3048 6680
 Fax: + 39 06 3048 3558
 E-mail: maria.pimpinella@enea.it

Observers:

Dr Ahmed Meghzifene, IAEA
 Tel: + 43 1 2600 21653
 Fax: + 43 1 2600 721 662
 E-mail: a.meghzifene@iaea.org

Dr Carl Ross, NRC-INMS
 Tel: + 1 613 993 9352 ext : 233
 Fax: + 1 613 952 9865
 E-mail: carl.ross@nrc-cnrc.gc.ca

Mr Stephen M. Seltzer, NIST
 Tel: +1 301 975 5552
 Fax: + 1 301 869 7682
 E-mail: stephen.seltzer@nist.gov

Dipl; Ing. Andreas Steurer, BEV
 Tel: + 43 1 21 110 6379
 Fax: + 43 1 21 110 6000
 E-mail: andreas.steurer@bev.gv.at

Dr Maria Pia Toni, ENEA-INMRI
 Tel: + 39 06 3048 3957
 Fax: + 39 06 3048 6097
 E-mail: mariapia.toni@casaccia.enea.it

Dr Damian Twerenbold, METAS
 Tel: + 41 31 323 3274
 Fax: + 41 31 323 3210
 E-mail: damian.twerenbold@metas.ch

Mr Eduard van Dijk, VSL
 Tel: + 31 15 269 1681
 Fax: + 31 15 261 2971
 E-mail: evandijk@vsl.nl

Ms Anna Y. Villevalde, VNIIM
 Tel: + 7 812 323 9613
 Fax: + 7 812 323 9617
 E-mail: vay@vniim.ru

Dr David Webb, ARPANSA
 Tel: + 61 3 9433 2227
 Fax: + 61 3 9432 1835
 E-mail: david.webb@arpansa.gov.au

Prof. Yanli Zhang, NIM
 Tel: + 86 10 6452 5009
 Fax: + 86 10 6421 4927
 E-mail: zhangyl@nim.ac.cn

Ms Zakithi Msimang, NMISA
 Tel: + 27 12 841 3303
 Fax: + 27 12 841 3367

E-mail: zmsimang@nmisa.org

Dr José Guilherme Peixoto, LNMRI/IRD

Tel: + 55 21 3411 8158

Fax: + 55 21 3411 8163

E-mail: guilherm@ird.gov.br

Dr Vladimir Sochor, CMI

Tel: + 420 266 020 285

Fax: + 420 266 020 466

E-mail: vsochor@cmi.cz

Invited by the Chairman:

Dr Tony Aalbers, VSL

Tel: + 31 15 269 1500

Fax: + 31 15 261 2971

E-mail: taalbers@xs4all.nl or aalbers@vsl.nl

Dr Gamal Mohamed Hassan, NIS

Tel: + 20 2 386 74 53

Fax: + 20 2 386 74 51

E-mail: g_hassan@nis.sci.eg

gamalhassan65@hotmail.com

Prof. André Allisy, c/o BIPM

Tel: + 33 1 45 07 70 70

Fax: + 33 1 45 34 20 21

E-mail: allisy-roberts@bipm.org

Dr José Maria Los Arcos, CIEMAT

Tel: + 34 91 346 6288

Fax: + 34 91 346 6442

E-mail: jm.losarcos@ciemat.es

Dr José Alvarez Romero, ININ

Tel: + 52 55 53 29 7200

Fax: + 52 55 53 29 7244

E-mail: Trinidad.alvarez@ininn.gob.mx

Dr Carlos Oliveira, ITN

Tel: + 351 21 994 6309

Fax: + 351 21 994 1995

E-mail: coli@itn.pt

Mr Hans Bjerke, NRPA

Tel: + 47 67 16 25 75

Fax: + 47 67 14 74 07

E-mail: hans.bjerke@nrpa.no

Dr Hans Rabus, PTB

Tel: + 49 531 592 6600

Fax: + 49 531 592 696600

E-mail: Hans.Rabus@ptb.de

Dr Antonio Brosed, CIEMAT

Tel: + 39 91 3466 097

Fax: + 34 91 3466 442

E-mail: antonio.brosed@gmail.com

Dr Chul-Young Yi, KRISS

Tel: + 82 42 861 5114

Fax: + 82 42 868 5444

E-mail: cyyi@kriss.re.kr

CCRI Section I Working Group on Key Comparisons

Coordinator: **Dr Peter Sharpe, NPL**

Tel: + 44 208 943 6647

Fax: + 44 208 943 6680

E-mail: peter.sharpe@npl.co.uk

CCRI Section I Working Group on Brachytherapy Standards

Coordinator: **Dr Penelope Allisy-Roberts**, BIPM
 Tel: + 33 1 45 07 70 90
 Fax: + 33 1 45 34 20 21
 E-mail: allisy-roberts@bipm.org

CCRI Section I Working Group on Accelerator Dosimetry

Coordinator: **Dr Peter Sharpe**, NPL
 Tel: + 44 208 943 6647
 Fax: + 44 208 943 6680
 E-mail: peter.sharpe@npl.co.uk

Section II (Measurement of radionuclides)

Chairman: **Dr Bruce Simpson**, NMISA
 Tel: + 27 21 686 2759 or 685 4325
 Fax: + 27 21 686 2759 or 686 6116
 E-mail: bsimpson@nmisa.org

Members:

Australian Nuclear Science & Technology Organization [ANSTO], Menai
 Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas [CIEMAT], Madrid
 Commissariat à l'énergie atomique/Laboratoire National Henri Becquerel [LNE-LNHB], Gif sur Yvette
 Czech Metrology Institute [CMI], Brno
 D.I. Mendeleev Institute for Metrology, Rostekhnregulirovaniye of Russia [VNIIM], St Petersburg
 Ente per le Nuove Tecnologie, l'Energia e l'Ambiente -Istituto Nazionale di Metrologia delle Radiazioni
 Ionizzanti [ENEA-INMRI], Roma
 "Horia Hulubei" National Institute of Research and Development for Physics and Nuclear Engineering
 [IFIN-HH], Bucharest - Magurele
 Hungarian Trade Licensing Office [MKEH], Budapest
 Institute for Reference Materials and Measurements [IRMM], Geel
 Institut de Radiophysique Appliquée [IRA], Lausanne
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Laboratory for Metrology of Ionising Radiation/Institute of Radiation Protection and Dosimetry
 CNEN [LNMRI/IRD], Rio de Janeiro
 National Metrology Institute of Japan, AIST [NMIJ/AIST], Tsukuba
 National Metrology Institute of South Africa [NMISA], Cape Town
 National Physical Laboratory [NPL], Teddington
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 Radioisotope Centre POLATOM [RC], Swierk
 Prof. Dr Gerhard Winkler [IHK], Vienna
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Bhabha Atomic Research Centre [BARC], Mumbai
 Bundesamt für Eich- und Vermessungswesen [BEV], Vienna
 Comision Nacional de Energia Atomica [CNEA], Buenos Aires
 International Atomic Energy Agency [IAEA], Vienna
 International Commission on Radiation Units and Measurements [ICRU], Bethesda
 International Organization for Medical Physics [IOMP],
 International Radiation Protection Association [IRPA], Fontenay aux Roses
 National Research Council of Canada [NRC-INMS], Ottawa
 VSL Dutch Metrology Institute [VSL], Delft

Attendees at the last meeting of Section II (June 2009)

Chairman: Dr Bruce Simpson, NMISA

Delegates and experts of member laboratories:

Dr Dimitri Alexiev, ANSTO

Tel: + 61 2 9717 3182

Fax: + 61 2 9717 9265

E-mail: dax@ansto.gov.au

Dr Pierino de Felice, ENEA-INMRI

Tel/ + 39 06 3048 3580

Fax: + 39 06 3048 3558

E-mail: pierino.defelice@enea.it

Dr Dirk Arnold, PTB

Tel: + 49 531 592 6100

Fax: + 49 531 592 6305

E-mail: dirk.arnold@ptb.de

Mr Piers de Lavison, NPL

Tel: + 44 208 943 6410

Fax: + 44 208 614 0484

E-mail: piers.de.lavison@npl.co.uk

Dr Christophe Bobin, LNE-LNHB

Tel: + 33 1 69 08 29 64

Fax: + 33 1 69 08 26 19

E-mail: christophe.bobin@cea.fr

Dr Lena Johansson, NPL

Tel: + 44 208 943 8587

Fax: + 44 208 943 8700

E-mail: lena.johansson@npl.co.uk

Dr François Bochud, IRA

Tel: + 41 21 623 3435

Fax: + 41 21 623 3434

E-mail: francois.bochud@chuv.ch

Dr Lisa R. Karam, NIST

Tel: + 1 301 975 5561

Fax: + 1 301 869 7685

E-mail: lisa.karam@nist.gov

Dr Ryszard Broda, RC

Tel: + 48 22 718 07 21

Fax: + 48 22 718 03 50

E-mail: r.broda@polatom.pl

Dr John Keightley, NPL

Tel: + 44 20 8943 6398

Fax: + 44 20 8943 8700

E-mail: john.keightley@npl.co.uk

Dr Marco Capogni, ENEA-INMRI

Tel: + 39 06 3048 6628

Fax: + 39 06 3048 3558

E-mail: marco.capogni@enea.it

Dr José Maria Los Arcos, CIEMAT

Tel: + 34 91 346 6288

Fax: + 34 91 346 6442

E-mail: jm.losarcos@ciemat.es

Mr François Damoy, LNE-LNHB

Tel: + 33 1 69 08 63 25

Fax: + 33 1 69 08 26 19

E-mail: francois.damoy@cea.fr

Dr Stefaan Pommé, IRMM

Tel: + 32 14 571 289

Fax: + 32 14 578 864

E-mail: stefaan.pomme@ec.europa.eu

Dr Maria Sahagia, IFIN-HH
Tel: + 4021 404 61 63
Fax: + 4021 457 4432 or 4440
E-mail: masahagia@nipne.ro

Mrs Tatiana Shilnikova, VNIIM
Tel: + 7 812 323 96 12
Fax: + 7 812 323 96 17
E-mail: shti@vniim.ru

Dr Jana Sochorová, CMI
Tel: + 420 266 020 400
Fax: + 420 266 020 466
E-mail: jsochorova2@cmi.cz

Mr László Szücs, MKEH
Tel/ + 36 1 458 5911
Fax: + 36 1 458 5937
E-mail: szucsaszlo@mkeh.hu

Dr Michael P. Unterweger, NIST
Tel: + 1 301 975 5536
Fax: + 1 301 926 7416
E-mail: michael.unterweger@nist.gov

Dr Uwe Wätjen, IRMM
Tel: + 32 14 571 882
Fax: + 32 14 584 273
E-mail: uwe.waetjen@ec.europa.eu

Prof. Yang Yuandi, NIM
Tel: + 86 10 6452 5001
Fax: + 86 10 6421 9860
E-mail: yangyd@nim.ac.cn

Dr Akira Yunoki, NMIJ/AIST
Tel: + 81 29 861 3470
Fax: + 81 29 861 5673
E-mail: a.yunoki@aist.go.jp

Observers:

Dr Carri Boras, IOMP
Tel: + 55 81 2126 8708
Fax: + 55 81 2126 7988
E-mail: cariborras@starpower.net

Dr F.A Iglicki, CNEA
Tel: + 54 11 6779 8218
Fax: + 54 11 6779 8554
E-mail: iglicki@cae.cnee.gov.ar

Dr Franz Josef Maringer, BEV
Tel: + 43 1 21 110 6372
Fax: + 43 1 21 110 6000
E-mail: franz-josef.maringer@bev.gv.at

Dr Chang Kyu Kim, IAEA
Tel: + 43 1 2600 28269
Fax: + 43 1 2600 28222
E-mail: c.k.kim@iaea.org

Dr Patrick Saull, NRC-INMS
Tel: + 613 993 2715 ext 240
Fax: + 613 952 9865
E-mail: Patrick.Saull@nrc-cnrc.gc.ca

Invited by the Chairman:**Prof. André Allisy, c/o BIPM**

Tel: + 33 1 45 07 70 70

Fax: + 33 1 45 34 20 21

E-mail: allisy-roberts@bipm.org

Prof. Giorgio Moscati, Sao Paulo-SP

Tel: + 55 11 3167 0597

Fax: + 55 11 3167 7629

E-mail: moscati@uol.com.br or moscati@inmetro.gov.br

Dr Heinrich Schrader, PTB

Tel: + 00 49 531 509 553

Fax: + 00 49 531 592 6305

E-mail: heinrich.schrader@t-online.de or heinrich.schrader@ptb.de

Dr David Smith, retired NPL

Tel: + 44 1276 506 264

E-mail: smithdavid@ntlworld.com

CCRI Section II Working Group on High-efficiency detection systemsCoordinator: **Prof. Dr Gerhard Winkler, IIK**

Tel: + 43 1 4277 51754

Fax: + 43 1 4277 51752

E-mail: winkler@ap.univie.ac.at

CCRI Section II Working Group on Extension of the SIR to pure β -emittersCoordinator: **Dr José Maria Los Arcos, CIEMAT**

Tel: + 34 91 346 6288

Fax: + 34 91 346 6442

E-mail: jm.losarcos@ciemat.es

CCRI Section II Working Group on Realization of the BecquerelCoordinator: **Dr Uwe Wätjen, IRMM**

Tel: + 32 14 571 882

Fax: + 32 14 584 273

E-mail: uwe.waetjen@cec.eu.int

CCRI Section II Working Group on Key ComparisonsCoordinator: **Dr Lisa R. Karam, NIST**

Tel: + 1 301 975 5561

Fax: + 1 301 869 7682

E-mail: lisa.karam@nist.gov

CCRI Section II Working Group on the SIR Transfer Instrument

Coordinator: **Dr Carine Michotte**, BIPM
Tel: + 33 1 45 07 70 85
Fax: + 33 1 45 34 20 21
E-mail: cmichotte @bipm.org

CCRI Section II Working Group on Uncertainties

Coordinator: **Dr Michael Unterweger**, NIST
Tel: + 1 301 975 5536
Fax: + 1 301 926 7416
E-mail: michael.unterweger@nist.gov

Section III (Neutron measurements)

Chairman: **Dr David Thomas**, NPL
 Tel: + 44 208 943 6853
 Fax: + 44 208 943 7037
 E-mail: david.thomas@npl.co.uk

Members:

Commissariat à l'énergie atomique/Laboratoire National Henri Becquerel [LNE-LNHB], Gif sur Yvette
 Czech Metrology Institute [CMI], Brno
 D.I. Mendeleev Institute for Metrology, Rostekhnregulirovaniye of Russia [VNIIM], St Petersburg
 Institute for Reference Materials and Measurements [IRMM], Geel
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Laboratory for Metrology of Ionising Radiation/Institute of Radiation Protection and Dosimetry
 CNEN [LNMRI/IRD], Rio de Janeiro
 National Metrology Institute of Japan, AIST [NMIJ/AIST], Tsukuba
 National Physical Laboratory [NPL], Teddington
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 The Director of the International Bureau of Weights and Measures [BIPM]

Observers:

Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas [CIEMAT], Madrid
 Chinese Institute of Atomic Energy [CIAE], Beijing
 International Atomic Energy Agency [IAEA]
 International Commission on Radiation Units and Measurements [ICRU]

Attendees at the last meeting of Section III (April 2009)

Chairman: **Dr David Thomas**, NPL

Delegates and experts of member laboratories:

Dr Philippe Cassette, LNE-LNHB
 Tel: +33 1 69 08 48 68
 Fax: +33 1 69 08 26 19
 E-mail: philippe.cassette@cea.fr

Dr Vincent Gressier, LNE-IRSN
 Tel: + 33 4 42 25 75 02
 Fax: + 33 4 42 19 91 44
 E-mail: vincent.gressier@irsn.fr

Dr M. Scott Dewey, NIST
 Tel: + 1 301 975 4843
 Fax: + 1 301 926 1604
 E-mail: maynard.dewey@nist.gov

Dr Hideki Harano, NMIJ/AIST
 Tel: + 81 298 61 5382
 Fax: + 81 298 61 5673
 E-mail: h-harano@aist.go.jp

Dr Miloslav Kralik, CMI

Tel: + 420 266 020 299
 Fax: + 420 266 020 466
 E-mail: mkralik@cmi.cz

Dr Tetsuro Matsumoto, NMIJ/AIST

Tel: + 81 29 861 5670
 Fax: + 81 29 861 5673
 E-mail: t-matsumoto@aist.go.jp

Mr Nikolay N. Moiseev, VNIIM

Tel: + 7 812 323 9614
 Fax: + 7 812 323 9617
 E-mail: n.n.moiseev@vniim.ru

Dr Ralf Nolte, PTB

Tel: + 49 531 592 6420
 Fax: + 49 531 592 6405
 E-mail: ralf.nolte@ptb.de

Dr Stephan Oberstedt, IRMM

Tel: + 00 32 14 571 361
 Fax: + 00 32 14 571 376
 E-mail: stephan.oberstedt@ec.europa.eu

Dr Hyeonseo Park, KRISS

Tel: + 82 42 868 5703
 Fax: + 82 42 868 5671
 E-mail: hyeonseo@kriss.re.kr

Dr Walsan Wagner Pereira, LNMRI/IRD

Tel: + 55 21 2173 2870
 Fax: + 55 21 2442 1605
 E-mail: walsan@ird.gov.br

Mr Neil Roberts, NPL

Tel: + 44 20 8943 6869
 Fax: + 44 20 8943 7082
 E-mail: neil.roberts@npl.co.uk

Dr Stefan Röttger, PTB

Tel : + 49 531 592 6493
 Fax : + 49 531 592 6405
 E-mail : stefan.rettger@ptb.de

Observers:**Dr Mark Kellett, IAEA**

Tel: + 43 1 2600 21708
 Fax: + 43 1 26007
 E-mail: m.a.kellett@iaea.org

Dr José Maria Los Arcos, CIEMAT

Tel: + 34 91 346 6288
 Fax: + 34 91 346 6442
 E-mail: jm.losarcos@ciemat.es

Invited by the Chairman:**Prof. André Allisy, c/o BIPM**

Tel: + 33 1 45 07 70 70
 Fax: + 33 1 45 34 20 21
 E-mail: allisy-roberts@bipm.org

Dr David Gilliam, NIST

Tel: + 1 301 975 6206
 Fax: + 1 301 869 7682
 E-mail: david.gilliam@nist.gov

Dr Gianfranco Gualdrini, ENEA-IRP

Radiation Protection Institute
 16 Via dei Colli
 I-40136 Bologna (BO) ITALY
 Tel: +39 0516098350
 Fax: +39 0516098348
 E-mail: guald@bologna.enea.it

CCRI Section III Working Group on Key Comparisons

Coordinator: **Dr David Thomas**, NPL
Tel: + 44 208 943 6853
Fax: + 44 208 943 7037
E-mail: david.thomas@npl.co.uk

Consultative Committee for Units (CCU)**Created in 1964**

*Present activities concern matters related to the development of the International System of Units (SI),
preparation of successive editions of the SI brochure
and advice to the CIPM on matters concerning units of measurement.*

President: **Prof. Ian M. Mills**
University of Reading - Department of Chemistry
Whiteknights
Reading, RG6 6AD
United Kingdom
Tel: + 44 118 378 8456
Fax: + 44 118 378 6331
E-mail : i.m.mills@reading.ac.uk or millsat57@onetel.net.uk

Executive Secretary: **Dr Claudine Thomas, BIPM**
Tel: + 33 1 45 07 70 73
Fax: + 33 1 45 34 20 21
E-mail: cthomas@bipm.org

Members:

Centro Español de Metrología [CEM], Madrid
Commission internationale de l'éclairage [CIE]
Committee on Data for Science and Technology, [CODATA Task Group on Fundamental Constants]
International Astronomical Union [IAU]
International Commission on Radiation Units and Measurements [ICRU]
International Electrotechnical Commission [IEC]: Technical Committee 25
International Federation of Clinical Chemistry and Laboratory Medicine [IFCC]
International Organization for Standardization [ISO]: Technical Committee 12
International Organization of Legal Metrology [OIML]
International Union of Pure and Applied Chemistry [IUPAC]: Commission STU
International Union of Pure and Applied Physics [IUPAP]: Commission SUN-AMCO
National Institute of Metrology [NIM], Beijing
National Institute of Standards and Technology [NIST], Gaithersburg
National Metrology Institute of Japan, AIST [NMIJ/AIST], Tsukuba
National Physical Laboratory [NPL], Teddington
Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
Rostekhregulirovaniye of Russia [Rostekhregulirovaniye], Moscow
Dr Terry Quinn CBE FRS, Sèvres
Prof. Marc Himbert [LNE], Paris
The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Attendees to the last meeting (May 2009)

President: Prof. Ian M. Mills

Delegates and experts of member laboratories:

Dr Jean Bastie, CIE

Tel: + 33 1 40 27 20 25
Fax: + 33 1 58 80 89 00
E-mail: bastie@cnam.fr

Prof. Carlo Angelo Borghi, IEC/TC 25

Tel: + 39 051 209 3566
Fax: + 39 051 209 3588
E-mail: ca.borghi@mail.ing.unibo.it

Dr Nicole Capitaine, IAU

Tel: + 33 1 40 51 22 31
Fax: + 33 1 40 51 22 91
E-mail: nicole.capitaine@obspm.fr

Dr René Dybkaer, IFCC

Tel: + 45 38 16 38 70 or 71
Fax: + 45 38 16 38 79
E-mail: rene.dybkaer@frh.regionh.dk

Dr Jeff Flowers, NPL

Tel: + 44 20 8943 6671
Fax: + 44 20 8614 0417
E-mail: jeff.flowers@npl.co.uk

Dr Kenichi Fujii, NMIJ/AIST

Tel: + 81 298 61 4316
Fax: + 81 298 50 1464
E-mail: fujii.kenichi@aist.go.jp

Dr Ann Fylkner, ISO/TC12

Tel: + 41 22 749 0111
Fax: + 41 22 733 3430/22 749 7349
E-mail: fylkner@kth.se

Dr Paul Gérôme, ISO/TC 12

Tel: + 41 79 203 21 28
Fax: + 41 79 203 21 28
E-mail: 113322.1543@compuserve.com

Dr J.T Janssen, NPL

Tel : + 44 208 943 7014
Fax : + 44 208 943 6086
E-mail : jt.janssen@npl.co.uk

Dr Savely Karshenboim, VNIIM

Tel: +7 812 323 9675
Fax: +7 812 113 0114
E-mail: sgk@vniim.ru ; sek@mpg.de

Dr Arnold Leitner, OIML

Tel: + 43 1 21 110 6322
Fax: + 43 1 21 110 60005
E-mail: a.leitner@arnold.leitner@bev.gv.at

Dr Zuliang Lu, NIM

Tel: + 86 10 8425 1573
Fax: + 86 10 6421 8629
E-mail: luzl@nim.ac.cn

Dr Hans-Georg Menzel, ICRU

Tel: + 41 22 776 1723
E-mail: Hans.menzel@cern.ch

Dr Peter Mohr, NIST and IUPAP

Tel: + 1 301 975 3217
Fax: + 1 301 975 4578
E-mail: mohr@nist.gov

Dr David B. Newell, NIST and CODATA

Tel: + 1 301 975 4228
Fax: + 1 301 975 4091
E-mail: david.newell@nist.gov

Prof. Jan Obdržálek, IEC/TC 25

Tel: + 41 22 919 02 11
Fax: + 41 22 919 03 00
E-mail: janobdr@gmail.com

Mr Emilio Prieto, CEM

Tel: + 34 91 807 4716
Fax: + 34 91 807 4807
E-mail: eprieto@cem.mityc.es

Dr Jörn Stenger, PTB

Tel: + 49 531 592 1009
Fax: + 49 531 592 1005
E-mail: joern.stenger@ptb.de

Dr Ambler Thompson, NIST

Tel: + 301 975 2333

Fax: + 301 975 8091

E-mail: ambler@nist.gov

Prof. Anders J Thor, ISO/TC 12

Tel: + 46 8 555 521 59

Fax: + 46 8 555 520 01

E-mail: anders.j.thor@sis.se

Personal Members**Dr Terry Quinn CBE FRS**

E-mail: terry.quinn@physics.org

Prof. Marc Himbert, LNE

Tel: + 33 1 40 27 24 19

Fax: + 33 1 58 80 89 00

E-mail: himbert@cnam.fr

Invited by the President:**Dr Elisa Felicitas Arias, BIPM**

Tel: + 33 1 45 07 70 76

Fax: + 33 1 45 07 70 59

E-mail: farias@bipm.org

Prof. Michael Kühne, Deputy Director of the BIPM

Tel: + 33 1 45 07 62 90

Fax: + 33 1 45 34 20 21

E-mail: mkuehne@bipm.org

Prof. Christian J. Bordé, Académie des Sciences, CNRS

Tel: + 33 6 0822 1484

E-mail: chbo@ccr.jussieu.fr or

christian.borde@obspm.fr

Dr Martin J.T. Milton, NPL

Tel: + 44 208 943 6826

Fax: + 44 208 943 6755

E-mail: martin.milton@npl.co.uk

Dr Richard S. Davis, BIPM

Tel: + 33 1 45 07 70 11

Fax: + 33 45 34 20 21

E-mail: rdavis@bipm.org

Mr Alain Picard, BIM

Tel: + 33 1 45 07 70 28

Fax: + 33 1 45 34 20 21

E-mail: apicard@bipm.org

Mr Luc Erard, CIPM, LNE

Tel: + 33 1 40 43 40 52

Fax: + 33 1 40 43 37 37

E-mail: luc.erard@lne.fr

Dr Philippe Richard, METAS

Tel: + 41 31 323 34 15

Fax: + 41 31 323 3573

E-mail: philippe.richard@metas.ch

Dr Joachim Fischer, PTB

Tel: + 49 30 34 81 7473

Fax: + 49 30 34 81 7508

E-mail: joachim.fischer@ptb.de

Dr Fritz Riehle, PTB

Tel : + 49 531 592 4010

Fax : + 49 531 592 4015

E-mail : fritz.riehle@ptb.de

Prof. Patrick Gill, NPL

Tel: + 44 20 8943 6986

Fax: + 44 20 8943 7153

E-mail: patrick.gill@npl.co.uk

Dr Michael Stock, BIPM

Tel: + 33 1 45 07 70 24

Fax: +33 1 45 07 62 62

E-mail: mstock@bipm.org

Prof. Jean Kovalevsky, Honorary Member of the CIPM

Tel: + 33 4 93 70 60 29

Fax: + 33 4 93 40 53 33

E-mail: kovalevsky@obs-azur.fr

Dr Barry N. Taylor, NIST

Tel: + 1 301 975 4220

Fax: + 1 301 990 1350

E-mail: barry.taylor@nist.gov

Dr Robert Wielgosz, BIPM

Tel: + 33 1 45 07 62 51

Fax: + 33 1 45 34 20 21

E-mail: rwielgosz@bipm.org**Dr Thomas J. Witt, BIPM**

Tel: + 33 1 45 07 70 60

Fax: + 33 1 45 34 20 21

E-mail: tjwitt@bipm.org**Dr Barry Wood, NRC-INMS**

Tel: + 1 613 990 9225

Fax: + 1 613 952 1394

E-mail: Barry.wood@nrc-cnrc.gc.ca**Also present:****Dr Estefania De Mirandés, BIPM**

Tel : +33 1 45 07 70 09

Fax : +33 1 45 34 20 21

E-mail : stefania.de.mirandes@bipm.org**Mrs Danièle Le Coz, BIPM**

Tel : +33 1 45 07 70 06

Fax : +33 1 45 34 20 21

E-mail : dlecoz@bipm.org**Dr Janet R. Miles, BIPM**

Tel : +33 1 45 07 70 08

Fax : +33 1 45 34 20 21

E-mail : jmiles@bipm.org**Dr Luis Mussio, BIPM**

Tel : +33 1 45 07 62 57

Fax : +33 1 45 34 20 21

E-mail : luis.mussio@bipm.org**Excused:****Dr Michael Gläser, PTB**

Tel : + 49 531 592 1200

Fax: + 49 531 592 691206

E-mail: michael.glaeser@ptb.de**Dr Zhonghua Zhang, NIM**

Tel: + 86 10 6429 7138

Fax: + 86 10 6422 0525

E-mail: zzh@nim.ac.cn

Consultative Committee for Mass and Related Quantities (CCM)**Created in 1980**

Present activities concern matters related to the comparisons of mass standards with the international prototype of the kilogram, considerations affecting the definition of the unit of mass, also density, pressure and force standards and advice to the CIPM on these matters.

President: Dr Mitsuru Tanaka
 Director-General
 National Metrology Institute of Japan, AIST
 Tsukuba Central 3
 Tsukuba 305-8563
 Japan
 Tel: + 81 298 61 4111
 Fax: + 81 298 61 4007
 E-mail: mitsuru.tanaka@aist.go.jp

Executive Secretary: Dr Richard S. Davis, BIPM
 Tel: + 33 1 45 07 70 11
 Fax: + 33 1 45 34 20 21
 E-mail: rdavis@bipm.org

Members:

Central Office of Measures/Główny Urząd Miar [GUM], Warsaw
 Centro Español de Metrología [CEM], Madrid
 Centro Nacional de Metrología [CENAM], Querétaro
 D.I. Mendeleev Institute for Metrology, Rostekhnregulirovaniye of Russia [VNIIM], St Petersburg
 Istituto Nazionale di Ricerca Metrologica [I.N.R.I.M.], Torino
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 Laboratoire National de Métrologie et d'Essais [LNE], Paris
 Measurement Standards Laboratory of New Zealand [MSL], Lower Hutt
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Measurement Institute, Australia [NMIA], Lindfield
 National Metrology Institute of Japan, AIST [NMIJ/AIST], Tsukuba
 National Metrology Institute of South Africa [NMISA], Pretoria
 National Physical Laboratory [NPL], Teddington
 National Physical Laboratory of India [NPLI], New-Delhi
 National Research Council of Canada [NRC-INMS], Ottawa
 Nederlands Meetinstituut/Van Swinden Laboratorium [NMI VSL], Delft
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 Slovak Institute of Metrology/Slovenský Metrologický Ústav [SMU], Bratislava
 Federal Office of Metrology [METAS], Bern-Wabern
 Technical Research Institute of Sweden [SP], Borås
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Agency for Science, Technology and Research [A*STAR], Singapore
 Bundesamt für Eich-und Vermessungswesen [BEV] Vienna
 National Metrology Institute of Turkey/TÜBİTAK Ulusal Metroloji Enstitüsü [UME], Gebze-Kocaeli

Attendees to the last meeting (April 2008)**President: Dr Mitsuru Tanaka****Delegates and experts of member laboratories:**

Dr Roberto Arias, CENAM
 Tel: + 52 442 211 0500 ext. 3765
 Fax: + 52 442 211 0568
 E-mail: rarias@cenam.mx

Dr Henri Baumann, METAS
 Tel: + 41 31 323 32 43
 Fax: + 41 31 323 32 10
 E-mail: henri.baumann@metas.ch

M. in. Sc Luis Omar Becerra, CENAM
 Tel: + 52 442 211 0500 to 04
 Fax: + 52 442 211 0568
 E-mail: lbecerra@cenam.mx

Dr Walter Bich, I.N.R.I.M
 Tel: + 39 011 3977 445
 Fax: + 39 011 3977 437
 E-mail: w.bich@inrim.it

Dr Stuart Davidson, NPL
 Tel: + 44 208 943 6224
 Fax: + 44 208 943 6132
 E-mail: stuart.davidson@npl.co.uk

Dr Natalia G. Domostroeva, VNIIM
 Tel: + 7 812 323 9605
 Fax: + 7 812 323 9671
 E-mail: n.g.domostroeva@vniim.ru or
 hal@onti.vniim.spb.su

Ing. Peter Farár, SMU
 Tel: + 421 2 602 94 675
 Fax: + 421 2 602 94 382
 E-mail: farar@smu.gov.sk

Dr Kenichi Fujii, NMIJ/AIST
 Tel: + 81 298 61 4316
 Fax: + 81 298 50 1464
 E-mail: fujii.kenichi@aist.go.jp

Dr Alessandro Germak, I.N.R.I.M
 Tel: + 39 011 3977 367
 Fax: + 39 011 3977 426
 E-mail: a.germak@inrim.it

Dr Michael Gläser, PTB
 Tel: + 49 531 592 1200
 Fax: + 49 531 592 1205
 E-mail: michael.glaeser@ptb.de

Dr Zeina J. Jabbour, NIST
 Tel: + 1 301 975 4468
 Fax: + 1 301 417 0514
 E-mail: zeina.jabbour@nist.gov

Dr Claude Jacques, NRC-INMS
 Tel: + 1 613 993 9330
 Fax: + 1 613 952 1394
 E-mail: claude.jacques@nrc-cnrc.gc.ca

Dr Yu A. Kiselev, VNIIM
 Tel: +7 812 323 9629
 Fax: +7 812 113 0114
 E-mail: y.a.kiselev@vniim.ru

Mr Jean-Claude Legras, LNE
 Tel: + 33 1 40 43 38 08
 Fax: + 33 1 40 43 37 37
 E-mail: j.c.legras@orange.fr

Mrs Ewa Maczewska, GUM
 Tel: + 48 22 581 95 47
 Fax: + 48 22 581 93 80
 E-mail: mass.force@gum.gov.pl

Dr John Man, NMIA
 Tel: + 61 2 8467 3513
 Fax: + 61 2 8467 3610
 E-mail: john.man@measurement.gov.au

Mrs Maria Nieves Medina, CEM
 Tel: + 34 91 807 47 89
 Fax: +34 91 807 48 07
 E-mail: mnmedina@cem.mityc.es

Dr Paul André Meury, LNE
 Tel: + 33 1 40 43 38 86
 Fax: + 33 1 40 43 37 37
 E-mail: paul-andre.meury@lne.fr

Dr Akira Ooiwa, NMIJ/AIST
 Tel: + 81 29 861 4024
 Fax: + 81 29 861 4020
 E-mail: akira-ooiwa@aist.go.jp

Dr Patrick Pinot, LNE
 Tel: + 33 1 58 80 85 63
 Fax: + 33 1 58 80 89 00
 E-mail: patrick.pinot@cnam.fr

Dr Philippe Richard, METAS
 Tel: + 41 31 323 34 15
 Fax: + 41 31 323 3573
 E-mail: philippe.richard@metas.ch

Dr José Angel Robles Carbonell, CEM
 Tel: + 34 91 807 47 04
 Fax: + 34 91 807 48 07
 E-mail: jarobles@cem.mityc.es

Dr Roman Schwartz, PTB
 Tel: + 49 531 592 1010
 Fax: + 49 531 592 6910
 E-mail: roman.schwartz@ptb.de

Dr Ian Severn, NPL
 Tel: + 44 208 943 6862
 Fax: + 44 208 943 6132
 E-mail: ian.severn@npl.co.uk

Dr Robert Spurný, SMU
 Tel: + 421 2 6029 4350
 Fax: + 421 2 6029 4382
 E-mail: spurny@smu.gov.sk

Dr Chris M. Sutton, MSL
 Tel: + 644 931 3499
 Fax: + 644 931 3117
 E-mail: c.sutton@irl.cri.nz

Dr Masaki Takamoto, NIMJ/AIST
 Tel: + 81 298 61 4228
 Fax: + 81 298 61 4242
 E-mail: m-takamoto@aist.go.jp

Mrs Inge van Andel, NMi VSL
 Tel: + 31 15 269 1754
 Fax: + 31 15 2612 971
 E-mail: ivandel@nmi.nl

Mr Benjamin van der Merwe
 Tel: +27 12 841 3455
 Fax: + 27 12 841 4458
 E-mail: bvdmerwe@nmisa.org

Prof. Andrew Wallard, BIPM Director
 Tel: + 33 1 45 07 70 00
 Fax: + 33 1 45 34 86 70
 E-mail: awallard@bipm.org

Dr Sam Yong Woo, KRISS
 Tel: + 82 42 868 5118
 Fax: + 82 42 868 5679
 E-mail: sywoo@kriss.re.kr

Mr Yue Zhang, NIM
 Tel: + 86 10 6421 3040
 Fax: + 86 10 6421 8628
 E-mail: zhangy@nim.ac.cn

Observers:

Dr Ashis Kumar Bandyopadhyay, NPLI
 Tel: + 91 11 2574 6270
 Fax: + 91 11 2574 6270
 E-mail: akband@mail.nplindia.ernet.in

Dr Cetik Dogan, UME
 Tel: + 90 262 679 5999 ext. 5653
 Fax: + 90 262 679 5001
 E-mail: cetin.dogan@ume.tubitak.gov.tr

Invited by the President:**Dr Harro Bauer, PTB**

Tel: + 49 531 592 3300

Fax: + 49 531 592 3305

E-mail: harro.bauer@ptb.de

Dr Peter Becker, PTB

Tel: + 49 531 592 4300

Fax: + 49 531 592 4305

E-mail: peter.becker@ptb.de

Mr Christian Buchner, BEV

+ 43 1 21 110 6361

+ 43 1 21 110 6000

christian.buchner@bev.gv.at

Mr Hock Ann Chua, A*STAR

Tel: + 65 6279 1926

Fax: + 65 6279 1995

E-mail: chua_hock_ann@nmc.a-star.edu.sg

Dr Karl Jousten, PTB

Tel: + 49 30 3481 7262

Fax: + 49 30 3481 7490

E-mail: karl.jousten@ptb.de

Also present:**TJ Quinn**, Director Emeritus of the BIPM**Ms Pauline Barat**, BIPM

Tel: + 33 1 45 07 62 54

Fax: + 33 1 45 34 20 21

E-mail: pbarat@bipm.org

Dr Richard S. Davis, BIPM

Executive Secretary of the CCM

Tel: + 33 1 45 07 70 11

Fax: + 33 1 45 34 20 21

E-mail: rdavis@bipm.org

Dr Hao Fang, BIPM

Tel: + 33 1 45 07 62 56

Fax: + 33 1 45 34 20 21

E-mail: fang@bipm.org

Dr Rolf Kumme, PTB

Tel: + 49 531 592 1120

Fax: + 49 531 592 1205

E-mail: rolf.kumme@ptb.de

Dr Lars Nielsen, DFM

Tel: +45 4593 1144

Fax: +45 4593 1137

E-mail: ln@dfm.dtu.dk

Dr Claudia Santo, LATU

Fax: + 598 2 600 8588

E-mail: ln@dfm.dtu.dk

Mr David Tonui, KEBS

Tel: + 254 020 6902 8000

Fax: + 254 020 609 660

E-mail: tonuida@kebs.org

Mrs Cécile Goyon-Taillade, BIPM

Tel: + 33 1 45 07 62 55

Fax: + 33 1 45 34 20 21

E-mail: cgoyon@bipm.org

Mr Adrien Kiss, BIPM

Tel: + 33 1 45 07 70 37

Fax: + 33 1 45 34 20 21

E-mail: akiss@bipm.org

Mr Alain Picard, BIPM

Tel: + 33 1 45 07 70 28

Fax: + 33 1 45 34 20 21

E-mail: apicard@bipm.org

Dr Claudine Thomas, BIPM

KCDB Coordinator

Tel: + 33 1 45 07 70 73

Fax: + 33 1 45 34 20 21

E-mail: cthomas@bipm.org

Dr Leonid Vitushkin, BIPM

Chair of Working Group on Gravimetry

Tel: + 33 1 45 07 70 81 or 62 68

Fax: + 33 1 45 34 20 21

E-mail: lvitush@bipm.org

Excused :

Dr Anil K. Agarwal, NRC-INMS
Tel: + 613 991 0615
Fax: + 613 952 1394
E-mail: anil.agarwal@nrc-cnrc.gc.ca

Dr Ilknur Kocas, UME
Tel: + 90 262 679 5000 ext 5200
Fax: + 90 262 679 5001
E-mail: ilknur.kocas@ume.tubitak.gov.tr

Dr Vladimir N. Gorobey, VNIIM
Tel: +7 812 323 9630
Fax: +7 812 113 0114
E-mail: V.N.gorobey@vniim.ru

Mrs Susanne Hurtig, SP
Tel: + 46 33 16 50 00
Fax: + 46 33 13 55 02
E-mail:

CCM Working Group on Density**Chairman:**

Dr Kenichi Fujii, NMIJ/AIST
Tel: + 81 298 61 4316
Fax: + 81 298 50 1464
E-mail: fujii.kenichi@aist.go.jp

Members :

BEV
BIPM
CSIRO
I.N.R.I.M
KRISS
METAS
NIST
NMIJ/AIST
NPL
NRC-INMS
PTB
SMU
SP
VNIIM

CCM Working Group on Mass Standards**Chairman:****Dr Philippe Richard, METAS**

Tel: + 41 31 32 33 415

Fax: + 41 31 32 33 210

E-mail: philippe.richard@metas.ch

Members:

BEV

BIPM

CEM

CENAM

GUM

I.NR.I.M.

KRISS

LNE

LNE-INM/CNAM

METAS

NIM

NIST

NMIA

NMIJ

NMISA

NMI-VSL

NPL

NPLI

NRC-INMS

PTB

SMU

VNIIM

CCM Working Group on High Pressures**Chairman:****Dr Jorge Torres-Guzman, CENAM**

Tel: + 52 442 211 05 72

Fax: + 52 442 211 0578

E-mail: jtorres@cenam.mx

Members:

CEM

CENAM

INMETRO

I.N.R.I.M.

KRISS

LNE

MSL

NIM

NIST

NMIA

Nmi-VSL

NMIJ/AIST

NPL

NPLI

NRC-INMS

PTB

SMU

UME

VNIIFTRI

VNIIM

CCM Working Group on Low Pressures

Chairman:

Dr Karl Jousten, PTB

Tel: + 49 30 3481 262

Fax: + 49 30 3481 490

E-mail: karl.jousten@ptb.de

Members:

A*STAR

CENAM

CEM

CMI

I.N.R.I.M.

KRISS

LNE

METAS

MSL

NIM

NIST

NMIA

NMIJ/AIST

NMi-VSL

NPLI

PTB

SMU

UME

VNIIM

CCM Working Group on Force

Interim Chairman:

Dr Rolf Kumme, PTB

Tel: +49 531 592 1120

Fax: +49 531 592 1205

E-mail: rolf.kumme@ptb.de

Members:

BEV

CENAM

CMI

FORCE Technology

GUM

INMETRO

I.N.R.I.M.

IPQ

KIM-LIPI

KRISS

LNE

METAS

Metrology Division

MIKES

MKEH

NIM

NIS

NIST

NMIA

NMIJ/AIST

NMISA

NMi-VSL

NPL

NPLI

PTB

SP

UME

VNIIM

CCM Working Group on the Avogadro Constant

Chairman:

Dr Peter Becker, PTB
 Tel: + 49 531 592 6130
 Fax: + 49 531 592 6015
 E-mail: peter.becker@ptb.de

CCM Working Group on Hardness

Chairman:

Dr Alessandro Germak, I.N.R.I.M
 Tel: + 39 011 3977 367
 Fax: + 39 011 3977 426
 E-mail: a.germak@imgc.cnr.it

Members:

CENAM	NMIJ/AIST
GUM	NMi-VSL
INMETRO	NPL
I.N.R.I.M.	PTB
KRISS	SMU
LNE	SP
METAS	UME
NIM	VNIFTRI
NIST	VNIIM

CCM Working Group on Fluid Flow

Chairman:

Dr Masaki Takamoto, NMIJ/AIST
 Tel: + 81 29 861 4228
 Fax: + 81 29 861 4242
 E-mail: m-takamoto@aist.go.jp

Members:

A*STAR	NIM
BEV	NIST
CENAM	NMIA
CMI	NMIJ/AIST
GUM	NMISA
INMETRO	NMI-VSL
I.N.R.I.M.	NCR
KRISS	PTB
LNE-LADG	SMU
METAS	SP
NEL	UME

CCM Working Group on Gravimetry

Chairman:

Dr Leonid Vitushkin, BIPM

Tel: + 33 1 45 07 70 81

Fax: + 33 1 45 34 20 21

E-mail: lvitushk@bipm.org

Members:

BIPM

METAS

LNE-SYRTE

I.N.R.I.M.

NIM

NMIJ

NPL

NRC-INMS

UME

VNIIM

Invited:

James Faller, University of Colorado (USA)

Olivier Francis, ECGS (Luxembourg)

Jan Krynski, IGC (Poland)

Jaakko Mäkinen, FGI (Finland)

Michel Van Camp, ORB (Belgium)

Herbert Wilmes, BKG (Germany)

CCM Working Group on Viscosity

Chairman:

Dr Henning Wolf, PTB

Tel: + 49 531 592 3320

Fax: + 49 531 592 3320

E-mail: henning.wolf@ptb.de

Members:

A*STAR

BEV

Cannon

CENAM

GUM

I.N.R.I.M.

INMETRO

IPQ

KRISS

LNE

NIM

NIS

NIST

NMi-VSL

NMIJ/AIST

NPLI

PTB

SMU

UME

VNIIM

CCM Working Group on CMCs

Interim Chairman:

Dr Chris Sutton, MSL
Tel: + 64 4 569 0499
Fax: + 64 4 569 0117
E-mail: c.sutton@irl.crz.nz

Members:

Chairs of CCM Working Groups
Chairs of RMO Technical Committees for Mass and Fluid Flow

Invited:

Secretary of the JCRB
Coordinator of the KCDB

CCM Working Group on the SI kg

Chairman:

Dr Philippe Richard, METAS
Tel: + 41 31 323 34 15
Fax: + 41 31 323 3573
E-mail: philippe.richard@metas.ch

BIPM
DFM
I.N.R.I.M
METAS
NIST

NMIJ/AIST
PTB

Consultative Committee for Amount of Substance: metrology in chemistry (CCQM)**Created in 1993**

Present activities concern primary methods for measuring amount of substance and international comparisons, establishment of international equivalence between national laboratories and advice to the CIPM on matters concerned with metrology in chemistry.

President: Dr Robert Kaarls
 Klaverwydenstraat 13
 2381 VX Zoeterwoude
 The Netherlands
 Tel: + 31 71 580 22 31
 Fax: + 31 71 580 47 77
 E-mail: rkaarls@euronet.nl

Executive Secretary: Dr Robert Wielgosz, BIPM
 Tel: + 33 1 45 07 62 51
 Fax: + 33 1 45 34 20 21
 E-mail: rwielgosz@bipm.org

Members:

Centro Nacional de Metrología [CENAM], Querétaro
 Bundesanstalt für Materialforschung und -prüfung [BAM], Berlin
 D.I. Mendeleev Institute for Metrology, Rostekhregulirovaniye of Russia [VNIIM], St Petersburg
 Danish Fundamental Metrology Ltd. [DFM], Lyngby
 Federal Office of Metrology [METAS], Bern-Wabern
 Institute for Reference Materials and Measurements [IRMM], Geel
 Instituto Nacional de Metrologia, Normalizacao e Qualidade Industrial [INMETRO], Rio de Janeiro
 International Atomic Energy Agency [IAEA]
 International Federation of Clinical Chemistry and Laboratory Medicine [IFCC]
 International Organization for Standardization, Committee on Reference Materials [ISO REMCO]
 International Union of Pure and Applied Chemistry [IUPAC]
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 Laboratoire national de métrologie et d'essais [LNE], Paris
 Laboratory of the Government Chemist [LGC], Teddington
 National Institute of Metrology [NIM], Beijing
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Measurement Institute, Australia [NMIA], Lindfield
 National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, [NMIJ/AIST], Tsukuba
 National Metrology Institute of South Africa [NMISA], Pretoria
 National Physical Laboratory [NPL], Teddington
 National Research Council of Canada, Institute for National Measurement Standards [NRC-INMS], Ottawa
 Physikalisch-Technische Bundesanstalt [PTB]/Federal Institute for Materials Research and Testing /
 Slovak Institute of Metrology/Slovenský Metrologický Ústav [SMU], Bratislava
 State Laboratory [SL], Co. Kildare
 Technical Research Institute of Sweden [SP], Borås
 VSL [VSL], Delft
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Agency for Science, technology and research [A*STAR], Singapore
 Bulgarian Institute of Metrology [BIM], Sofia
 Central Office of Measures/Główny Urząd Miar [GUM], Warsaw
 Centro Español de Metrología [CEM], Madrid
 Co-Operation on International Traceability in Analytical Chemistry [CITAC],
 Hungarian Trade Licensing Office [MKEH], Budapest
 Instituto Nacional de Metrologia, Normalizacao e Qualidade Industrial [INMETRO], Rio de Janeiro
 Instituto Português da Qualidade [IPQ], Caparica
 Istituto Nazionale di Ricerca Metrologica [I.N.R.I.M.], Turin
 National Institute of Metrology [NIMT], Pathumthani
 National Metrology Institute of Turkey/Ulusal Metroloji Enstitüsü [UME], Gebze-Kocaeli
 National Physical Laboratory of India [NPLI], New Delhi
 The National Physical Laboratory of Israel [INPL], Jerusalem

Attendees to the last meeting (April 2009)**President: Dr Robert Kaarls****Delegates and experts of member laboratories:****Dr Hanspeter Andres, METAS**

Tel: + 41 31 323 33 70
 Fax: + 41 31 323 32 10
 E-mail: hanspeter.andres@metas.ch

Dr Richard Brown, NPL

Tel: + 44 208 943 6409
 Fax: + 44 208 614 0423
 E-mail: richard.brown@npl.co.uk

Dr Mirella Buzoianu, INM

Tel: + 40 21 334 55 20
 Fax: + 40 21 334 55 33 or 5345
 E-mail: mirella.buzoianu@inm.ro

Dr Grainne Carroll, SL

Tel: + 353 1 505 7017
 Fax: + 353 1 505 7070
 E-mail: gcarroll@statelab.ie

Ms Joanne Sheot Harn Chan, HAS

Tel: + 65 6213 0722
 Fax: + 65 6213 0749
 E-mail: CHAN Sheot Harn@hsa.gov.sg

Dr Philippe Charlet, LNE

Tel: + 33 1 30 69 21 95
 Fax: + 33 1 30 69 12 34
 E-mail: philippe.charlet@lne.fr

Dr Chainarong Cherdchu, NIMT

Tel: + 66 577 5100 Ext 2342
 Fax: + 66 2 577 5096
 E-mail: ccherdchu@hotmail.com or
 chainarong@nimt.or.th

Dr Koichi Chiba, NMIJ/AIST

Tel: + 81 29 861 4420
 Fax: + 81 29 861 4420
 E-mail: kk-chiba@aist.go.jp

Prof. Maurice Cox, NPL

Tel: + 44 20 8943 6096
 Fax: + 44 20 8614 0548
 E-mail: maurice.cox@npl.co.uk

Prof. Dr Paul de Bièvre, IUPAC/CIAAW

Tel: + 32 14 851 338
 Fax: + 32 14 853 908
 E-mail: paul.de.bievre@skynet.be

Dr Dinesh K Dikshit, CDRI

Tel: + 91 522 262 0713
 Fax: + 91 522 2623 405 OR 262 0713
 E-mail : dk dikshit@cdri.res.in

Dr Tero Eklin, MIKES

Tel: + 358 10 6054 508
 Fax: + 358 10 6054 299
 E-mail: Tero.Eklin@mikes.fi

Fax: + 254 020 696 60
 E-mail: joelkioko@hotmail.com or
 jkioko@kebs.org

Dr Stephen Ellison, LGC
 Tel: + 44 208 943 7325
 Fax: + 44 208 943 2767
 E-mail: s.ellison@lgc.co.uk

Prof. Dr Hendrik Emons, IRMM
 Tel: + 32 14 571 722
 Fax: + 32 14 571 548
 E-mail: hendrik.emons@ec.europa.eu

Mr Luc Erard, LNE
 Tel: + 33 1 40 43 40 52
 Fax: + 33 1 40 43 37 37
 E-mail: luc.erard@lne.fr

Dr Ales Fajgelj, IAEA and IUPAC
 Tel: + 43 1 2600 28233 or 28200
 Fax: + 43 1 2600 282222
 E-mail: a.fajgelj@iaea.org

Dr maria Fernandes-Whaley, NMISA
 Tel: + 27 12 841 2105
 Fax: + 27 86 509 5996
 E-mail: MFWhaley@nmisa.org

Mr Joel N. Gikubu, KEBS
 Tel: + 254 0260 5490
 Fax: + 254 0260 4031

Dr Bernd Güttler, PTB
 Tel: + 49 531 592 3100
 Fax: + 49 531 592 3015
 E-mail: bernd.guettler@ptb.de

Dr Qiao Han, NIM
 Tel: + 86 10 8425 2300
 Fax: + 86 10 6422 9379
 E-mail: hanqiao@nim.ac.cn

Dr Hans D. Jensen, DFM
 Tel: + 45 4525 5874
 Fax: + 45 4593 1137
 E-mail: hdj@dfm.dtu.dk

Dr Kenji Kato, NMIJ/AIST
 Tel: + 81 298 61 6851
 Fax: + 81 298 61 6857
 E-mail: k.kato@aist.gov.jp

Mr Joël M. Kioko, KEBS
 Tel: + 254 020 523 310

Dr Yuri Kustikov, VNIIM
 Tel: + 7 812 315 11 45
 Fax: + 7 812 327 97 76
 E-mail: lkonop@b10.vniim.ru

Dr Tong Kooi Lee, HSA
 Tel: + 65 6213 0731
 Fax: + 65 6213 0749
 E-mail: Lee Tong Kooi@hsa.gov.sg

Ms Hongmei Li, NIM
 Tel: + 86 10 6421 1639
 Fax: + 86 10 6427 1639
 E-mail: lihm@nim.ac.cn

Dr Laurie Locascio, NIST
 Tel: + 301 975 3130
 Fax: + 301 330 3447
 E-mail: laurie.locascio@nist.gov

Dr Liandi Ma, NIM
 Tel: + 86 10 6429 4060
 Fax: + 86 10 6429 4060 or 6422 8404
 E-mail: mald@nim.ac.cn or inorg@nim.ac.cn

Dr Lindsey Mackay, NMIA
 Tel: + 61 2 9449 0125
 Fax: + 61 2 9449 1653
 E-mail: lindsey.mackay@measurement.gov.au

Dr Bertil Magnusson, SP
 Tel: + 46 703 16 52 75
 Fax: + 46 33 12 37 49
 E-mail: bertil.magnusson@sp.se

Dr Michal Máriássy, SMU
 Tel: + 421 2 6029 4522
 Fax: + 421 2 6542 9592
 E-mail: michal.mariassy@smu.gov.sk

Dr Gabriela Massiff, CMC
 Tel: + 56 2 242 8180
 Fax: + 56 2 242 8182
 E-mail: gmassiff@fundacionchile.cl

Dr Willie E. May, NIST CSTL
 Tel: + 1 301 975 8300
 Fax: + 1 301 975 3845
 E-mail: willie.may@nist.gov

Dr Martin J.T. Milton, NPL
Tel: + 44 208 943 6826
Fax: + 44 208 943 6755
E-mail: martin.milton@npl.co.uk

Dr Yoshito Mitani, CENAM
Tel: + 52 442 211 0560
Fax: + 52 442 211 0569
E-mail: ymitani@cenam.mx

Prof. Dr Ulrich Panne, BAM
Tel: + 49 30 81 04 11 00
Fax: + 49 30 81 04 11 07
E-mail: ulrich.panne@bam.de

Ms Helen Parkes, LGC
Tel: + 44 208 943 7676
Fax: + 44 208 943 2767
E-mail: helen.parkes@lgc.co.uk

Dr Melina Pérez-Urquiza, CENAM
Tel: + 52 442 211 0562
Fax: + 52 442 211 0569
E-mail: meperez@cenam.mx

Ms Sara Prins, NMISA
Tel: + 27 12 841 4806
Fax: + 27 12 841 4458
E-mail: sprins@nmisa.org

Dr Christophe Quénel, IRMM
Tel: + 32 14 571 658
Fax: + 32 14 571 863
E-mail: christophe.quenel@ec.europa.eu

Mr Henry K. Rotich, KEBS
Tel: + 254 0260 5490
Fax: + 254 0260 4031

Dr Mike Sargent, LGC
Tel: + 44 208 943 7360
Fax: + 44 208 943 2767
E-mail: ms@lgc.co.uk

Dr V.D. Sattigeri, CFTRI
Tel: + 91 11 821 251 4972
Fax: + 91 821 251 7233
E-mail: csc@cftri.res.in

Dr Detlef Schiel, PTB
Tel: + 49 531 592 3110
Fax: + 49 531 592 3015
E-mail: detlef.schiel@ptb.de

Prof. Dr Lothar Siekmann, PTB
Tel: + 49 228 287 5911
Fax: + 49 228 287 5033
E-mail: lothar.siekmann@ukb.uni-bonn.de

Prof. Dr Hun-Young So, KRISS
Tel: + 82 42 848 5020
Fax: + 82 42 868 5042
E-mail: hys@kriss.re.kr

Prof. Dr Klaus-Dieter Sommer, PTB
Tel: + 49 531 592 3010
Fax: + 49 531 592 3015
E-mail: Klaus-Dieter.Sommer@ptb.de

Dr Ralph Sturgeon, NRC-INMS
Tel: + 1 613 993 6395
Fax: + 1 613 993 2451
E-mail: ralph.sturgeon@nrc-cnrc.gc.ca

Dr Gregory Turk, NIST
Tel: + 1 301 975 4118
Fax: + 1 301 869 0413
E-mail: turk@nist.gov

Dr Staf Valkiers, IRMM
Tel: + 32 14 571 639
Fax: + 32 14 584 863
E-mail: staf.valkiers@ec.europa.eu

Dr Wolfgang Unger, BAM
Tel: + 49 30 8104 1823
Fax: + 49 30 8104 1827
E-mail: wolfgang.unger@bam.de

Prof. Andrew Wallard, Director of the BIPM
Tel: + 33 1 45 07 70 70
Fax: + 33 1 45 34 20 21
E-mail: awallard@bipm.org

Dr Stephen A. Wise, NIST
Tel: + 1 301 975 3112
Fax: + 1 301 926 8671
E-mail: stephen.wise@nist.gov

Dr Sophie Vaslin-Reimann, LNE
Tel: + 33 1 40 43 37 37
Fax: + 33 1 40 43 37 37
E-mail: sophie.vaslin-reimann@lne.fr

Observers:**Prof. Humberto Siqueira Brandi, INMETRO**

Tel: + 55 21 2679 9011/9012

Fax: + 55 21 2679 1420

E-mail: dimci@inmetro.gov.br

Dr Oktay Cankur, UME

Tel: + 90 262 679 5000 Ext. 6501

Fax: + 90 262 679 5001

E-mail: oktay.cankur@ume.tubitak.gov.tr

Mr Hock Ann Chua, A*STAR

Tel: + 65 6279 1926

Fax: + 65 6279 1995

E-mail: chua hock ann@nmc.a-star.edu.sg

Dr Valnei Da Cunha, INMETRO

Tel: + 55 21 2679 9243

Fax: + 55 21 2679 9069

E-mail: vscunha@inmetro.gov.br

Dr Romeu Daroda, INMETRO

Tel: + 55 21 2563 2802

Fax: + 55 21 2679 7909

E-mail: dimci@inmetro.gov.br

Dr Prabhat K. Gupta, NPLI

Tel: + 91 11 4560 8232

Fax: + 91 11 4560 9310

E-mail: prabhat@nplindia.org

Dr Ilya Kuselman, INPL (&CITAC)

Tel: + 92 2 566 1856

Fax: + 972 2 652 0797

E-mail: ilya.kuselman@moital.gov.il

Dr Maria Paola Sassi, I.N.R.I.M

Tel: + 39 011 3977 465

Fax: + 39 011 3977 459

E-mail: m.sassi@inrim.it

Dr Michela Segà, I.N.R.I.M

Tel: + 39 011 3977 448

Fax: + 39 011 3977 437

E-mail: m.sega@inrim.it

Dr Zsófia Nagyné Szilágyi, MKEH

Tel: + 36 1 4585800

Fax: + 36 1 4585937

E-mail : nagynesz@mkeh.hu

Dr Agnieszka Zoń, GUM

Tel: + 48 22 581 94 05

Fax: + 48 22 581 93 95

E-mail: ref.mat@gum.gov.pl

Invited by the President:**Dr Mirella Maria Buzoianu, INM**

Tel: + 40 21 334 55 20

Fax: + 40 21 334 55 33 or 5345

E-mail: mirella.buzoianu@inm.ro

Ms Joanne Sheot Harn Chan, HAS

Tel: + 65 6213 0722

Fax: + 65 6213 0749

E-mail: CHAN_Sheot_Harn@hsa.gov.sg

Dr Chainarong Cherdchu, NIMT

Tel: + 66 2 577 5100, ext. 2342

Fax: + 66 2 577 5096

E-mail:

chainarong@nimt.or.th;ccherdchu@hotmail.com

Dr Samuel Sik-Man Choi, GL

Tel: + 852 2762 3865

Fax: + 852 2714 4083

E-mail: smchoi@govtlab.gov.hk

Mr Paul Chui, HSA

Tel: + 65 6213 0647

Fax: + 65 6213 0749

E-mail: Paul_Chui@hsa.gov.sg

Dr Dinesh K. Dikshit, CDRI

Tel: + 91 522 262 0713

Fax: + 91 522 2623 405 (or 262 0713)

E-mail: dk_dikshit@cdri.res.in

Dr Tero Eklin, MIKES

Tel: + 358 10 6054 508

Fax: + 358 10 6054 299

E-mail: Tero.Eklin@mikes.fi

Mr Joël N. Gikubu, KEBS

Tel: +254 0260 5490

Fax: +254 0260 4031

Dr Elaine Gray, NIBSC

Tel: + 44 1707 641 319

Fax: + 44 1707 641 050

E-mail: egray@nibsc.ac.uk

Mr Joël M. Kioko, KEBS

Tel: + 254 020 523 310

Fax: + 254 020 696 60

E-mail: joelkioko@hotmail.com ; jkioko@kebs.org

Dr Tong Kooi Lee, HSA

Tel: + 65 6213 0731

Fax: + 65 6213 0749

E-mail: Lee_Tong_Kooi@hsa.gov.sg

Dr Gabriela Massiff, Fundación Chile

Tel: + 56 2 242 8180

Fax: + 56 2 242 8182

E-mail: gmassiff@fundacionchile.cl

Mr Henry K. Rotich, KEBS

Tel: +254 0260 5490

Fax: +254 0260 4031

Dr V.D Sattigeri, CFTRI

Tel: + 91 11 821 251 4972

Fax: + 91 821 251 7233

E-mail: csc@cftri.res.in

Prof. Dr Klaus-Dieter Sommer, PTB

Tel: + 49 531 592 3010

Fax: + 49 531 592 3015

E-mail: Klaus-Dieter.Sommer@ptb.de

Dr Pian Totarong, NIMT

Tel: + 66 25 77 5100 ext 4201

Fax: + 66 25 77 2823

E-mail: pian@nimt.or.th

Dr Gregory Turk, NIST

Tel: + 1 301 975 4118

Fax: + 1 301 869 0413

E-mail: turk@nist.gov

Dr Staf Valkiers, IRMM

Tel: + 32 14 571 639

Fax: + 32 14 584 863

E-mail: staf.valkiers@ec.europa.eu

Sent regrets:**Dr Elaine Gray, NIBSC**

Tel: + 44 1707 641 319

Fax: + 44 1707 641 050

E-mail: egray@nibsc.ac.uk

Dr Teresa Fernandez Vicente, CEM

Tel: + 34 91 807 47 51

Fax: +34 91 807 48 07

E-mail: tefernandez@cem.mityc.es

Mr Alan Squirrel, SM, ILAC, NATA

Tel: + 61 2 9736 8374

Fax: + 61 2 9736 8373

E-mail: alan.squirrel@nata.asn.au or
ilac@nata.asn.au**Dr Thomas Steiger, BAM**

Tel: + 49 30 8104 5860

Fax: + 49 30 8104 5577

E-mail: thomas.steiger@bam.de

Dr Philip Taylor, IRMM

Tel: + 32 14 571 605

Fax: + 32 14 571 863

E-mail: philip.taylor@ec.europa.eu

Dr Adriaan van der Veen, VSL, ISO, REMCO

Tel: + 31 15 2 691 733

Fax: + 31 15 2 612 971

E-mail: avdveen@vsl.nl

Also present:**Ms Adeline Daireaux, BIPM**

Tel: + 33 1 45 07 70 89

Fax: + 33 1 45 34 20 21

E-mail: adeline.daireaux@bipm.org

Mr Edgar Flores Jardines, BIPM

Tel: + 33 1 45 07 70 92

Fax: + 33 1 45 34 20 21

E-mail: edgar.flores@bipm.org

Dr Ralf Josephs, BIPM
Tel: + 33 1 45 07 62 83
Fax: + 33 1 45 34 20 21
E-mail: ralf.josephs@bipm.org

Mr Philippe Moussay, BIPM
Tel: + 33 1 45 07 76 07 or 76 09
Fax: + 33 1 45 34 20 21
E-mail: pmoussay@bipm.org

Mr Alain Picard, BIPM
Tel: + 33 1 45 07 70 28
Fax: + 33 1 45 34 20 21
E-mail: apicard@bipm.org

Dr Terry J. Quinn,
Director Emeritus of the BIPM
E-mail: terry.quinn@physics.org

Dr Claudine Thomas, Coordinator of the KCDB
Tel: + 33 1 45 07 70 73
Fax: + 33 1 45 34 20 21
E-mail: cthomas@bipm.org

Dr Joële Viallon, BIPM
Tel: + 33 1 45 07 62 70
Fax: + 33 1 45 34 20 21
E-mail: jviallon@bipm.org

Dr Steven Westwood, BIPM
Tel: + 33 1 45 07 70 57
Fax: + 33 1 45 34 20 21
E-mail: steven.westwood@bipm.org

Dr Robert Wielgosz, Executive Secretary of the
CCQM, BIPM
Tel: + 33 1 45 07 62 51
Fax: + 33 1 45 34 20 21
E-mail: rwielgosz@bipm.org

CCQM Working Group on Key Comparisons and CMC Quality**Chair:****Dr Lindsey Mackay, NMIA**

Tel: + 61 2 9449 0125

Fax: + 61 2 9449 1653

E-mail: lindsey.mackay@measurement.gov.au

CCQM Working Group on Gas Analysis**Chair:****Dr Martin J.T. Milton, NPL**

Tel: + 44 208 943 6826

Fax: + 44 208 943 6755

E-mail: martin.milton@npl.co.uk

CCQM Working Group on Electrochemical Analysis**Chair:****Dr Michal Máriássy, SMU**

Tel: + 421 2 6029 4522

Fax: + 421 2 6542 9592

E-mail: mariassy@smu.gov.sk or michal.mariassy@smu.gov.sk

CCQM Working Group on Inorganic Analysis**Chair:****Dr Mike Sargent, LGC**

Tel: + 44 208 943 7360

Fax: + 44 208 943 2767

E-mail: ms@lgc.co.uk

CCQM Working Group on Organic Analysis**Chair:****Dr Willie E. May, NIST**

Tel: + 1 301 975 3108

Fax: + 1 301 926 8671

E-mail: willie.may@nist.gov

CCQM Working Group on Bioanalysis

Chair:

Dr Helen Parkes, LGC
Tel: + 44 208 943 7676
Fax: + 44 208 943 2767
E-mail: helen.parkes@lgc.co.uk

CCQM Working Group on Surface Analysis

Chair:

Dr Wolfgang Unger, BAM
Tel: + 49 30 8104 1823
Fax: + 49 30 8104 1827
E-mail: wolfgang.unger@bam.de

Consultative Committee for Acoustics, Ultrasound and Vibration (CCAUV)**Created in 1998**

In addition to its formal work in the organization of key comparisons in acoustics (airborne and underwater), in ultrasound and in vibration measurement, the CCAUV acts as the focus for this diverse community, seeking to develop common aims and increased collaboration between national metrology institutes and appropriate designated organizations in Member Countries of the Metre Convention.

President: **Prof. Dr Joaquín Valdés**
 Quality and Metrology Manager
 Instituto Nacional de Tecnología Industrial
 Av. Gral. Paz 5445
 INTI – Parque Tecnológico Miguelete
 1650 San Martín
 Prov. Buenos Aires
 República Argentina
 Tel: + 54 11 4724 6244
 Fax: + 54 11 4724 6244
 E-mail: jovaldes@inti.gov.ar

Executive Secretary: **Dr Penelope Allisy-Roberts, BIPM**
 Tel: + 33 1 45 07 70 90
 Fax: + 33 1 45 34 20 21
 E-mail: allisy-roberts@bipm.org

Members:

Central Office of Measures/Główny Urząd Miar [GUM], Warsaw
 Centro Nacional de Metrología [CENAM], Querétaro
 Conservatoire national des arts et métiers/Institut National de Métrologie [LNE], Paris
 D.I. Mendeleev Institute for Metrology, Rostekhregulirovaniye of Russia [VNIIM], St Petersburg
 Danish Fundamental Metrology Ltd [DFM]/Danish Primary Laboratory for Acoustics [DPLA], Naerum
 Istituto Nazionale di Metrologia [I.N.R.I.M.], Torino
 Korea Research Institute of Standards and Science [KRISS], Daejeon
 National Institute of Metrology [NIM], Beijing
 National Institute of Metrology, Standardization and Industrial Quality [INMETRO], Rio de Janeiro
 National Institute of Standards and Technology [NIST], Gaithersburg
 National Measurement Institute, Australia [NMIA], Lindfield
 National Metrology Institute of Japan, AIST [NMIJ/AIST], Tsukuba
 National Metrology Institute of South Africa [NMISA], Pretoria
 National Physical Laboratory [NPL], Teddington
 National Research Council of Canada [NRC-INMS], Ottawa
 Physikalisch-Technische Bundesanstalt [PTB], Braunschweig
 The Director of the International Bureau of Weights and Measures [BIPM], Sèvres

Observers:

Bulgarian Institute of Metrology [BIM], Sofia
 Bundesamt für Eich- und Vermessungswesen [BEV], Vienna
 Centro Español de Metrología [CEM], Madrid
 Czech Metrology Institute [CMI], Prague
 Institute for Physical-Technical and Radiotechnical Measurements, Rostekhnregulirovaniye of Russia
 [VNIIFTRI], Moscow
 Instituto Português da Qualidade [IPQ], Caparica
 Institu National [INM]
 International Electrotechnical Commission [IEC]
 International Organization for Standardization [ISO]
 National Metrology Institute of Turkey [UME], Gebze-Kocaeli
 National Physical Laboratory of India [NPLI], New Delhi
 VSL [VSL], Delft
 Slovak Institute of Metrology/Slovenský Metrologický Ústav [SMU], Bratislava
 Standards, Productivity and Innovation Board [A*STAR], Singapore
 Swiss Federal Office of Metrology [METAS], Bern-Wabern

Attendees at the last meeting (October 2008)**President: Dr Joaquín Valdés****Delegates and experts of member laboratories:****Dr Philippe Averlant, LNE**

Tel: + 33 1 40 43 38 71

Fax : + 33 1 40 43 37 37

E-mail : philippe.averlant@lne.fr

Mr Richard Barham, NPL

Tel: + 44 208 943 6725

Fax: +44 208 943 6217

E-mail: richard.barham@npl.co.uk

Dr Thomas Bruns, PTB

Tel: + 49 531 592 1220

Fax: + 49 531 592 691220

E-mail: thomas.bruns@ptb.de

Mrs Danuta Dobrowolska, GUM

Tel: + 48 22 581 91 36

Fax: + 48 22 581 93 80

E-mail: d.dobrowolska@gum.gov.pl

Dr Jean-Noël Durocher, LNE

Tel: + 33 1 30 69 14 88

Fax: + 33 1 30 69 12 34

E-mail: jean-noel.durocher@lne.fr

**Dr José Salvador Echeverría-Villagómez,
CENAM**

Tel: + 52 442 211 0550

Fax: + 52 442 211 0558

E-mail: saleche@cenam.mx

Mr Luc Erard, LNE

Tel: + 33 1 40 43 40 52

Fax: + 33 1 40 43 37 37

E-mail: luc.errard@lne.fr

Dr Salvador Barrera-Figueroa, DFM

Tel: + 45 4593 1144

Fax: + 45 4593 1137

E-mail: SBF@dfm.dtu.dk

Mr Erling Frederiksen, DPLA

Tel: + 45 45 800 500

Fax: + 45 45 801 405

E-mail: erlingfred@bksv.com

Dr Claudio Guglielmo, I.N.R.I.M

Tel: + 39 011 391 9626

Fax: + 39 011 346 384

E-mail: guglielm@inrim.it

Dr Tsuneo Kikuchi, NMIJ/AIST
Tel: + 81 298 61 5589
Fax: + 81 298 61 2226
E-mail: tsuneo.kikuchi@aist.go.jp

Dr Christian Koch, PTB
Tel: + 49 531 592 1600
Fax: + 49 531 592 1605
E-mail: christian.koch@ptb.de

Dr Hyu-Sang Kwon, KRISS
Tel: + 82 42 868 5057
Fax: + 82 42 868 5643
E-mail: hyusang@kriss.re.kr

Dr Prem Narang, NMIA
Tel: + 61 2 8467 3544
Fax: + 61 2 8467 3610
E-mail: prem.narang@measurement.gov.au

Dr Victor Nedzelnitsky, NIST
Tel: + 1 301 975 6638
Fax: + 1 301 990 3851
E-mail: victor.nedzelnitsky@nist.gov

Mr Riaan Nel, NMISA
Tel: +27 12 841 2534
Fax: +27 86 530 5163
E-mail: rnel@nmisa.org

Mr Anthony Paolero, NIST
Tel: + 401 832 8961
Fax: + 401 832 4989
E-mail: anthony.paolero@navy.mil

Dr Andrey Pepelyshev, VNIIM
Tel: + 7 812 251 7601
Fax: + 7 812 713 0114
E-mail: andrey@ap7236.spb.edu

Prof. Knud Rasmussen, DFM
Tel: + 45 4593 1144
Fax: + 45 4593 1137
E-mail: kra@dfm.dtu.dk

Dr Gustavo Ripper, INMETRO
Tel: + 55 21 2679 9112 or 9191
Fax: + 55 21 2679 1296
E-mail: lavib@inmetro.gov.br

Mr Stephen Robinson, NPL and IEC TC WG 15
Tel: +44 208 943 7152
Fax: + 44 208 943 6217
E-mail: stephen.robinson@npl.co.uk

Dr Enver Sadikoğlu, UME
Tel: + 90 262 679 5000/3150
Fax: + 90 262 679 5001
E-mail: enver.sadikoglu@ume.tubitak.gov.tr

Dr Guillermo Silva-Pineda, CENAM
Tel: + 52 442 211 0587
Fax: + 52 442 211 05 58
E-mail: gsilva@cenam.mx

Mr Qiao Sun, NIM
Tel: + 86 10 6452 4623
Fax: + 86 10 6421 8628
E-mail: sunq@nim.ac.cn

Dr Claudine Thomas, BIPM
Tel: + 33 1 45 07 70 73
Fax: + 33 1 45 07 62 62
E-mail: cthomas@bipm.org

Dr Takashi Usuda, NMIJ/AIST
Tel: + 81 298 61 4356
Fax: + 81 298 61 4047
E-mail: takashi.usuda@aist.go.jp

Mr Ian Veldman, NMISA
Tel: + 27 12 841 4008
Fax: + 27 12 841 2131
E-mail: csveldman@nmisa.org

Dr Hans-Jürgen von Martens, PTB/ISO
and ISO TC 108
Tel: + 49 348 176 53
Fax: + 49 348 175 02
E-mail: hans-juergen.v.martens@ptb.de

Prof. Andrew J. Wallard, BIPM
Tel: + 33 1 45 07 70 00
Fax: + 33 1 45 34 86 70
E-mail: awallard@bipm.org

Dr Lixue Wu, NRC-INMS
Tel: + 1 613 993 6966
Fax: + 1 613 952 1394
E-mail: lixue.wu@nrc-cnrc.gc.ca

Dr Bajram Zeqiri, NPL and IEC TC 87
Tel: + 44 208 943 6806
Fax: + 44 208 943 6161
E-mail: bajram.zeqiri@npl.co.uk

Mr Yue Zhang, NIM
Tel: + 86 10 6421 3040
Fax: + 86 10 6421 8628
E-mail: zhangy@nim.ac.cn

Observers:

Dr Marek Blabla, CMI
 Tel: + 420 257 288 316
 Fax: + 420 257 328 077
 E-mail: mblabla@cmi.cz

Mr Hock Ann Chua, A*STAR Singapore
 Tel: + 65 6279 1926
 Fax: + 65 6279 1995
 E-mail: chua_hock_ann@nmc.a-star.edu.sg

Dr Alexander Enyakov, VNIIFTRI
 Tel: + 7 495 535 9397
 Fax: + 7 495 744 8129
 E-mail: enyakov@vniiftri.ru

Dr Christian Hof, METAS
 Tel: + 41 31 32 34 750
 Fax: + 41 31 323 3210
 E-mail: christian.hof@metas.ch

Dr Alexander E. Isaev, VNIIFTRI
 Tel: + 7 495 536 9443
 Fax: + 7 495 744 8129
 E-mail: isaev@vniiftri.ru or office@vniiftri.ru

Dr Anatolij Konkov, VNIIFTRI
 Tel: + 7 495 535 9256
 Fax: + 7 495 744 8128
 E-mail: akustika@vniiftri.ru

Dr Ashok Kumar, NPLI
 Tel : + 91 11 4560 8380
 Fax : + 91 11 4560 9310
 E-mail : akumar@nplindia.ernet.it

Mrs Maria Nieves Medina, CEM
 Tel: + 34 91 807 47 89
 Fax: + 34 91 807 48 07
 E-mail: mnmedina@cem.mityc.es

Dr Vellur Mohanan, NPLI
 Tel: + 91 11 2574 2610 Ext. 2223
 Fax: + 91 11 2572 6938
 E-mail: vmohanan@mail.nplindia.ernet.in

Dr Merita Sinojmeri, BEV
 Tel: + 43 1 49 110 390
 Fax: + 43 1 49 20 875
 E-mail: m.sinojmeri@metrology.at or
 merita.sinojmeri@bev.gv.at

Invited by the President:

Dr Amalia Popescu, INM
 Tel: + 4021 334 50 60, ext 126
 Fax: + 4021 334 55 33
 E-mail: amalia.popescu@inm.ro or
 popescu_amalia@yahoo.com>

Ms Valentina Pozdeeva, RMO COOMET
 Tel: + 375 17 288 0735
 Fax: + 375 17 288 0938
 E-mail: pozdeeva@belgim.by

CCAUV RMO Working Group on CMCs

Chairman: Mr C. S. Veldman, NMISA
Tel: +27 12 841 4008
Fax: + 27 86 509 0831
E-mail: csveldma@nmisa.org

CCAUV Strategic Planning Working Group

Chairman: Dr Bajram Zeqiri, NPL
Tel: + 44 208 943 6806
Fax: + 44 208 943 6161
E-mail: bajram.zeqiri@npl.co.uk

Acronyms and Addresses

ANSTO Australian Nuclear Science &
Technology Organization
Organization Building 16
Private Mail Bag 1
2234 Menai
Australia

ARPANSA Australian Radiation Protection and
Nuclear Safety Agency
Lower Plenty Road
Yallambie
3085 Victoria
Australia

BARC Bhabha Atomic Research Centre
Trombay
400 085 Bombay
India

BAM Federal Institute for Materials Research
and Testing/Bundesanstalt für
Materialforschung und -prüfung
Unter den Eichen 87
D-12205 Berlin
Germany

BEV Bundesamt für Eich- und
Vermessungswesen
Arltgassee 35
A-1160 Vienna
Austria

BIM Bulgarian Institute of Metrology
52B G.M. Dimitrov Blvd
1125 Sofia
Bulgaria

CEM Centro Español de Metrología
Calle del Alfaro nº 2
28760 Tres Cantos - Madrid
Spain

CENAM Centro Nacional de Metrología
km 4,5 Carretera a Los Cués
Municipio El Marqués
76241 Querétaro
Mexico

CIAE China Institute of Atomic Energy
P.O. Box 275 (20)
102413 Beijing
China

CIE Commission internationale de l'éclairage
Central Bureau
Kegelgasse 27
A-1030 Vienne
Austria

CIEMAT Centro de Investigaciones
Energéticas, Medioambientales y
Tecnológicas
Ministerio de Industria y Energía
Avenida Complutense, 22
28040 Madrid
Spain

CMI Czech Metrology Institute
102 00 Praha
Radiova 3
Prague
Czech Republic

**CODATA Task Group on Fundamental
Constants** Committee on Data for Science
and Technology, Task Group on
Fundamental Constants

DFM Danish Fundamental Metrology Ltd.
Matematiktorvet
Building 307
DK-2800 Lyngby
Denmark

DPLA Danish Primary Laboratory for Acoustics
Brüel & Kjaer A/S
Shodsborgvej 307
DK-2850 Naerum
Denmark

ENEA-INMRI Ente per le Nuove Tecnologie,
l'Energia e l'Ambiente -Istituto Nazionale di
Metrologia delle Radiazioni Ionizzanti
via Anguillarese km 1,300
00060 S. M. di Galeria
C. P. 2400 Roma
Italy

GUM Central Office of Measures/Główny
Urząd Miar
P.O. Box P-10
PL 00-950 Warsaw
Poland

IAEA International Atomic Energy Agency
Wagramerstrasse, 5
P.O. Box 100
A-1400 Vienna
Austria

IAU International Astronomical Union
IAU Secretariat
98 bis, Boulevard Arago
75014 Paris
France

ICRU International Commission on Radiation
Units and Measurements
7910 Woodmont Avenue
Suite 800
MD 20814-3095 Bethesda
United States

IEC International Electrotechnical Commission
3, rue de Varembe
P.O. Box 131
1211- 20 Geneva
Switzerland

IFA-CSIC Instituto de Física Aplicada-Consejo
Superior de Investigaciones Cientificas
Calle Serrano, 144
28006 Madrid
Spain

IFCC International Federation of Clinical
Chemistry and Laboratory Medicine

IFIN-HH "Horia Hulubei" National Institute of
Research and Development for Physics and
Nuclear Engineering
Str. Atomistilor no.407
P.O.Box MG-6 Bucharest - Magurele
Romania

IGS International GNSS Service
Central Bureau
JPL MS 238-540
4800 Oak Grove Drive
Pasadena, CA, 91109
United States

IIK Institut für Isotopenforschung und
Kernphysik
"Radiuminstitut"
der Universität Wien
Boltzmannngasse 3
A-1090 Vienna
Austria

INMETRO National Institute of Metrology,
Standardization and Industrial Quality
Santa Alexandrina St, 416
Rio Comprido
20261-232 Rio de Janeiro
Brazil

INPL National Physical Laboratory of Israel
Danciger "A" Bldg
Hebrew University, Givat-Ram
91904 Jerusalem
Israel

INTI Instituto Nacional de Tecnología Industrial
Parque Tecnológico Miguelete
Av. Gral. Paz e/Albarellos y Constituyentes
(B1650KNA)
C.C. 157 - (B1650WAB) San Martín Prov.
Buenos Aires
Argentina

I.N.R.I.M Istituto Nazionale di Ricerca
Metrologica
Strada delle Cacce 91
I-10135 Turin
Italy

IOMP International Organization for Medical
Physics
<http://www.iomp.org/index.html>

IPQ Instituto Português da Qualidade
Laboratório Central de Metrologia
Rua António Gião, 2
2829-513 Caparica
Portugal

IRA Institut de Radiophysique Appliquée
Centre Universitaire
CH-1015 Lausanne
Switzerland

IRI Interfaculty Reactor Institute
Department of Radiation Technology
Mekelweg 15
2629 JB Delft
The Netherlands

IRMM Institute for Reference Materials and
Measurements
European Commission - Directorate
General JRC
Retieseweg
B-2440 Geel
Belgium

IRPA International Radiation Protection
Association
<http://www.irpa.net/>

ISO International Organization for
Standardization
Central Secretariat
1, rue de Varembe
Case postale 56
CH-1211 Geneva
Switzerland

ISO REMCO International Organization for
Standardization, Committee on Reference
Materials

ITU International Telecommunication Union
Radiocommunication Bureau
Place des Nations
CH-1211 Genève 20
Switzerland

IUGG International Union of Geodesy and
Geophysics

IUPAC International Union of Pure and Applied
Chemistry
P.O. Box 13757
Research Triangle Parc
NC 27709-3757
United States

IUPAP International Union of Pure and Applied
Physics

JILA Joint Institute for Laboratory Astrophysics
80303-0440 Colorado, Boulder,
United States

JV Justervesenet
Norwegian Metrology and Accreditation
Service
Fetveien 99
2007 Kjeller
Norway

KRISS Korea Research Institute of Standards
and Science
P.O. Box 102
Yuseong
305-600 Daejeon
Korea, Republic of

LGC Laboratory of the Government Chemist
Queens Road
Middlesex TW11 OLY
Teddington

United Kingdom

LNE Laboratoire national de métrologie et
d'essais
1, rue Gaston Boissier
75015 Paris
France

LNE Conservatoire national des arts et
métiers/Institut National de Métrologie
292, rue Saint-Martin
75141 - CEDEX 03 Paris
France

LNE-LNHB Commissariat à l'énergie
atomique/Laboratoire National Henri
Becquerel
DIMRI - CEA Saclay
Boite postale 52
91193 Gif-sur-Yvette
France

LNE-SYRTE Observatoire de Paris/Systèmes
de Référence Temps-Espace
61 avenue de l'Observatoire
75014 Paris
France

LNMRI/IRD National Laboratory for
Metrology of Ionising Radiation/Institute of
Radiation Protection and Dosimetry CNEN
Av. Salvador Allende
s/n° - Recreio
CEP. 22780-160 Rio de Janeiro
Brazil

METAS Federal Office of Metrology
Lindenweg 50
CH - 3003 Bern-Wabern
Switzerland

MIKES Centre for Metrology and Accreditation
P.O. Box 9
Tekniikantie 1
FIN-02151 Espoo
Finland

MKEH Hungarian Trade Licensing Office
Metrology Departmentl
P.O. Box 919
1535 Budapest
Hungary

MSL Measurement Standards Laboratory of
New Zealand
PO Box 31 310 Lower Hutt
New Zealand

NICT National Institute of Information and Communications Technology
4-2-1 Nukui-Kitamachi
Koganei
184-8795 Tokyo
Japan

NIM National Institute of Metrology
N° 18, Bei San Huan Dong Lu
100013 Beijing
China

NIST National Institute of Standards and Technology
325 Broadway
CO 80305-3328 Boulder
United States

NIST National Institute of Standards and Technology
100 Bureau Drive
Maryland 20899-0001, Gaithersburg
United States

VSL Dutch Metrology Institute
Thijsseweg 11
P.O. Box 654
2629 JA Delft
The Netherlands
Tél: + 31 15 269 1500
Fax: + 31 15 261 2971
WWW: <http://www.vsl.nl>

NMIJ/AIST National Metrology Institute of Japan, AIST
Department of National Institute of Advanced Industrial Science and Technology
Tsukuba Central 3
305-8563 Tsukuba
Japan

NMIA National Measurement Institute,
Australia
PO Box 264
West Lindfield
NSW 2070
Australia

NMISA National Metrology Institute of South Africa
Private Bag X34
0040 Lynnwood Ridge
Pretoria
South Africa

NMISA National Metrology Institute of South Africa
Radioactivity Standards Laboratory
15 Lower Hope Road
Rosebank 7700 Cape Town
South Africa

NPL National Physical Laboratory
Hampton Road
Middlesex
TW11 0LW Teddington
United Kingdom

NPLI National Physical Laboratory of India
Dr K.S. Krishnan Road
110012 New Delhi
India

NRC-INMS National Research Council of Canada
Institute for National Measurement Standards
Montreal Road
K1A 0R6 Ottawa
Canada

OIML International Organization of Legal Metrology

ON Observatoire Cantonal de Neuchâtel
58, rue de l'Observatoire
CH-2000 Neuchâtel
Switzerland

ORB Observatoire Royal de Belgique
Avenue Circulaire, 3
B-1180 Bruxelles
Belgium

PTB Physikalisch-Technische Bundesanstalt
Bundesallee 100
D-38116 Braunschweig
Germany

RC Radioisotope Centre POLATOM
Metrological Laboratory of Radioactive Materials
05-400 Otwock- Swierk
Poland

ROA Real Instituto y Observatorio de la Armada
Cecilio Pujazón S/N
11.110 San Fernando Cadiz
Spain

ROSTEKHREGULIROVANIYE OF RUSSIA

Leninsky prospekt, 9
117049 Moscou
Russian Federation

SL State Laboratory

Young's Cross
Celbridge
Co. Kildare
Ireland

SMU Slovak Institute of Metrology/Slovenský

Metrologický Ústav
Karloveská 63
842 55 Bratislava
Slovakia

SP Technical Research Institute of Sweden

PO Box 857
S-501 15 Borås
Sweden

A*STAR Standards, Productivity and

Innovation Board
National Metrology Centre
1 Science Park Drive
118 221 Singapour
Singapore

SRC Space Research Centre of Polish Academy
of Sciences

Bartycka 18A
00-716 Warszawa
Poland

SSI Swedish Radiation Protection Authority

S-171 16 Stockholm
Sweden

STUK Radiation and Nuclear Safety Authority

P.O. Box 14
Laippatie 4
FIN-00881 Helsinki

TUG Technical University of Graz

Rechbauerstraße 12
A-8010 Graz
Austria

UME National Metrology Institute of Turkey

P.O. Box 54
41470 Gebze-Kocaeli
Turkey

URSI International Union of Radio Science

Secrétariat Général
c/o INTEC, Universiteit Gent
Sint-Pietersnieuwstraat 41
B-9000 Gent
Belgium

USNO U.S. Naval Observatory

Time Service Department
3450 Massachusetts Avenue NW
20392-5420 Washington D.C.
United States

VNIIFTRI Institute for Physical-Technical and

Radiotechnical Measurements,
Rostekhregulirovaniye of Russia
Mendeleevo
141570 Moscow
Russian Federation

VNIIM D.I. Mendeleev Institute for
Metrology, Rostekhregulirovaniye of
Russia

19, Moskovsky Prospekt
198005 St Petersburg
Russian Federation

VNIOFI Institute for Optico-Physical
Measurements, Rostekhregulirovaniye of
Russia

Ozernaya 46
119361 Moscow
Russian Federation

VTT Information Technology Centre for
Metrology and Accreditation

Technical Research Centre of Finland
Measurement Technology
POB 1304
FIN 02044 Espoo
Finland