



EUROMET Length, Annual report 2000/2001

1 General aspects

1.1 Interregional contacts

The Length TC chairmen of the major metrology regions were constantly in close contact. At a meeting of the JCRL (Joint Committee for the Regional Length Chairmen) at NRC in July 2000, a common approach for the CMC review was discussed. It resulted in a letter with recommendations to the JCRB and in a set of common (JCRL)-rules.

1.2 Web site

Since the beginning of this year, EUROMET Length has its own web site (<http://www.npl.co.uk/euromet/length/>), hosted on an NPL server, with Andrew Lewis (NPL) as the web master. The site provides information about points of contact, projects and documents. Project reports can be downloaded.

1.3 Virtual institute

A dedicated call within the 5th Framework Programme of the EU for a *European Virtual Institute for Geometry Measurements* was initiated by an Institute of the University of Bremen. In a letter of interest, the Rapporteur has replied to this call, pointing out that EUROMET covers already many of the aspects of such a virtual institute, at least on the level provided by the NMIs, and that EUROMET Length is interested to take part in this project.

2 Meetings

The annual contact persons meeting was held in Oslo on 9. - 10. October 2000, organised by Justervesenet. It was attended by 22 participants from 20 countries and the BIPM. The status of all active projects was reviewed. From nine completed projects final reports or first results were presented: seven comparisons and two consultations.

A few new activities were proposed, in particular workshops in the field of nano metrology and measurement uncertainty.

Further topics of the meeting were the participation and contribution of EUROMET to the MRA key comparisons as well as the harmonisation and the process for reviewing of the CMCs. These subjects will be discussed separately in this report.

The next contact persons meeting will be held on 15. -16. October 2001 in Budapest.

3 Mutual Recognition Arrangement

3.1 CIPM Key Comparisons

KC	Pilot	Status	EUROMET participants	EUROMET meas. date
CCL-K1	CH	completed	CH GB FR	1999
CCL-K2	GB	running	GB IT DE	1999
CCL-K3	ZA	running	FR IT CH DE	?

CCL-K4	USA	running	CH DE GB IT	2000/2001
CCL-K5	DE	running	ES IT CH DE	2000/2001
CCL-K6	MX	running	FR CZ NL GB DE	2001/2002

3.2 EUROMET Key Comparisons

KC	Pilot	Project #	Status	No. of part.	Meas. date
EUROMET.L-K1	FR	471	completed	17	1999/2000
EUROMET.L-K2	GB	602	agreed	-	2001/2002
EUROMET.L-K3	DE	371	completed	13	1996 - 1999
EUROMET.L-K4	CH	384	completed	15	1996 - 1998
EUROMET.L-K5	DE	372	completed	7	1996 - 1998
EUROMET.L-K6	?	-	-	-	to be agreed 2001

3.3 EUROMET Supplementary Comparisons

A list of past comparisons has been entered in the BIPM key comparison database. Only the new running or agreed supplementary comparisons are listed below.

Subject	Pilot	Project #	Status	No. of part.	Meas. date
Squareness	SK	570	running	10	2000/2001
Surface texture	DE	600	completed	15	2001/2002
Gauge blocks by comparison	IR	601	agreed	-	2001/2002

3.4 CMCs

- Until the end of January 2000, all CMCs were reviewed by the experts; the review criteria were so far mainly inconsistencies. The complete CMCs were submitted to the EUROMET chairman on 31 January 2000.
- According to the proposition of the JCRL and the decision of the JCRB, the top services were reviewed a second time following the criteria of the EUROMET Guide 8. This review was completed in October 2000 and then reviewed by the other RMOs. In December 2000, the CMC top services were first published in the BIPM database on the web.
- The EUROMET review of the other services was completed in March 2001 and submitted to the JCRB. The interregional review is open until the end of July and should be accepted at the next JCRB meeting in October 2001.

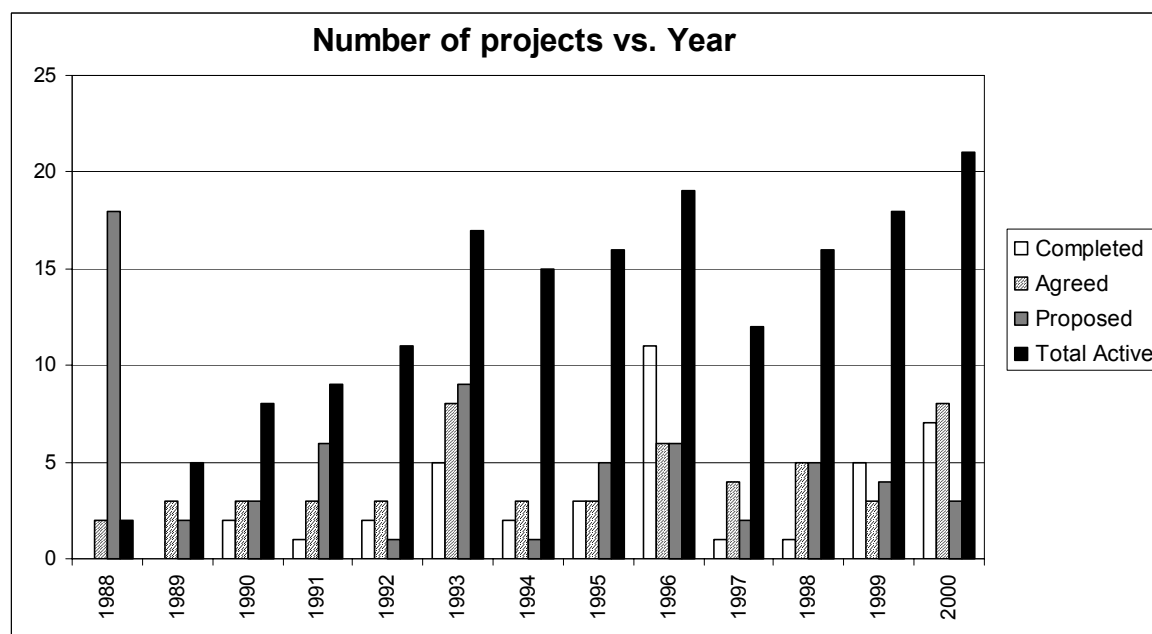
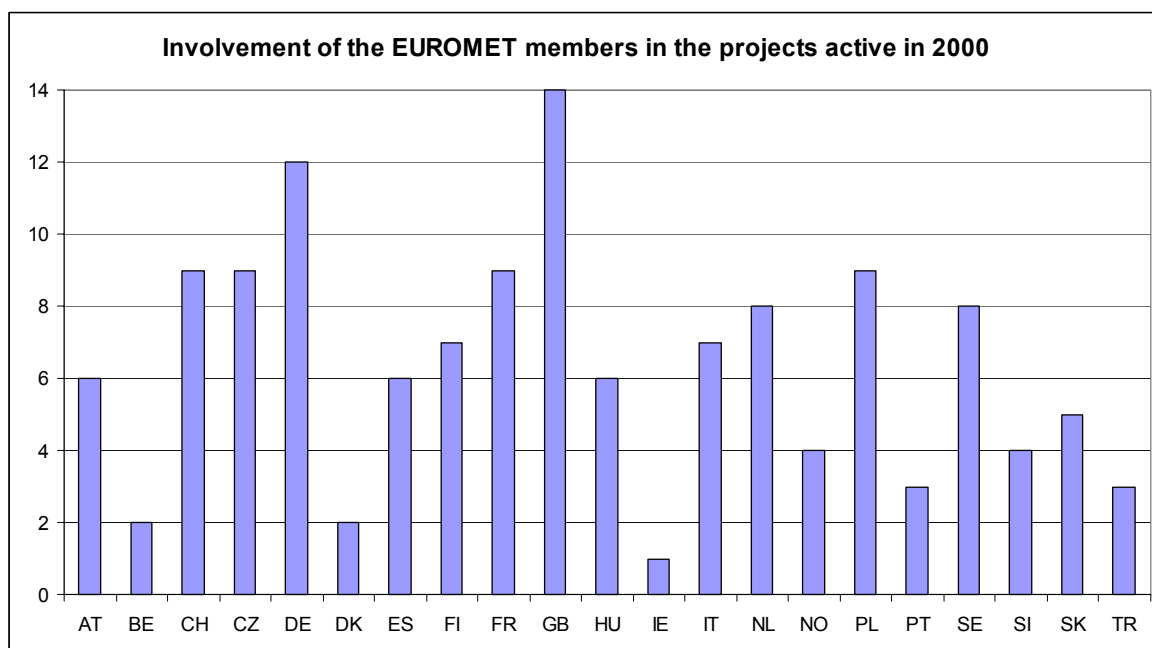
4 Projects

For the following, all information is adjourned on the 1 April 2001 on the basis of the actual status of the active projects rather than on the formal status of the EUROMET project forms.

In the reporting period, 21 projects involving 134 participations from EUROMET NMIs and 7 participations from non-european NMIs, corresponding members and the BIPM were active. Four of these projects are on-going traceability agreements, three consultations, two co-operations in research and twelve comparisons. Seven projects have been completed during this period, while eight projects were agreed.

Many of the projects are related to the MRA: two active and one completed projects are EUROMET key comparisons, and three new projects supplementary comparisons.

Active projects in 2000		Project No.	Type of Co-operation
On-going:	4	7, 135, 137, 142	traceability agreements
Current:	17 (+3)	369, 371, 406, 450, 456, 471, 530, 533, 561, 564, 570, 588, 600, 601, 602, 610, 618	3 consultation 2 co-operation in research 12 comparisons
Total active:		21 (+3)	



Overview on the project activities of EUROMET Length

#	Subject	Type	Partners	Status
7	Calibration of gear standards	Trac	DE GB	ongoing
135	Calibration service for line standards from 0 to 3000 mm	Trac	FR GB	ongoing
137	Certification of API gauges	Trac	GB DE FR	ongoing, latest progress report Aug.2000
142	Calibration of polarimeters & saccharimeters (quartz control plates)	Trac	DE GB	ongoing
369	Diameter calibrations on precision cylindrical standards	Comp	DE CH FR GB IT NL SE USA	measurements completed, final report received Sept 2000
371	Angle calibration on precision polygons (two loops)	Comp	DE BE CH CZ ES FI FR GB IT NL PL SK TR	measurements completed 1999, final report (draft) received Aug 2000
372	Step gauge calibration (positions and thermal expansion)	Comp	DE CH ES GB IT NL SE	results published in PTB-report F-37
406	Dimensional calibration of small holes	Comp	DE CH FR GB IT NL NO BIPM	Measurements completed 1999, final report received Aug 2000
450	Interferometric measurement of long gauge blocks	Comp	SE FI	Project completed 1998
456	Comparison of angle gauges	Comp	PL CH PT	first measurements carried out 1999; measurements repeated in PT Feb 2000; progress report in preparation
462	Comp. of $^{127}\text{I}_2$ stab. 633 nm He-Ne lasers locked by 5th harm. method	Comp	FI CZ CN RU(VNIIM)	Project completed 1998; report submitted to Metrologia; final report received Apr 2000
471	Short gauge blocks measured by interferometry	Comp	FR AT BE CH CZ DE DK ES FI GB HU IT NL NO PT SE SK	on schedule; measurements to be completed Sep 2000
498	Intercomparison of $^{127}\text{I}_2$ stabilised He-Ne lasers at 633 nm	Comp	AT CZ HU PL BIPM	Project completed 1999; final report received Apr 2000
530	Uncertainty components of line scale measurements	Cons	NO SE	project expected to be completed Apr 2000
533	High precision roundness	Comp	FI CH DE GB SE	measurements completed 1999, draft report expected May 2000
561	Measurement of long gauge blocks	Coop	SE ES NL	expected to be completed in Apr 2000
564	Interferometric and mechanical measurements of gauge blocks	Cons	PL SE	starting April 2000
570	Comparison of squareness standards	Comp	SK CH CZ DE FR HU NL PL PT SI	Proposed form received Feb 2000, questionnaire sent to potential participants
588	Traceability of surveying and geodetic instruments	Coop	ES	Proposed Apr 2000
593	PRAQIII Intercomparison of length measurements	Comp	FR CZ FR GB HU PL SI SK div.	Final report received 2.8.2000
600	Comparison of surface texture standards	Comp	DE AT CH CZ DK ES FI GB IT NL PL SI SK TR LT	Starting date expected spring 2001
601	Mechanical comparison of gauge blocks	Comp	IE AT CZ FI GB HU NO PL SI TR LT	Proposal expected to be ready Apr 2000; start in June 2000
602	Calibration of long gauge blocks, EUROMET.L-K2	Comp	GB DE IT	Proposal received Oct 00
610	Comparison of reference laser interferometer systems	Comp	CZ AT HU	Proposed March 2001
618	Interferometric and mechanical measurements of gauge blocks	Cons	PL AT	Starting date April 2001