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Chairpersons' Report to the EURAMET General Assembly 2012 about EURAMET Activities in the last year

Dear Delegates,

It is my pleasure to report about the main activities of our Association during the past year.

Starting with news of the Organisation the main structure of this report follows the seven fields of activity of the EURAMET Association, from the internal governance of the association, through supporting international recognition of Members' national metrology systems, to the implementation of the European Metrology Research Programme and increasing the visibility of metrology in wider fields.

Since this is the last report I present as EURAMET Chairperson, I would like to thank all of you for your support and cooperation and wish my successor, Kamal Hossain, good luck as new Chair.

Best regards,

Prof Leslie Pendrill
Chairperson of EURAMET e.V.

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1 Governance & membership

1.1 EURAMET Governance

1.1.1 EURAMET Policy and Strategy

The objectives, agendas and areas of responsibility of the Board of Directors and the General Assembly are structured according to the seven fields of activity of the EURAMET Association^{1, 2}:

0. Governance & membership
1. Administration & secretariat
- A. Traceability of measurements to SI
- B. International recognition:
 - a. National measurement standards
 - b. Calibration and Measurement Capabilities (CMC) of members.
- C. Knowledge exchange & infrastructural support in Metrology
- D. Policy support
- E. Research in metrology
 - a. European Metrology Research Programme (EMRP)
 - b. Technical Committee R&D projects

These fields are, of course, shared to a greater or lesser extent by each member as well as by EURAMET as a whole. Principal questions are: what does the Association achieve; how well do the different cross-fertilise; and what is the added value of Association membership in these fields, over and above each country's national metrological activities?

As detailed in this Chairpersons' report, particular focus in the past year continues to be on:

- Overall EURAMET Strategy;
- Implementation of the European Metrology Research Programme, particularly EMRP Article 185(169) in the present EU Framework Programme 7 (FP7) and formulation of plans for a possible further research collaboration in FP8

The EURAMET's 2020 Strategy has been launched during the past year and includes statements of Vision, Mission and a number of Strategic Objectives, with accompanying goals and actions.

¹EURAMET <http://www.euramet.org>

²Pendrill L R 2009 "EURAMET: European Association of National Metrology Institutes", *MEASURE*, vol 4, 40 – 44

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EURAMET's 2020 Strategy has been published³, including statements of Vision:

EURAMET to be the leader in the development and application of measurement enabling Europe to be competitive, healthy and sustainable through innovation

and Mission:

- Develop and disseminate an appropriate, integrated and cost effective measurement infrastructure for Europe taking into account the needs of end users in industry, business and Government
- Ensure that the European measurement infrastructure is internationally competitive and recognised, and is based on robust and high quality science and R&D.
- Support members in meeting their own national requirements through collaboration and a balanced European measurement infrastructure

Work on implementing the Strategy has started in the BoD and includes strategic meetings during the Spring 2012 with key stakeholder organisations, such as standards body CEN-CENELEC, the EU Joint Research Centre and the High Level Group of EU Member States and FP7 Associated States on Nanoscience and Nanotechnologies at Directorate G - Industrial technologies, Nano- and converging Sciences and Technologies, of the European Commission.

EURAMET is proud to be implementing the European Metrology Research programme⁴, which is a EU-cofinanced joint programme of 22 countries. For example, topics related to the envisaged redefinition of the SI base units, and international challenges such as related to climate change have been addressed (call "SI broader scope" in 2011, and call "Metrology for Environment" in 2010.) EURAMET seeks views, participations and suggestions from the international metrology community. During this reporting period, an independent interim evaluation of the EMRP has been executed and reported. The European Commission has in this connexion published a press statement⁵, quote:

“The Commission shares the expert panel view, that the EMRP is a well managed and progressively more and more integrated European programme. It has transformed a specialised and fragmented community into a successful public-public partnership confirming the advantages of the European Research Area.”

At the same time, plans for a possible successor programme for the next Framework Horizon2020 has successively taken form. In the Commission report from the interim evaluation of the EMRP, it is stated:

“The Commission will during the next years be open to engage with EURAMET e.V. into preliminary discussions on the possible follow up for the current EMRP in the context of the next

³ <http://www.euramet.org/index.php?id=1703>

⁴ <http://www.euramet.org/index.php?id=emrp>

⁵ <http://ec.europa.eu/research/index.cfm?pg=newsalert&lg=en&year=2012&na=na-160412-1>

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programming period, without prejudice to the final decision about HORIZON 2020 and the EU Multi-Annual Financial Framework, taking into consideration the wider political context of the EUROPE 2020 strategy.”⁶

Particular features of research & innovation metrology which work together in support of an effective leveraging of funds in programmes such as the EMRP Article 185 are:

- Most partners know each other and have cooperated internationally for many decades
- Metrology by its nature relies on obtaining consensus amongst different laboratories
- National metrology is considered in all countries as a public mission rather than a commercial concern.
- NMIs occupy an intermediate position in the innovation value chain: NMIs are neither universities nor industry but strongly interface with both in converting good science into innovative products by providing the metrological infrastructure for growth at all stages.

Other areas of focus mentioned in this Chairpersons' report are:

- Continued strengthening the Secretariat;
- Continued work to clarify International Recognition procedures (e.g. on site peer visits) of Members, especially Designated Institutes;
- Strengthening EURAMET's role in Infrastructure Development
- Increasing the visibility of metrology in the wider fields of conformity assessment and policy support

EURAMET Meetings

See EURAMET website: <http://www.euramet.org/index.php?id=past-events>

At the next EURAMET General Assembly at Lyngby (DK) 22nd/23rd May, one item on the agenda (D06.05 Elections) of the Delegates-only session includes D06.05.01 BoD members and D06.05.02 TC Chairs. The situation concerning these elections is as follows:

1.1.2 (Re-)elections of Board of Directors (BoD) members

The 1st terms of Albert DALHUIJSEN (VSL, NL) and Beat JECKELMANN (metas, CH) as BoD members end at the GA. After consultation with the BoD, each is prepared to continue for a 2nd term on the BoD. In accordance with the EURAMET Byelaws (§9), each Delegate has been asked to consider these proposed candidates as well as invited to propose additional candidates.

1.1.3 New Technical Committee Chairs

The 1st terms of TC-IM Maguelonne CHAMBON (LNE, FR); TC-Q Pavel KLENOVSKY (CMI, CZ); and TC-T Andrea PERUZZI (VSL, NL) end at the GA. After consultation with the respective TC, each is prepared to continue for a 2nd term as TC Chair. In accordance with the EURAMET

⁶REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL, Interim Evaluation of the European Metrology Research Programme – EMRP, COM(2012) 174 final, http://ec.europa.eu/research/press/2012/pdf/emrp_report_en.pdf

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Byelaws (§11 (2)2 and §16), each Delegate has been asked to consider these proposed candidates as well as invited to propose additional candidates.

1.1.4 New members of EURAMET EMRP Research Council

Following the retirement of one of the Personal Members of the Research Council, René Dändliker, in December 2011, the vacancy has been filled by the appoint of Prof **Ursula Keller** ETH Zürich (CH) as **new Member of the EURAMET Research Council**.

1.1.5 Development of EURAMET Quality Management System

The development of the QMS has been further stimulated by various actions required by the European Commission's *ex ante* audit of the Association in connexion with implementation of the Article 185 (169) EMRP.

1.2 EURAMET Membership

The actual number of Members and Associates in EURAMET is as follows:

- 37 Members (M)
- 1 Associate with permanent observer in the General Assembly (A-GA)
- 71 Associates – Designated Institute (A-DI)

1.2.1 Changes in membership

None.

1.2.2 Associate membership, incl Designated Institutes

The EURAMET Secretariat and Vice chairperson (GA) worked during the last year on processes for **better integration of Designated Institutes** (DIs) into EURAMET, including the recent landscaping on national metrology infrastructure, composed by NMI and DIs. The basic principles of the draft document on “National metrology infrastructure in EURAMET member countries – an analysis and recommendations” have been endorsed and prepared in a form of EURAMET Guide 11⁷.

1.2.3 Liaison Organisations & other contacts

Ties with several European and international organisations have been strengthened during the past year, in many cases as part of EURAMET's increased engagement in ‘Science Diplomacy’:

AFRIMETS – EURAMET Memorandum of Understanding

Following the signing (September 2010) of a Memorandum of Understanding (MoU) between EURAMET and AFRIMETS (the RMO of Africa), activities recently have included an invitation to EURAMET from UNIDO to an expert group meeting on Metrology, export diversification and intra-industry trade in Africa held in Lusaka, Zambia on the 3 and 4th May 2012. This follows the development in an UNIDO project of an AFRIMETS roadmap.

⁷ http://www.euramet.org/fileadmin/docs/Publications/euramet_guides/EURAMET-Guide-11_v1.0.pdf

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CEN-CENELEC European Standardisation

Following the signing (June 2010) of a Collaboration Agreement between the European standards bodies CEN-CENELEC and EURAMET, the organisations are in the process of identifying a number of concrete actions, such as exploiting the results of research projects (e.g. in the European Metrology Research Programme in the context of Conformity Assessment – see separate points below) which have potential impact through standardisation and pre-normative R&D, for instance, nanometrology and smart grids. EURAMET strategy work on **5.2.2 Establish a mechanism for rapid response to EC consultations to support European Policy development and implementation** includes these CEN-CENELEC Contacts.

EA European Accreditation

Increased interaction with EURAMET at various levels and in different EA groupings. On-going discussions with EA leadership about framework partnership agreement COM-EA and NMI quality systems. The present MoU is intended to be revised. EURAMET, having the possibility to participate in the EAAB (European Accreditation Advisory Board), conveys to EA all the problems EURAMET members are facing with the respect to accreditation such as cross-frontier accreditation policy; the influence of regular and successful participation in intercomparisons on the frequency of surveillance visits in accredited labs; a number of NMIs having no local NAB that is MLA signatory; problems with the expert assessors etc. Closer cooperation has proved to be very successful. At the level of the EA Laboratory Committee (LC) the following issues are closely pursued by EURAMET:

- Consequences of the Joint ILAC-BIPM communication regarding the accreditation of CMCs of NMIs (now in the stage of final draft in ILAC);
- Laboratory intercomparisons to be launched by EA LC in Europe to underpin ILAC MRA;
- Harmonization of accreditation scopes of calibration labs.

In future, a closer cooperation between EURAMET TC-Q and EA Laboratory Committee is to be expected.

JRC (incl IRMM) European Joint Research Centre

EURAMET & JRC (EU COM Joint Research Centre) are continuing discussions in a joint Contact group to consider opportunities for collaboration and overlapping responsibilities in areas of common interest, where a draft revised MoU might capture the future strategies of both the JRC and EURAMET. The two organisations unanimously agree about the importance of developing complementary activities and joint programmes whenever possible. EURAMET strategy work on **5.2.2 Establish a mechanism for rapid response to EC consultations to support European Policy development and implementation** includes these JRC Contacts.

NCSLi National Conference of Standards Laboratories International

EURAMET continues to liaise with the NCSLi, where the EURAMET Chair is an NCSLi Board member.

WELMEC European Legal Metrology

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Part of the work (§1.2.2) on processes for **better integration of Designated Institutes (DIs)** into EURAMET has also addressed the recently formed EURAMET-WELMEC FOCUS GROUP (since May 2010) on Facilitating National Metrology Infrastructure Development since a number of EURAMET members deal with scientific and legal metrology under a single National Metrology Organization. In this respect possible developments/upgrade of the joint EURAMET-WELMEC focus group is foreseen.

EURAMET attended:

Joern Stenger attended the **APMP GA 2012** meetings at Kobe, Japan, in December 2011 and Kamal Hossain gave an invited plenary talk entitled 'Measurement and Standards Challenges and Strategy for Nanotechnology' at the APMP Open Symposium held immediately prior to the GA meeting.

Events of EURAMET Stakeholders

See EURAMET website: <http://www.euramet.org/index.php?id=past-events>

2 Administration and Secretariat

2.1 EURAMET as an employer

The EURAMET Board of Directors is at present seeking candidates for two new posts to the Secretariat: a Communications Officer and a Joint Programming Coordinator, for appointment as soon as possible. It is timely for EURAMET to strengthen its resources in these two areas: Communications and Joint Programming - amongst others with these new posts - in order to progress in all of the activities of the Association - from SI dissemination to research - to the benefit of its members (see separate points below)

3 Traceability of measurements to SI

NMIs have of course many contacts with secondary calibration laboratories, not only as part of regular SI dissemination but also as an essential part of metrology knowledge exchange. A pan-European organisation of secondary calibration laboratories, as an equivalent to the NCSLI, is effectively missing, apart from partial coverage by organisations such as EURACHEM and EUROLAB. Secondary calibration laboratories have a long list of topics where NMIs could potentially help, including both consultancy, training courses but also the organisation of regional metrology conferences (see §5.3) The question has been discussed how EURAMET could support such an initiative. Nevertheless, it is still clear that the basic mission of EURAMET and NMIs is to provide traceability to SI at the highest level and assure dissemination to lower levels, thus supporting all conformity assessment bodies.

4 International recognition

4.1 National Measurement Standards

It can be difficult to identify which are the national standards and which quantities and measurement capabilities would be appropriate to be **declared as national standards**. This issue requires further

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discussions, within and beyond EURAMET, including in particular the BIPM and the Consultative Committees.

One Delegate highlighted in this context during the year the fact that a network of national laboratories was existing already before the launch of the CIPM MRA (in his country, but it is also the case for other countries), and that even today the network of these laboratories goes beyond the group of those DIs participating in the CIPM MRA.

EURAMET is concerned about the efforts and resources related to the ever-increasing number of CMCs and the key comparisons and sees a need to reform the MRA into a more efficient and sustainable arrangement.

4.2 Calibration and Measurement Capabilities (CMC) of members

EURAMET has drawn attention, for instance in the Joint Committee of the Regional Metrology Bodies (JCRB) to the following issues in particular:

1) *DI Designation*

EURAMET has welcomed the BIPM initiative during this reporting period to confirm the *DI landscaping* in the various countries, in line with EURAMET's proposal for "Designation of DIs and follow-up towards CMCs", which was kindly forwarded by the JCRB to the other RMOs.

2) *Service Categories and the MRA*

EURAMET has sent the JCRB a letter on issues related to the service category "others". The service categories under CIPM MRA should be carefully reviewed with the aim to reduce their numbers if possible and to delete any categories with no technical specification (e.g. "Other").

3) *Reflection about CMC processes*

EURAMET has prepared during the year a new Position Paper concerning suggested improvements in the CMC processes.

4.2 Quality management reviews

The seventh TC-Q meeting was held in Warsaw (Poland) on March 7-9, 2012. It was attended by 60 experts from 33 countries or international organisations together with invited observers: from EURAMET Secretariat - Wolfgang Schmid, from IAEA - Joanna Izewska, from COOMET - Pavlo Neyezhnikov, from EA Laboratory Committee – Trevor Thompson. The TC-Q plenary was preceded by a meeting of the Steering Committee on March 7, 2012 at the headquarters of GUM. The Steering Committee, the plenary meeting, and the visit of the laboratories were hosted by the Polish national metrology institute GUM.

The main outcomes of the meeting were:

- Approval of up-dated TC-Q documents – “Annual report template” and “Guideline for QMS Annual report”.
- A number of Initial QMS presentations and QMS periodical re-evaluations

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- Review of 95 annual reports from 31 countries or organisations including those which QMS was re-evaluated during the meeting, full confidence given to 27 laboratories on spot, minor complementary information requested from 63 laboratories and major complementary information requested from 5 laboratories; the complementary information is to be delivered within eight weeks after the meeting. ENSAM (France) decided not to continue as DI CIPM MRA member and their CMCs to be deleted (for the second time in a row they have not submitted the annual report).
- 7 EURAMET projects aimed at mutual on-site peer reviews are ongoing. Their main objective is the realisation of joint/unilateral peer review audits of quality management systems in the following laboratories:

New EURAMET TC-Q projects were announced:

- Following EURAMET projects aimed at mutual on-site peer reviews will be registered - EIM (Greece) and UME (Turkey); VMT/FTMC Lithuania with CMI

Several points were also discussed:

- In cooperation with the EURAMET Secretariat a decision has been made to prepare a dedicated TC-Q database to facilitate the handling of TC-Q documents (currently over 800 in number). The new developments concerning the TC-Q database were presented at the meeting. TC-Q database will enable to store all the TC-Q documents in more structured way and to simplify the work of reviewers during the evaluation process. BoD has already approved of the funds necessary to develop the corresponding SW application – the idea is to complete the process by the end of the year.
- TC-Q documents Guideline for QMS Annual report, Template of Annual report were accepted with two minor comments which will be taken on board and sent back to TC-Q contact persons for the final approval. The remaining two TC-Q guidelines dealing with Initial presentation and Re-evaluation presentations will be updated by the end of April 2012 and will be sent to TC-Q contact persons for their comments. The idea is to completely overhaul all TC-Q documents by summer to be used for the reporting at the next meeting.

All the relevant documents, including the presentations, are available on the EURAMET TC-Q web site.

In 2011 a thorough analysis of the situation of EURAMET institutes under CIPM MRA was made from the viewpoint of their coverage by external auditing. Currently, EURAMET maintains its quite flexible approach to on-site external auditing in the EURAMET institutes - the existing options are:

- accreditation (by an ILAC MRA signatory)
- on-site visit by peers (inclusive an internal audit with external auditors)
- an audit made by the corresponding NMI (applicable only to A-DIs).

The conclusion is (without giving the details): all the EURAMET NMIs are covered (or are being covered in 2012) by either accreditation by an ILAC MRA signatory or by on-site visits by peers. All the A-DIs with CMCs are either accredited, peer reviewed or audited by their respective NMI inclusive the international organization IAEA Vienna.

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5 Knowledge exchange & infrastructural support in Metrology

Effective promotion and publicity has been identified by the Board of Directors (BoD) as a key element of the new EURAMET Strategy introduced last year. Accordingly, the GA 2011 agreed within the approved budget for 2012 to recruit a Communications Officer. To ensure that the post meets EURAMET requirements in this area, the BoD has developed a communications strategy and prepared a prioritised action plan led by Paul Hetherington. This has enabled us to define a specification for the Communications Officer.

5.1 TC-IM Focus Group on Facilitating National Metrology Infrastructure Development

This active EURAMET Focus Group⁸ in principle covers support to NMIs in all areas of their activity: Dissemination of the SI; International Recognition; Knowledge Exchange; Policy Support; and Research. Although being established primarily for metrology related activities, the Focus Group has with time initiated numerous activities having an impact on the wider technical quality. At the same time its activities were appreciated by EURAMET members as well as by metrological organisations from other regions. A regional vision for the coordination of services in South-East Europe has been developed by a core group; at the annual meeting of the FG on 3/4 December 2010 first actions for its implementation have been agreed. At the annual meeting the FG was re-established as a joint FG between EURAMET and WELMEC, recognising the high importance which legal metrology has for many of the FG members. It was emphasised that it is important to engage all EURAMET members in the Focus Group rather than merely a sub-regional cooperation⁹.

5.2 EURAMET in development programmes

The EURAMET Board of Directors has performed a preliminary analysis of potential cooperation with the COM and others in the provision of development programmes where metrology is part of a wider quality infrastructure. This analysis has included a survey made during 2009 of EURAMET Members' activities in such development programmes as well as contact with other organisations active in this area. A contact group has recently been formed of EURAMET members in development activities and continued discussions about the ambitions of EURAMET in this area (EU neighbouring regions, other regions (e.g. Africa)) and potential links with other organisations such as AFRIMETS, CEN-CENELEC, COOMET, WELMEC and UNIDO. As a sort of a pilot project of cooperation with COM a training programme for metrologists of Caribbean countries was successfully carried out in March 2011 (so called CROSQ – EURAMET project) where a number of NMIs have subdivided the work.

⁸EURAMET website: Focus Group on Facilitating National Metrology Infrastructure Development www.euramet.org/index.php?id=tc-im-focus-group

⁹ Schmid W and Leitner A 2009 "Cooperation in development of national metrology infrastructure within EURAMET", *MEASURE*, vol 4, 34 - 38



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5.3 Other outreach: Calibration guides & conferences

EURAMET aims to coordinate metrology education & training material, both for its members and for industry. A series of calibration guides, earlier produced in collaboration with EA, has been reviewed and adapted to the new EURAMET organisation. These guides fill an essential role, not only for secondary and industrial calibration laboratories but also for the NMIs themselves. Globally, there is an acknowledged lack of international guides of this kind. Recently as many as 8 EURAMET Calibration Guides have been published in revised form.

EURAMET is working closely with a number of organisers of metrology conferences. This includes CFM (French College of Metrology) where EURAMET continues on the Organising Committee and had some visibility at the CFM 2011 congress (October 2 – 6, Paris). Other metrology conferences in which EURAMET is involved include:

- June 8 2011, EURAMET Symposium, Sarajevo (Bosnia-Herzegovina)
- June 15 – 17 2011, IMEKO TC-11 “International Symposium on Metrological Infrastructure”, Dubrovnik (Croatia)
- June 20 – 23 2011, International Conference on Advanced Mathematical and Computational Tools in Metrology and Testing (AMCTM 2011), Gothenburg (Sweden)
- August 22 – 25 2011, NCSLi Workshop & Symposium, Washington DC, USA
- EMRP session at CFM 2011 congress (October 2 – 6, Paris)
- November 2011, EMRP event, Brussels

5.4 EURAMET & EMRP publicity

EURAMET continues to publish Newsletters during the year (October 2011 and May 2012)¹⁰.

Promotional material on the EMRP JRPs has been prepared in the form of flyers, posters, and web content along with specific material to encourage the take up of Researcher Grants. Such activity increased significantly during the past year with specific resources in MSU devoted to this and the coordination of promotion activity between the JRPs.

¹⁰EURAMET Newsletters <http://www.euramet.org/index.php?id=euramet-newsletter>

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EURAMET EMRP JRP Posters on show at the CFM 2011 Metrologie Congress (October 2 – 6, Paris)

6 Policy support

The link between metrology and conformity assessment is precisely the area of meeting the Grand Challenges through better measurement: product quality is assessed for conformity by making 'quality' measurements. EURAMET is pleased to work together with colleagues in Regulation, Standardisation, Legal Metrology and Accreditation, in providing the necessary technological Quality Infrastructure for modern society.

The area of quality-assured measurement technology - "Metrology" – provides an essential support for sustained growth and innovation in many sectors and industries. The role of metrology in conformity assessment - in both regulated and unregulated sectors – is in supporting:

- I. Quality-assured measurements in conformity assessment
- II. Quality management systems of conformity assessment bodies
- III. Proactive policy advice, regulation, written standards and pre-normative R&D



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EURAMET has during the year increased its visibility by systematically reporting for instance how EMRP Joint Research Projects lead to impact through better standards, as well as interacting with amongst others the following key groups:

- High Level Group of EU Member States and FP7 Associated States on Nanoscience and Nanotechnologies at Directorate G - Industrial technologies, Nano- and converging Sciences and Technologies, of the European Commission.
- Standards body CEN-CENELEC.

7 Research in Metrology

The European **metrology research programme** EMRP is well underway. A first group of 9 research projects in the EMRP Article 185 programme resulted from the first Call 2009, addressing Metrology for Energy¹¹ and totalling about 30 M€ over 3 years. By the end 2010, a second round of Calls¹² resulted in 17 approved projects for Metrology in Industry and 9 projects for Metrology & the Environment, which have started during 2011 with research volumes of, respectively, about 49 M€ and 43 M€ for a three year period. EMRP Calls¹³ for 2011 Metrology & Health, The Broader SI and Metrology & New Technologies stimulated proposals which has led to 11 projects in Health, 10 projects in Broader SI and 9 New Technology projects at present under contract negotiation for start later this Spring.

The General Agreement between the Commission & EURAMET formally engaging EURAMET to implement the Article 169 phase of the EMRP (7 years, total value 400 M€) was signed on 4th December 2009, completing the legislative and contractual processes associated with the establishment of the EMRP. During the Autumn of 2011, an independent interim assessment of the Programme was made and reported to the EU Commission at the end of November. Negotiations are now in progress for a possible follow-up metrology research and innovation programme (called 'EMPIR') for the next Framework Programme Horizon2020 of the EU. The various national Ministries who are programme owners of the national metrology programmes of EURAMET members engaged in research met in Berlin in January to discuss amongst others plans for increased innovation and opening of the next candidate EMPIR programme.

¹¹ <http://www.euramet.org/index.php?id=call2009>

¹² <http://www.euramet.org/index.php?id=call2010>

¹³ <http://www.euramet.org/index.php?id=1485>