

Meeting of the Euramet project 924

Recent Developments of European Metrology

Jörn Stenger, PTB

MERA project: Euromet project 662; Sept. 2002 – Nov. 2004

THE “METROLOGY DILEMMA”

Mostly Government investment in metrology is static or decreasing



Metrology requirements are increasing in both traditional and new areas

iMERA project: “ERA-NET” project; 1st April 2005 – 31 March 2008

- Consortium of 20 partners from 14 countries
- 14 NMIs, plus JRC-IRMM, 5 Ministries as formal partners

iMERA-plus Research programme as a bridging measure towards

European Metrology Research Programme under Article 169

iMERA project:

Objectives:

- Metrology foresight to meet societal needs and support technical innovation
- Sharing facilities and launching coordinated research projects
- Creating the structures to conduct an Article 169 based European Metrology Research Programme (EMRP) co-funded by the European Community
- Developing the EMRP

Resolution in May 2006:

Euromet

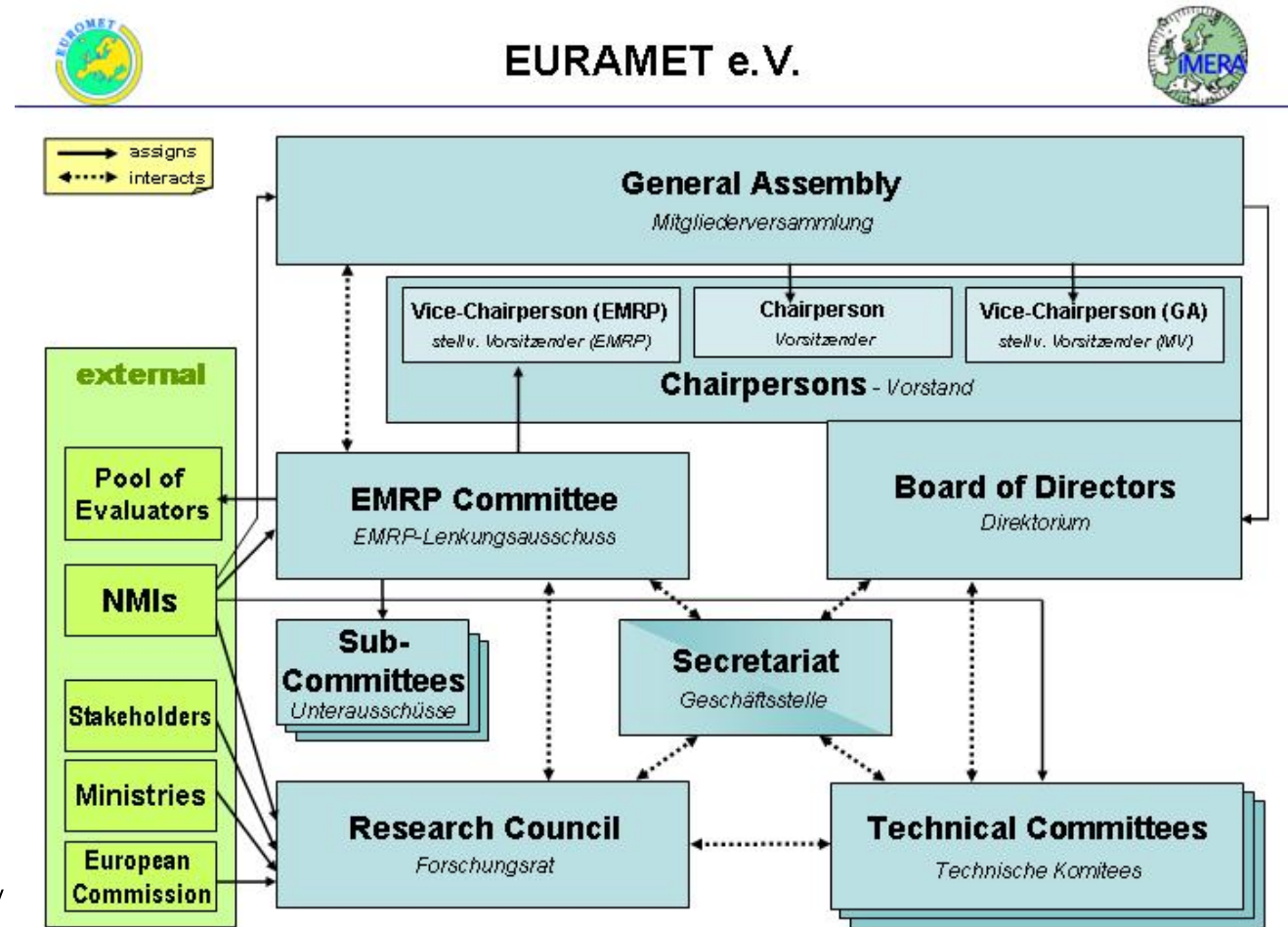
- Recommends that the EUROMET partner NMIs in iMERA should go ahead with the **creation of a legal entity** suitable for both the operation of the EMRP and the other purposes of EUROMET

11th January 2007:
Inauguration of
EURAMET e.V.

12th January 2007:
Inauguration of EMRP
Committee

4th April 2007:
“Not for profit”
Association (e.V.)

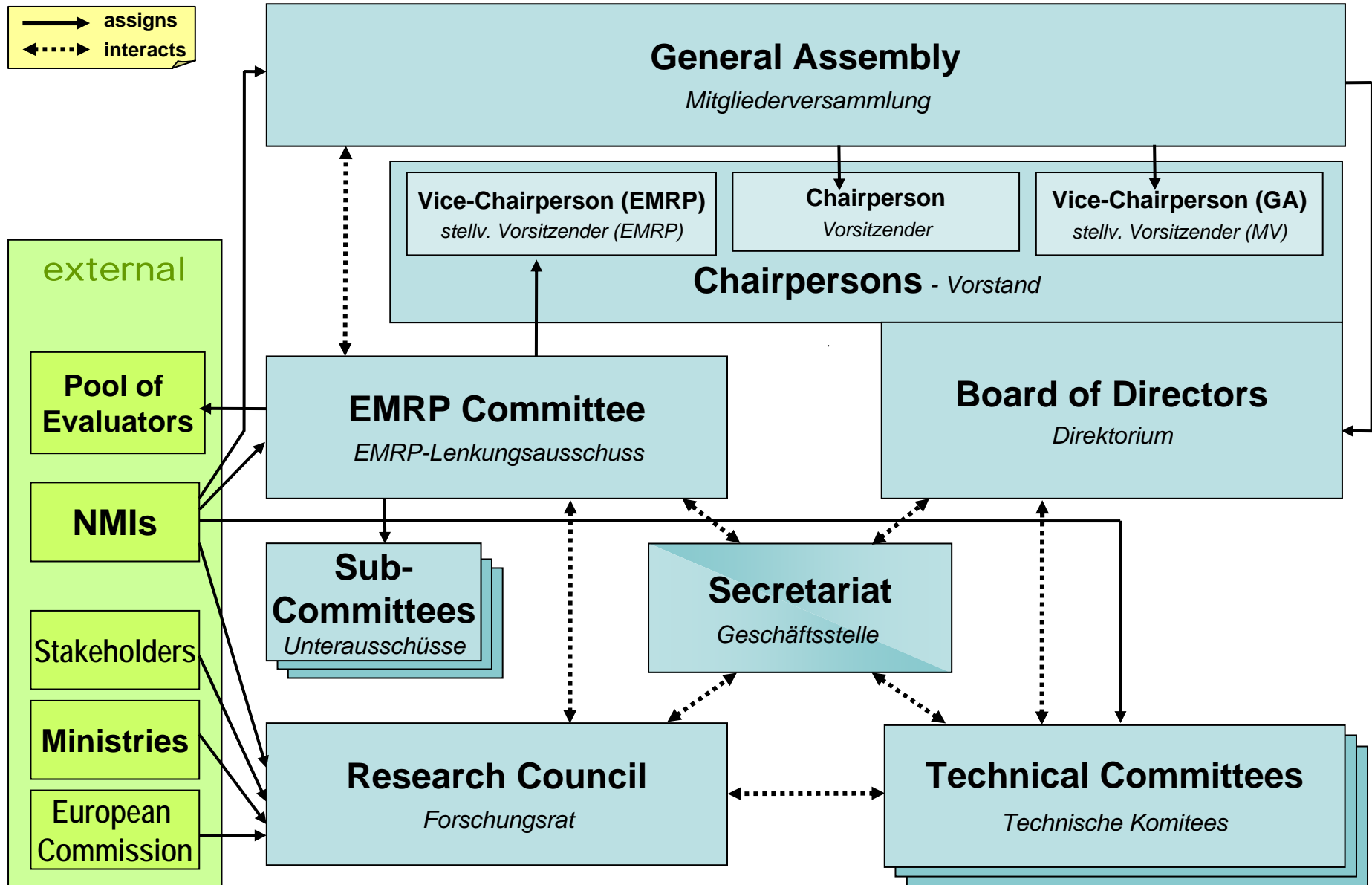
<http://www.euramet.eu/>



July 2007

EURAMET became the European Regional Metrology Organisation under the intergovernmental Metre Convention (EUROMET MoU dissolved)

Euramet e.V.

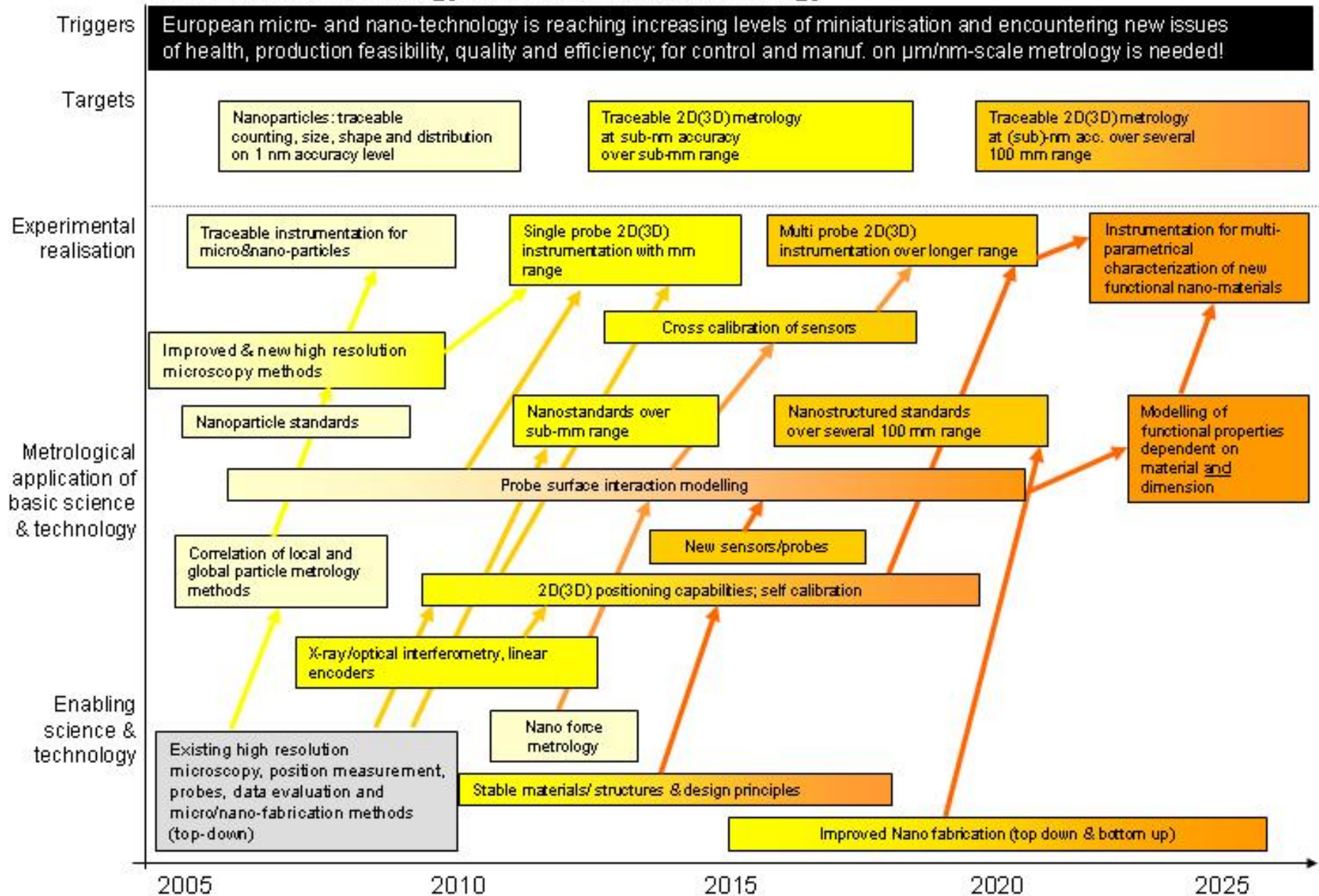


Major goal of the iMERA project from 4/06 - 3/08:

Formulating the European Metrology Research Programme EMRP

- Major roadmapping exercise successfully completed
- 44 roadmaps (developed by EUROMET TCs)
- 4 new focus groups for metrology needs associated with:
 - Life Science
 - Biotechnology
 - New materials
 - Software and Mathematics
- European Metrology Research Programme (EMRP) approach agreed and EMRP developed and agreed

Dimensional metrology for micro-nano technology



EMRP Structure

III ACTIVITIES

III.1 Grand Challenges

Health

Energy

Environment

New technologies for nano sciences and security

III.2 R&D for fundamental and applied metrology

III.2.1 Grand challenges on fundamental metrology

III.2.2 Focused single discipline and applied metrology

Ionising Radiation, Electricity & Magnetism, Time & Frequency, Photometry & Radiometry, Temperature, Mass and mechanical (inc acoustics), Length, Chemistry, Biotechnology, Materials

III.3 Capacity building and Future EMRP Activities

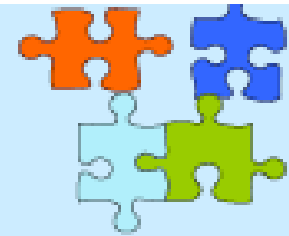
III.3.1 Capacity Building

III.3.2 Future EMRP Activities

The Commission have supported iMERA-Plus - a bridging measure on the road to Article 169

ERA-NET Like in FP6: Coordination of programmes

- ✓ MS agree and fund joint calls/programmes
- ✓ EU funding only for coordination



ERA-NET Plus New in FP7: Top up of a single joint call

- ✓ MS contribute to a joint trans-national call 2/3
- ✓ EU funding for research: 1/3 of the joint call



iMERA Plus: 64.6 M€

(Participating countries contribute ~43.6 M€, EC 21 M€)

Call in 4 Themes: metrology underpinning:

- SI and fundamental metrology
- Health sector
- Length
- Electricity & magnetism

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III.3.1 Capacity Building

III.3.2 Future EMRP Activities

The iMERA-plus Review Conference:

- direct interaction of referees and proposers on scientific issues
- round table prioritisation of referees
- final decision by EMRP committee





The Ranked List of JRPs: Recommended for funding

T1.J1.2	NAH	Avogadro and molar Planck constants
T1.J1.1	e-MASS	Watt balance
T1.J1.3	REUNIAM	Redefinition of the SI base unit ampere
T1.J2.1	OCS	Optical clocks for a new definition of the second
T3.J1.1	Nanoparticles	Traceable characterization of nanoparticles
T2.J10	TRACEBIOACTIVITY	Traceable measurements for biochemistry
T4.J01	Power & Energy	Next generation of power and energy
T3.J1.4	NANOTRACE	New Traceability Routes for Nanotechnology
T2.J11	CLINBIOTRACE	Traceability of complex biomolecules
T4.J03	JOSY	Next generation of quantum metrology
T3.J3.1	Long distance	Absolute long distance measurement in air
T2.J07	EBCT	External Beam Cancer Therapy
T4.J07	EMF and SAR	Traceable measurement of field strength and SAR for the Physical Agents Directive
T2.J04	Regenmed	Metrology on a cellular scale for regenerative medicine
T1.J1.4	Boltzmann constant	Determination of the Boltzmann constant
T2.J06	Brachytherapy dosimetry	Increasing cancer treatment efficacy using 3D brachytherapy
T3.J2.2	NIMTech	Metrology for New Industrial Measurement Technologies
T4.J04	ULQHE	Development of ultimate metrological QHE devices
T1.J2.3	qu-Candela	Candela: Towards quantum-based photon standards
T2.J02	Breath analysis	Breath analysis as a diagnostic tool for early disease detection
T4.J02	NanoSpin	Nanomagnetism and Spintronics

Funded institutes in the selected JRPs:

Number of participations: 149
 Number of unique institutes: 39
 Number of countries: 19 + EC




"Collaborators" in the selected JRPs:

Number of participations: 26
 Number of unique institutes: 24
 Number of countries: 10 + BIPM

Towards Article 169:

Decision to split the 4 candidates

- EUROSTARS and AAL to go directly to Co-decision
- EMRP and BONUS to be given a bridging ERA-NET Plus

ERA-NET	Like in FP6: Coordination of programmes <ul style="list-style-type: none">✓ MS agree and fund joint calls/programmes✓ EU funding only for coordination	
ERA-NET Plus	New in FP7: Top up of a single joint call <ul style="list-style-type: none">✓ MS contribute to a joint trans-national call 2/3✓ EU funding for research: 1/3 of the joint call	
Art. 169	Full integration of national programmes <ul style="list-style-type: none">✓ Scientific and financial: strong EU funding✓ Single implementing structure	

EMRP as an article-169 action:

budget 400 Mio. € for 7 – 8 years; 50% cofinanced by Commission

