



Strategic Research Agenda for Metrology in Europe

EURAMET GA & RC meetings

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- Strategic Research Agenda (SRA) background
- Structure and progress on the SRA
- Proposed next steps
- Recommendations for revision



Strategic Research Agenda (SRA) for Metrology in Europe



A strategic document that will:

- a) facilitate the development of future priorities for Metrology in Europe recognizing fully that NMIs and DIs operate within policies determined nationally;
- b) guide the Work Programme for EMPIR;
- c) assist EURAMET TCs to develop co-operations in research beyond EMPIR;
- d) enhance stakeholder engagement

The consultation process



- Input from EURAMET Technical Committees
 - well-established links with key stakeholders in industry, RTOs, business, governmental organisations, regulatory bodies, Standards development organisations, academia, and NMIs and DIs globally
- EURAMET Task Groups were established to cover the grand challenge areas of Health, Energy and the Environment, with input from external stakeholders
- Wider web consultation on the document will be carried out with stakeholders, prior to its publication

The Strategic Research Agenda for Metrology in Europe

Background

- 1 Introduction

The Metrology Activity

- 2 European Grand Challenges and Innovation
- 3 Metrology Research Supporting the Redefinition, Realisation and Dissemination of the SI and Derived Units

Enhancing Impact

- 4 Building Capacity for a Coordinated European Measurement Infrastructure
- 5 Increasing the Impact of Metrology Research

- 6 Glossary

- 7 Bibliography

- Setting the scene for the SRA

Introduction (≈ 5 pp.)

- Context
- Common vision and goal
- Research in support of standards
- Learning from the EMRP
- Looking ahead
- Implementation of the SRA
- Consultation process

- Metrology developments addressing Europe's Grand Challenges and the Economic Growth Agenda

2. European Grand Challenges and Innovation (≈ 25 pp.)

2.1 Health Grand Challenge (≈ 6.5 pp.)

- Measurements and imaging at the molecular and cellular level; Quantitative diagnostics; Supporting innovation in healthcare; Health protection.

2.2 Environmental Grand Challenge (≈ 8 pp.)

- Metrology for climate monitoring and meteorology; Metrology for pollution and resource sustainability; Generic challenges for environmental metrology.

2.3 Energy Grand Challenge (≈ 8 pp.)

- Metrology for Energy Production & Conversion; Metrology for energy transport and storage; Metrology for Energy use; Efficiency and cross-cutting themes.

2.1 Health Grand Challenge

- **Key challenges**
 - EU Policy, economic and societal drivers
- **Current capability and state of the art**
 - Recent activity, EMRP projects
- **Key activities**
 - *Key themes identified: Measurements and imaging at the molecular and cellular level; Quantitative diagnostics; Supporting innovation in healthcare; Health protection.*
- **Key outcomes**
 - *High level outcomes (≈ 8), e.g. Measurement devices and reliable procedures for new techniques in diagnostic and therapy to enable their introduction in clinical routine and hence to support the European healthcare industry.*

- Metrology developments addressing Europe's Grand Challenges and the Economic Growth Agenda - (cont.)

2.4 Innovation (≈ 3 pp.)

- Due to the vast potential landscape of activity, the text does not indicate specific activities.
- *"Innovation" aims at giving a technology push to European industry by developing and exploiting cutting edge measurement technologies*
- *R&D needs to be focused on those areas that have potential for high impact on innovation and consequently economic growth*
- *"A striking result of a recent study is that measurement knowledge is more strongly associated with novel than with 'catch-up' innovation" – suggesting focus on supporting European Key Enabling Technologies (KETs)*

KETs: Nanotech., Micro/Nanoelectronics, Photonics, Advanced Materials, Industrial Biotech., Advanced Manufacturing.

- Developing the metrological infrastructure: Fundamental and SI Broader Scope Metrology

3. Metrology Research Supporting the Redefinition, Realisation and Dissemination of the SI and Derived Units (≈ 25 pp.)

- 3.1 Introduction (≈ 1)
- 3.2 Fundamental Scientific Metrology (≈ 2)
- 3.3 Acoustics, Ultrasound and Vibration (≈ 1.5)
- 3.4 Chemistry (≈ 2)
- 3.5 Electricity and Magnetism (≈ 2.5)
- 3.6 Flow (≈ 1.25)
- 3.7 Ionising Radiation (≈ 1.75)
- 3.8 Length (≈ 3)
- 3.9 Mass and Related Quantities (≈ 2.5)
- 3.10 Photometry and Radiometry (≈ 2.25)
- 3.11 Thermometry (≈ 2)
- 3.12 Time and Frequency (≈ 2.5)
- 3.13 Mathematics and Modelling for Metrology (≈ 0.5)



4. Building Capacity for a Coordinated European Measurement Infrastructure (≈ 2 pp.)

“to create and sustain a balanced and integrated European metrology network, its infrastructure and research capability, providing support to all European nations and thus enabling Europe to remain competitive internationally”

- Research Potential: the development of research capabilities in NMIs and DIs
- Human & Institutional Capacity Building: consolidation of the metrological core competence of NMIs and DIs

5. Increasing the Impact of Metrology Research (≈ 2.5 pp.)

5.1 Pre and Co-normative Metrology Research (≈ 1.5 pp.)

- to develop the metrological basis that is required for prioritised documentary standardisation

5.2 Support for Impact (≈ 0.75 pp.)

- increasing the impact of prior metrology research

Glossary (≈ 3 pp.), Bibliography (≈ 4 pp.)

» SRA Total page count ≈ 68 pages

The SRA – Proposal for next steps

1. Final receipt of comments by end Monday 22 June 2015 (> 2 weeks)
2. Incorporate recommendations for revision from GA & RC meetings and consider comments from EURAMET GA and RC participants, by SRA drafting panel, by mid-July 2015 (3-4 weeks)
3. External consultation on the SRA: distribute to key stakeholders for comment, including on-line consultation, by mid-September 2015 (6-8 weeks)
4. Final revision by SRA drafting panel, taking into account consultation returns, followed by approval by EURAMET BoD and publication, by October 2015 (4 weeks)

The Strategic Research Agenda – GA/RC recommendations



1. *Incorporate recommendations for revision from GA/RC meeting*

- Recommendations:
 - Include Executive Summary
 - Not a static document - regular review of the impact of the SRA and its update
 - ...
 - ...

Contact



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