

The European Partnership on Metrology– current status

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Research Programmes



CREATING IMPACT BY ADVANCING MEASUREMENT SCIENCE

EURAMET's European Metrology Research Programmes (EMRP and EMPIR) are fostering international collaboration, driving research excellence, addressing society's grand challenges, including health, energy and the environment, and contributing to Europe's economic turnover



<https://www.euramet.org/metrology-for-societys-challenges/>

EURAMET's European Metrology Research Programme at a glance



across **119** projects

Pooling expertise of

24 NMIs
and
46 DIs from
23 European countries



plus the NMIs from Australia, Brazil, Canada, China, Japan, Mexico, New Zealand, the Republic of Korea and the Russian Federation

2 537

articles
in peer-reviewed
journals

1 186

training activities

236

academic
research groups



businesses
and **50** other
organisations

5 368
presentations
at conferences



1 223

contributions
to

68

contributions to draft standards
and published standards

310

technical
committees and
working groups
of standards
organisations

840 presentations
at workshops
and seminars, reaching
an audience of
33 000
people



140

published newsletters
and press releases



260

number of
articles in
trade and
popular
press



Supported the
development of improved
instruments and machines
with projected sales of

352.8 M€

Development – current status call 2022



- Call 2022 will consist of 5 Target Programmes:
 - Normative
 - Research Potential
 - Health
 - Integrated European Metrology
 - Digital Transformation
- Similar process like EMPIR with stage 1 open from Mid January to Mid February and stage 2 open from end of June to End of September 2022

The European Partnership on Metrology– Draft General Objective



To Create, by 2030, a sustainable and effective system for metrology at European level that ensures Europe has a world-class metrology system that:

- Provides metrology solutions, fundamental metrological reference data and methods, offering fit-for-purpose solutions supporting and stimulating European innovation and responding to societal challenges.
- Supports and enables effective design and implementation of regulation and standards that underpin public policies that address societal challenges

The European Partnership on Metrology— Draft Specific Objectives



1. That the national contributions to the Partnership should enable the development of sustainable European Metrology Networks that provide metrological solutions for

- i. innovative technologies and
- ii. public policy and regulation for key societal challenges.

These networks should have a strong stakeholder focus and significant role in the development of the strategic research and innovation agenda for the partnership.

The European Partnership on Metrology— Draft Specific Objectives



2. That the European Union contributions to the Partnership should fund Joint Research Projects that aim to Increase and accelerate innovation through effective use of metrology solutions, capabilities and infrastructure. With the result that an average of 50 M€ of European turnover from new or significantly improved products and services can be attributed to the Metrology Partnership and its predecessors each year.

3. That supporting activities associated with the Partnership should increase the role of metrology in design and implementation of public policy and regulation for key societal challenges. This should be demonstrated by the numbers of:

- roles on European and international policy, regulation and standards committees directly related to addressing social challenges
- contributions to European and international standards directly related to EU

What about Associated Countries?



- First countries are associated (Iceland, Norway, Ukraine)
- Further negotiations have been completed with Turkey and some Balkan states, therefore association agreements for them are expected soon to be available
- Hope is that Associated Countries will bring their own country's joining fee which will increase the overall 300 M€ budget from the commission.

Preliminary call plan under discussion



2021	Green Deal
2022	Health, Integrated European Metrology, Digital Transformation
2023	Fundamental, Industry
2024	Green Deal
2025	Health, Integrated European Metrology
2026	Fundamental, Industry
2027	Green Deal

- Normative and some form of Research Potential in each year
- “Integrated European Metrology” replaces SI with a focus on joint capabilities and infrastructures

Topics could include, but are not limited to:

- *Metrological methods to ensure efficacy and safety for diagnostics, including remote diagnostics, and therapeutics, also on cell and molecular levels.
- *Procedures, analytical methods and statistical models to underpin epidemiology and strengthen disease prevention and protection of public health, including preparedness for future pandemics and resilience to medication.
- *Metrological methods for digital technologies applied in the health sector, such as in medical devices, image analysis and personalised medicine.
- *Metrological methods for advanced (multi-modal) radiotherapy, nanomedicine and theranostics (therapy in combination with diagnostics).
- *Quality assurance of test procedures, test kits and vaccines for infectious diseases such as Covid-19, but also other virus- or bacteria-induced diseases, as well as non-infectious and non-transmissible diseases.
- *Metrological methods for drug delivery, microfluidic applications and nanotoxicology, including engineering solutions such as closed-loop therapeutic drug delivery and sensing solution technologies.

Integrated European Metrology 2022



The call supports the joint research and development of new advanced techniques for providing traceability of measurement results to the users of metrology services. All technological disciplines and metrological fields may be addressed if stakeholder needs are documented or can be convincingly anticipated.

The metrological capabilities and infrastructures of the NMIs and DIs should be jointly developed to address these needs, should demonstrate a high level of integration, be self-sustaining and be internationally leading.

Proposals must describe:

1. Concrete metrology needs, such as related documents published by the stakeholders.
2. Contributions that the joint, self-sustaining research and service capabilities will make in underpinning regulation, EU policies that address societal challenges, or industrial needs.
3. The added value provided through coordination and integration of capabilities of several institutes beyond capabilities of a single institute.

Digital transformation call 2022



Proposed topics may address metrological methods and solutions both for digitised measurement scenarios and for data as such, including:

- *Generic approaches to metrology-based quality-secured data generation, processing and storage that underpin different measurement applications, and for which common, harmonised methods are needed.
- *Metrology for large sensor networks and “big-data”, including modelling of systems.
- *Generic in-situ methods for IoT use cases, including in-situ traceability in fully-digital sensor scenarios.
- *Assessing and understanding robustness, functionality, reliability & quality of measurement scenarios (like artificial intelligence, machine or deep learning.
- *Development of fundamental requirements for reference data for the validation of digital measurement scenarios and algorithms, which may include AI.
- *Methods for the (automated) assessment of data quality and data quality assessment tools, which is key for their interpretability and usability.

Research Potential Call 2022



- Potential Research Topics (PRTs) submitted for this call should identify:
- the research capabilities that should be developed (as clear technical objectives),
- the area for which the capabilities are built (GreenDeal, DIT, Health, IEM, IND, NRM or FUN),
- in which future main call the developed research capabilities are planned to be employed,
- the particular metrology needs of stakeholders and the difference that the metrology research will make,
- national needs and any strategic priorities of a region with respect to the specified area proposed,
- the impact this research will have on those countries' NMI/DI that have emerging metrology research needs,
- how the developed research capability of the participating NMIs/DIs will be sustained and further developed after the project ends.

Questions?

