

European Metrology Programme for Innovation and Research

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Delegation Agreement RTD/xxxxxxxxx

European Partnership on Metrology ANNUAL REPORT

2021 – Part A

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Author: Dagmar Auerbach (EURAMET Programme Manager)

Commission Project Officer: Georgios Valsamos

Publishable Summary

The over 600 M€ European Partnership on Metrology was established in 2021 by minimum twenty-nine participating countries and the European Union, utilising Article 185 of the European Treaty. It follows on from the European Metrology Programme on Innovation and Research (EMPIR) which held its last call for Joint Research Projects in 2020. EURAMET - the European Association of National Metrology Institutes - is the body responsible for the implementation of European Partnership on Metrology. The decision of the European Parliament and of the Council on the participation of the Union in the European Partnership on Metrology jointly undertaken by several Member States (COM(2021)0089 – C9-0083/2021 – 2021/0049(COD)) was adopted in November 2021. The legislation was published in the Official Journal at the end of November 2021 and entered into force on 1 December 2021. A Delegation Agreement or Financial Framework Partnership Agreement was not signed with EURAMET before the end of 2021 and this report is submitted in anticipation of the agreement being signed in early 2022.

The core activity of European Partnership on Metrology consists of funding multi-partner transnational joint research projects to advance metrology and its applications. In view of the concentrated capacities in metrology, the core part of European Partnership on Metrology is executed by National Metrology Institutes (NMIs) and Designated Institutes (DIs) identified by the participating states.

The key differences between EMPIR and European Partnership on Metrology are the replacement of cofunding schemes as well as the closer collaboration among other partnerships within the Horizon Europe Funding scheme.

The year 2021 saw the completion of the first annual call and selection process. The two-stage process for joint research projects commenced with a call for ideas, followed by a call for proposals against the selected ideas. EURAMET launched the first stage of this call requesting ideas addressing metrology needs underpinning industrial competitiveness and research potential in January, with Stage 1 closing in February. The ideas received were prioritised by EURAMET in April, and the preparatory work for second stage dedicated call completed in June. The Stage 2 call was pre-published in June and officially launched in August and closed at the beginning of October, addressing 31 topics which had been distilled from the best of the ideas received in Stage 1. For each of the topics published a supporting document was provided identifying the need or opportunity, the scientific objectives and potential impact.

The proposals received were checked for eligibility and then subject to independent expert evaluation at European level culminating in a Review Conference (at which the referees meet a representative of the proposing consortia). This was held at the end of November remotely and involved 61 referees, the representative for each proposal in the Normative and Green Deal TP and the EURAMET Management Support Unit that runs the programme. The following Tuesday, the Partnership Committee formally endorsed the recommendations of the independent referees without change. Although the referees deemed 16 of the 19 Green Deal proposals and 10 of the 11 Normative proposals of suitable quality for support, budget restrictions were such that only the top 9 proposals in the Green Deal list and the top 4 in the Normative list were sent for ethics screening with a view to being funded. An independent observer attended the Review Conference and gave both a positive report and some suggestions for improving the process. The projects sent for ethics review cover:

For the Green Deal Thematic Programme:

1. Metrology support for carbon capture utilisation and storage
2. Metrology for the harmonisation of measurements of environmental pollutants in Europe
3. Metrological traceability of measurement data from nano to small-microplastics for a greener environment and food safety
4. Metrology for multi-scale monitoring of soil moisture
5. Metrology for the hydrogen supply chain
6. In operando metrology for energy storage materials
7. Metrological framework for passive radiative cooling technologies

8. Metrology for Earth Biosphere: Cosmic rays, ultraviolet radiation and fragility of ozone shield
9. Metrology for European emissions verification on methane isotopes

For the Normative Thematic Programme:

1. Metrology for digital substation instrumentation
2. Protocol for SI-traceable validation of methods for biomethane conformity assessment
3. Metrology for emerging wireless standards
4. Support for the standardisation of luminance distribution measurements for assessing glare and obtrusive light using high-dynamic-range imaging systems

Formal notification including outcome, evaluation marks, ranking and the comments of the independent referees and ethics reviewers will be sent to the proposers in 2022. The list of selected projects along with the names of the referees and some basic statistics will appear on the EURAMET website on the formal announcement dates.

The EMPIR and European Partnership on Metrology are good examples of European Joint Programming - pooling national research efforts in order to make better use of Europe's precious public R&D resources to tackle common European challenges more effectively. The first stage of the call selects research areas where the stakeholder need is clear and the metrology community have the appropriate resources to make a significant impact. The second stage is a competition where the best proposals (in terms of scientific excellence and potential impact) are chosen by independent referees. The result is collaborative European projects where critical mass is brought to bear on clear objectives, with agreed project plans and enhanced stakeholder engagement. All the participants abide by the European level independent evaluation, clearly demonstrating the true "European Research Area" nature of the programmes.

Details of the running and completed EMPIR projects are available from the EURAMET website www.euramet.org, details of the new European Partnership on Metrology projects will also be available here as they start.