EMPIR Call 2014 – Industry and Research Potential

Selected Research Topic number: **SRT-r06**
Version: 1.0

Title: Developing metrology research potential in [country]

Abstract

Social advantages and economic competitiveness in modern society are supported by an effective national measurement system which is a generally recognised instrument in providing reliable measurement results traceable to the units of SI. Within Europe there is diversity in the size, capabilities, experience and age of the National Metrology Institutes and associated Designated Institutes.

This SRT focuses on a generic type of project aiming to establish metrology research potential in emerging NMIs or DIs of a specific country and more than one proposal submitted in response to this SRT may be funded.

Keywords

National metrology strategy, metrology research potential, capacity building

Background to the Metrological Challenges

In order to respond to an existing capability gap in emerging EURAMET member countries and regions, Research Potential Projects (RPOTs) have been included within EMPIR for the development of the potential for metrology research of the participating organisations, which will subsequently provide input to other aspects of technology transfer, innovation, regulation and all other aspects of research. The overall strategic aim of these metrology capacity-building activities, which may be based on a particular technological area or may address multiple fields, is to achieve a balanced and integrated metrology system in the participating states, enabling them to develop their scientific and technical capabilities in metrology. Proposals should address clearly identified metrological needs, be research-oriented and might include the facilitation or establishment of smart specialisation. Competitive metrology capabilities affect all other aspects of the technical quality infrastructure of the participating NMIs and DIs, therefore directly contributing to increased European economic welfare.

EURAMET has identified the following preconditions and strategic goals associated with this type of project. They reflect the overall objective to develop an efficient, demand-oriented and coherent European landscape of metrology research and service capabilities.

1. **Sustainability:** existence of a national strategy, a procurement plan for metrology capabilities or recent investments in equipment such as through structural funds or other international funding agencies, demonstrating the long-term commitment of the country to provide the necessary resources.
2. **European dimension:** contribution of the project to the European coherence in metrology research and service capabilities, not only including the benefit for the emerging NMIs or DIs but also the impact on countries of similar size or at a similar level of development.

An NMI or DI wishing to establish a research capacity would do so through the design, construction and validation of their facility or techniques. The design would build on the experience of more developed NMIs, using their expertise to optimise the design for the particular needs of that country. The validation process would involve the establishing NMI in comparisons and analysis of uncertainties with others establishing similar facilities/techniques and those with long established facilities/techniques. The whole process would result in both the development of a facility or technique, the development of the relevant staff and the development of relationships between the establishing NMI and more experienced researchers in the field which would foster further joint research activities beyond the life of the project.

This SRT addresses a generic type of project aiming to establish metrology research potential in emerging NMIs or DIs of a specific country. It is thematically open, i.e. it is possible to address one or more thematic areas. Proposals from different countries within Europe are expected in response to this SRT and more than one proposal could be funded.

EURAMET-MSU
National Physical Laboratory
Hampton Road, Teddington,
Middlesex, TW11 0LW, UK

Phone: +44 20 8943 6666
msu@npl.co.uk
www.euramet.org

Objectives

Proposers should address the objectives stated below, which are based on the PRT submissions. Proposers may identify amendments to the objectives or choose to address a subset of them in order to maximise the overall impact, or address budgetary or scientific / technical constraints, but the reasons for this should be clearly stated in the proposal.

The JRP shall focus on the development of metrological capacity in the technical field(s) identified as a priority in an individual country.

The specific objectives are:

1. To develop measurement methods in technological fields which are prioritised according to the national strategy for the NMIs and DIs in an individual country, and which make use of existing equipment or equipment that will shortly be available.
2. To intercompare the methods developed in the JRP with existing techniques/methods within the European metrology community.
3. To develop a strategy for the long-term development of research capability in the relevant technical field(s), including priorities for collaborations with the research community in that country, the establishment of appropriate quality schemes and accreditation (e.g. participation in key comparisons, the entry of CMCs into the BIPM database, accreditation to ISO/IEC 17025).
4. To also develop a strategy for offering calibration services from the established facilities to that country and others (smart specialisation). The individual strategy should be discussed within the consortium and with other EURAMET NMIs/DIs, to ensure that a coordinated and optimised approach to the development of traceability in these fields is developed for Europe as a whole.
5. To establish co-operation between NMIs and universities or research organisations to enable efficient use of existing metrology and academic/research competence and limited resources in the development of measurement methods and metrology services.

Proposers shall give priority to work that meets documented metrological needs and activities that will lead to an improvement in European metrological capability and infrastructure beyond the lifetime of the project.

Proposers should establish the relevant current capability for research, and explain how their proposed project will develop capability beyond this.

EURAMET has defined an upper limit of 500 k€ for the EU Contribution to any project in this TP, and a minimum of 100 k€.

EURAMET also expects the EU Contribution to the external funded partners to not exceed 10 % of the total EU Contribution to the project. Any deviation from this must be justified.

Potential Impact

Proposals must demonstrate adequate and appropriate participation/links to the “end user” community, describing how the project partners will engage with relevant communities during the project to facilitate knowledge transfer and accelerate the uptake of project outputs. Evidence of support from the “end user” community (e.g. letters of support) is also encouraged.

You should detail how your JRP results are going to:

- Address the SRT objectives and deliver solutions to the documented needs,
- Provide a lasting improvement in the European metrological capability and infrastructure beyond the lifetime of the project,
- Facilitate improved industrial capability or improved quality of life for European citizens in terms of personal health or protection of the environment,
- Transfer knowledge to the nanotechnology sector and the metrology community.

You should detail other impacts of your proposed JRP as specified in the document “Guide 4: Writing Joint Research Projects”.

You should also detail how your approach to realising the objectives will further the aim of EMPIR to develop a coherent approach at the European level in the field of metrology and include the best available contributions from across the metrology community. Specifically the opportunities for:

- improvement of the efficiency of use of available resources to better meet metrological needs and to assure the traceability of national standards

- the metrology capacity of EURAMET Member States whose metrology programmes are at an early stage of development to be increased
- organisations other than NMIs and DIs to be involved in the work

Time-scale

The project should be of up to 3 years duration.