

Partnership on Metrology Call Process
Guide 2: Submitting a Potential Research Topic

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CONTENTS

1	Background to the Call	3
1.1	Stage 1: Call for PRTs (This stage of the Call)	3
1.2	Stage 2: Call for Joint Research Projects (Next stage of the Call)	3
2	Eligibility for submitting a PRT	3
2.1	Who is eligible to submit ideas?	3
2.2	Eligibility criteria for a PRT	4
3	Completing the PRT template	4
3.1	Section A.1 Targeted Programme (TP).....	4
3.2	Section A.2 Details of submitter	4
3.3	Section A.3 Optional details of co-authors	4
3.4	Section B: Topic description.....	5
3.5	Section B.1: Title	5
3.6	Section B.2: Abstract.....	5
3.7	Section B.3: Keywords	5
3.8	Section B.4: Scientific and technological objectives	5
3.9	Section C: Background.....	6
3.10	Section C.1: Justification of need for the proposed objectives	6
3.11	Section C.2: Current state-of-the-art	7
3.12	Section D: Potential Impact / Benefits.....	7
3.13	Section D.1: Impact of the proposed research.....	7
3.14	Section D.2: Impact at the European level.....	7
4	Submitting the PRT	7
4.1	When to submit the PRT	7
4.2	Checks before submitting the PRT	7
4.3	How to submit the PRT	8
4.4	Getting help with your PRT submission	8

If you require further help or guidance after reading this document, please contact the helpdesk

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1 Background to the Call

The potential European Partnership on Metrology ¹aims, through the development of a self-sustaining integrated European metrology system, to develop new measurement capabilities that have strategic impact for Europe, with the overall goal of accelerating innovation and competitiveness, generating data and knowledge necessary to improve quality of life, and providing better tools for the scientific community.

The Call for Potential Research Topics (PRT) is Stage 1 of a two stage process that enables EURAMET to focus on specifically identified challenges and needs related to metrology research for Europe. This process provides a flexible and efficient approach both to targeting resources towards the most important and/or urgent needs in pursuit of EURAMET's objectives and in assisting eventual project proposers by ensuring that their efforts are directed towards those challenges and needs.

Where appropriate, EURAMET may use the PRT template and process for any two stage call, including grand challenges, research potential, standardisation and innovation based calls. Submitters should therefore complete the template with information relevant to the specific, published Call Scope.

1.1 Stage 1: Call for PRTs (This stage of the Call)

All interested parties can submit measurement related needs to EURAMET provided those needs are within the area covered by the published Scope for a Call. Details of the measurement challenge, opportunity or problem must be submitted on [Template 2: PRT Template](#)

Please note that project proposals are not submitted at Stage 1 – the call is for stakeholder needs not proposals to address those needs.

The EMPIR Committee (or a dedicated sub-committee) will prioritise the potential topics received by EURAMET (that are within scope) as described in [Guide 3: Prioritising PRTs](#). The EMPIR Committee may choose to merge, split or amend topics, in order to create a number of Selected Research Topics (SRTs) of suitable scope that address the highest priority needs. Each SRT is defined by a supporting document based on the original PRT ideas submitted to this Call. The supporting document will not identify the original submitter.

Please note that submission of a PRT acknowledges that any eventual supporting documentation is owned by, and may be amended, or combined by EURAMET.

1.2 Stage 2: Call for Joint Research Projects (Next stage of the Call)

The SRTs will be published at Stage 2: Call for Joint Research Project (JRP) proposals, to enable eligible, interested parties to prepare proposals. All parties submitting in response to Stage 2 will be treated equally, regardless of any input at Stage 1.

At Stage 2: eligible, proposals will be subject to independent expert evaluation.

The selected and contracted JRPs will be delivered primarily by publicly funded National Metrology Institutes and Designated Institutes from the countries participating in the Partnership. External organisations are also eligible to participate;

- as an External Funded Partner
- as an Unfunded Partner
- or as a collaborator

2 Eligibility for submitting a PRT

2.1 Who is eligible to submit ideas?

Anyone, from any country worldwide, may suggest ideas at Stage 1. Stakeholders beyond the metrology research community such as industry, regulators, policy makers and standardisation bodies together with end users of the metrology system in Europe are particularly encouraged to submit their needs and ideas.

¹ During its strategic planning phase for 'Horizon Europe', the European Commission invited proposals for European partnerships in order to deliver on global challenges and modernise industry. The proposal submitted by EURAMET detailing a European Partnership on Metrology to accelerate the global lead of Europe in metrology research has now been published and is under consideration by the European Commission.

Please note that multiple submissions of the same idea from that community will not increase the chance of the topic being included in Stage 2 of the Call and are therefore discouraged.

2.2 Eligibility criteria for a PRT

- The PRT must be relevant to the published Call Scope
- The PRT must be on [Template 2: PRT Template](#)
- The PRT must be a Microsoft Word document of less than 0.5 MB
- Sections B to D of the PRT must not exceed 4 pages in total (of typical text size Arial 10 pt)
- The proposed research must not already be funded by the European Union

Please note that PRT submissions that do not meet these eligibility criteria, or which have been superseded, will not be reviewed.

3 Completing the PRT template

Each PRT submission should identify a single topic, although this may be quite broad and include connected elements. Additional unrelated topics should be proposed in a separate PRT submission.

A submitted PRT has to fulfil two requirements:

1. To provide sufficient information to enable EURAMET to evaluate it, in particular;
 - Has a clearly specified metrological, scientific, or technological need / challenge / problem / opportunity been identified? Is this justified? Why does it need to be addressed by a collaborative European metrological approach rather than a national one? What is the scale of this need?
 - What is the likelihood of the European metrology research community effectively addressing the need / challenge / problem / opportunity taking account of the progress required beyond the current state of the art?
 - How significant will the impact be for stakeholders if the proposed topic was successfully addressed?
2. To be suitable for incorporation into supporting documentation for Stage 2 of the Call, i.e.:
 - Sections B to D must remain anonymous (i.e. no references to the submitter, submitter's organisation, co-authors and/or affiliations),
 - Text should be clear and concise.

3.1 Section A.1 Targeted Programme (TP)

Specify the TP and classification appropriate for the PRT submission. The classifications within each TP are given on <https://msu.euramet.org/>

3.2 Section A.2 Details of submitter

This section is for administrative purposes only and will NOT form part of any supporting documentation at Stage 2 of the Call.

Name of Submitter:	The name of the submitter in the format <i>Firstname FAMILYNAME</i> .
Organisation/affiliation:	The full name of the organisation and/or their affiliation
Country:	A single country must be selected. This is usually the country of the organisation, or where the submitter is predominantly based.

3.3 Section A.3 Optional details of co-authors

This section is for administrative purposes only and will NOT form part of any supporting documentation at Stage 2 of the Call.

Co-Author:	The name of an individual/organisation, in the format <i>Firstname FAMILYNAME</i> .
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Organisation/affiliation: The full name of the organisation and/or their affiliation

Country: Usually the country of the organisation. However, in the case where the co-author is an international organisation, the countries represented by the organisation can be written individually, or by a regional grouping e.g. European.

PLEASE NOTE that anyone named in this section MUST have given explicit permission to the submitter for their name to be included. EURAMET may attempt to contact anyone named.

3.4 Section B: Topic description

Section B is typically 1 page with a maximum of 1.5 pages. Please note that NO information on potential consortia and/or resources should be included.

3.5 Section B.1: Title

Choose a self-explanatory title, up to 150 characters including spaces.

3.6 Section B.2: Abstract

This abstract should provide a standalone summary of the proposed research topic outlining the background and the need, up to 750 characters including spaces.

3.7 Section B.3: Keywords

Choose 5 to 10 keywords linked to the proposed research topic.

3.8 Section B.4: Scientific and technological objectives

Section B.4 is typically 0.5 pages. The objectives MUST be in bulleted format and there should A MAXIMUM OF 5 OBJECTIVES. The objectives should be distinct, and MUST NOT be a list of activities.

The objectives should be stated (where possible) in quantitative terms, and targets, uncertainties, ranges and compounds etc. should be included where appropriate. The objectives should be clear in order to enable a proper and fair prioritisation of the PRT and to provide an appropriate basis for the evaluation of any eventual proposals at Stage 2.

EURAMET may choose to combine PRTs and it is the responsibility of proposers to ensure that the information provided is clear and unambiguous. Thus, vague statements, which could lead to either a misinterpretation of the requirements or to an inappropriate work plan, should be avoided.

Example 1: B.4: Scientific and technological objectives in an energy or industry call

The overall objective is to enable the traceable measurement and characterisation of power quality and stability in Smart Grids.

The specific objectives are:

1. To perform measurements of power quality (PQ) at geographically dispersed locations in a Smart Grid to analyse the propagation of power quality disturbances throughout the network to determine the most significant sources of disturbing influences on the network; and to develop and demonstrate on-site measurement system methods for the measurement of network impedance in HV/MV/LV networks and associated resonance points.
2. To develop and validate new phasor measurement unit (PMU) algorithms that are suitable for LV and MV distribution networks. These networks are characterised by smaller distance, lower phase shift and hence require higher phase sensitivity whilst accounting for a higher level of PQ disturbances. Also, to develop new measurement and calibration methods for the dynamic performance of PMUs as proposed in IEEE standard C37-118.1 (2011). To undertake on-site calibration of installed PMUs to verify operation and accuracy in realistic conditions.
3. To develop metrology-grade grid transducers and grid diagnostic tools including non-invasive transducers and algorithms for on-site measurement of emerging PQ parameters as defined by standardisation and industrial need. Reconcile the propagation of transducer uncertainties through complex PQ and PMU algorithms. Develop laboratory test equipment for calibration of the non-invasive transducers or commercial non-conventional transformer test equipment as defined by standardisation and industrial need. Also, to develop wide area techniques for grid fault location and network diagnostics.
4. To provide metrology input and pre-normative research to the evolution of International (CENELEC, IEC) standards concerning PMUs for network controllability and PQ in a Smart Grid context.

5. To engage with industry to facilitate the take up of the technology and measurement infrastructure developed by the project, to support the development of new, innovative products, thereby enhancing the competitiveness of EU industry.

Example 2: B.4: Scientific and technological objectives in a normative call

The overall objective is to develop traceable measurement and characterisation methods for use in the Standards being developed by ISO TC 197 “Hydrogen Technologies” and related groups.

The specific objectives are:

1. To provide a substantial contribution to the revision of Standards in the ISO 14687 series (Hydrogen fuel - Product specification) in fuel cell applications for road vehicles. The contribution to be focused on measurement methods for the characteristics of hydrogen fuel in order to assure uniformity of the hydrogen product as produced and distributed.
2. To provide a substantial contribution to the development of EN 16726 (Gas infrastructure – Quality of natural gas – Group H) by developing traceable measurement methods for the determination of the chemical properties of H₂/natural gas mixtures with different hydrogen levels in the blends.
3. To work closely with the European and International Standards Developing Organisations, and the users of the Standards they develop, to ensure that the outputs of the project are aligned with their needs, communicated quickly to those developing the standards, and in a form that can be incorporated into Standards at the earliest opportunity.

Example 3: B.4: Scientific and technological objectives in a research potential call

The overall objective is to develop regional metrological capacity in thermal metrology, including a review of existing capabilities and needs, validation of existing systems and, if required, development of new systems.

The specific objectives are:

1. To develop traceable measurement capabilities in contact high temperature measurements in the range between 960 °C and 1084 °C for NMIs and DIs seeking to establish a research capability in this field.
2. To develop traceable measurement capabilities in non-contact thermometry in the range from 300 °C to the 2000 °C for NMIs and DIs seeking to establish a research capability in this field.
3. To develop traceable measurement capabilities in the field of thermophysical properties for NMIs and DIs seeking to establish a research capability in this field. Target parameters and an explanation of their selection should be included.
4. For each emerging NMI, to develop an individual strategy for the long-term development of their research capability in thermal measurements including priorities for collaborations with the research community in their 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). They should also develop a strategy for offering calibration services from the established facilities to their own country and neighbouring countries. Individual strategies 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 this field is developed for Europe as a whole.

Note that the final objective in each of the examples above relates to the work to be done in the Creating Impact work package of a JRP. Such an objective will be included in the SRTs published by EURAMET and is required in any proposal at Stage 2. At Stage 1, submitters are not required to include such objectives, but are encouraged to do so, to guide EURAMET in the style of objective to be set in the SRT.

3.9 Section C: Background

Section C is typically 1 page with a maximum of 1.5 pages.

3.10 Section C.1: Justification of need for the proposed objectives

Briefly describe the need for the proposed research, explaining the problem rather than the solution, and the reasons for this need. Consider the needs of end-users, stakeholders including policy makers, existing markets, and potential markets.

Proposers should support the need with quoted and referenced authoritative external sources; e.g. European Directives, documentary standards bodies, published European or government policy, industrial bodies, key international organisations, market analysis or relevant documents or studies. All documents needed to develop the proposed topic must be referenced and publicly available to potential Consortia at Stage 2 of the Call (but SHOULD NOT be submitted with the PRT). Proposers should focus on existing evidence for the need or idea rather than specific support obtained for the PRT.

Although supplementary documentation cannot be submitted at stage 1, call scopes may require certain specific evidence of the need to be detailed in the PRT. For example, at stage 1 of a pre- or co-normative call,

proposers should clearly reference the measurement needs identified within strategic documents published by the Standards Developing Organisation (SDO) Technical Committee(s) or Working Group(s) (e.g. in the Business Plans or Work Programmes), reference any relevant documents on the “orientation” area on the EMPIR call website, or reference a letter signed by the convenor of the respective TC/WG.

3.11 Section C.2: Current state-of-the-art

Describe the current state-of-the-art relating to the need, ensuring you address the stakeholders and potential beneficiaries identified in section C1. Clearly explain why the current state-of-the-art is incapable of addressing the need(s) identified.

3.12 Section D: Potential Impact / Benefits

Section D is typically 1 page with a maximum of 1.5 pages.

3.13 Section D.1: Impact of the proposed research

So that EURAMET can assess the relative priority of PRTs please clearly state the potential impact and benefits of successfully addressing the proposed topic. Describe the impact scientifically, metrologically and in socio-economic terms (appropriate for the Call). The magnitude of the potential impact should also be properly estimated.

Where applicable, the potential benefits relating to the following areas should be detailed; health, safety, the environment, innovation, documentary standards, infrastructure, employment, etc. In responding to a Research Potential Call, the existing capacity of potential beneficiaries (both staff and equipment² – either already available or in the process of being acquired), and plans for the sustainability of the research capacity to be developed, should be included in this section.

3.14 Section D.2: Impact at the European level

Explain why the proposed research will benefit from being carried out at the European level. The European added value of the proposed research should be identified, including;

- European contribution to global challenges,
- Protection of the European citizen or market,
- An improved system of metrology and improved underpinning infrastructure,
- Support for European standardisation, Protection of products and enterprises against defrauders,
- Security or improvement of essential European infrastructure,
- Secondary effects such as economic or structural benefits, innovation or competitiveness.

PLEASE NOTE that if the proposed research addresses European standardisation, please identify the relevant standardisation body, working group(s) and standards, and indicate whether the activity has been mandated.

4 Submitting the PRT

4.1 When to submit the PRT

All PRT submissions must be received by the deadline specified on <https://msu.euramet.org/>

4.2 Checks before submitting the PRT

Before submitting the PRT please ensure that:

- The PRT falls within the published Call Scope
- All sections of [Template 2: PRT Template](#) have been completed (according to the template used)

² Please note that EMPIR does not fund the purchase of capital equipment.

- The submission is not a proposal, and no information on potential consortia and/or resources is included
- Sections B to D do not exceed 4 pages in total (of typical text size Arial 10 pt)
- The headers and footers are unchanged from [Template 2: PRT Template](#)
- All instructional text and the document control page from [Template 2: PRT Template](#) are deleted
- The PRT is a Microsoft Word document of less than 0.5 MB

4.3 How to submit the PRT

All PRTs must be submitted to EURAMET using the web-based form and attaching the PRT. Online submission is at <https://msu.euramet.org/>

Submitted PRTs may be revised by submitting new versions up until the deadline, in this case please ensure that the PRT has a new version number. Please also ensure that you receive an acknowledgment email for each submission and/or resubmission.

The information requested during the online submission includes;

- The submitters details; name, gender, organisation and country (this is required by the European Commission and EURAMET for statistical purposes and will not affect the prioritisation of the submitted PRT)
- Identification whether the submitter is from an NMI³ (National Metrology Institute), DI⁴ (Designated Institute) or other organisation or individual
- Title of the PRT and abstract (as given in the submitted PRT)
- Identification of the relevant TP and classification⁵ of the PRT
- Declaration and details of any similar proposals/projects submitted or funded by either EURAMET or the European Union
- Declaration that the submitter acknowledges that any supporting documentation based on the PRT (or part thereof) is owned by and may be amended or combined by EURAMET, will not identify the original submitter, and will be made publicly available

Having completed this information, please attach the PRT and submit it. If your submission is successful you will receive online confirmation and automated email acknowledgment.

4.4 Getting help with your PRT submission

The [EURAMET Management Support Unit \(MSU\)](#) can be contacted by e-mail on EMPIR.msu@euramet.org or by phone on +44 20 8943 6666. Please note that the EMPIR helpdesk is NOT staffed at weekends.

³ National Metrology Institute internationally recognised and registered as such by the BIPM and EURAMET e.V.

⁴ Specialist institutes responsible for certain national standards and associated services that are not covered by the activities of the National Metrology Institutes, but where the institute is formally registered with the BIPM as a designated institute under the CIPM Mutual Recognition Arrangement for those technical areas and/or recognised by EURAMET e.V. as part of the national measurement system for specific and defined areas.

⁵ To assist EURAMET in the early stages of reviewing the Potential Research Topics (PRTs) submitted at Stage 1, the submitter is asked to associate their PRT with a "Classification" from the list published on the call site. This is only used to make it more likely that similar topics are reviewed together.