

Guidance for Submitting a Potential Research Topic (PRT) to the 2010 Call of the European Metrology Research Programme (EMRP)

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Abbreviations used:

EMRP = European Metrology Research Programme,
EMRP-MSU = EMRP Management Support Unit
FP7 = 7th Framework Programme

NMI = National Measurement Institutes, PRT= Potential Research Topic
DI = Designated Institutes SRT = Selected Research Topic (of the Call)
TP= Targeted Programme JRP = Joint Research Project

Need more help?

If you require further help or guidance after reading this document please contact the EMRP-MSU helpline.

emrpA169@npl.co.uk or telephone: +44 20 8943 6666.

1 BACKGROUND TO THE CALL

The European Metrology Research Programme (EMRP) aims, through European integration, 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 three-stage process that enables the EMRP (funded under Article 169 of the European Treaty) 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.

1.1 Stage 1 Call for PRTs (This Call)

All interested parties can submit their measurement related needs to EURAMET, provided they are within an area covered by the relevant Call. Details of the measurement challenge, opportunity or problem must be presented on the **Potential Research Topic** template. (Note that project proposals are submitted at Stage 2 of the Call and must **not** to be made now).

Each submission should identify a single topic only, though this may be quite broad and include connected elements. Any additional unrelated topic/s should be proposed in a separate submission.

The EMRP Committee (or a dedicated sub-committee) will prioritise the ideas received by EURAMET that are within scope. Prioritisation will take account of the EMRP programme priorities, objectives, potential impact and available budget, and the ability of the metrology community to respond effectively. The EMRP Committee may choose to merge, split or amend topics, in order to create a number of **Selected Research Topics (SRTs)** that address the highest priority needs. Each SRT is accompanied by a **supporting document** based on the original PRT ideas submitted to this Call, the supporting document will not identify the original submitter, and will be published on the website www.emrponline.eu

Please note that by submitting a PRT to this call you acknowledge that any eventual **supporting document** is owned by, and may be amended, or combined by EURAMET.

1.2 Stage 2: Call for Joint Research Projects (Call opens 21 June 2010)

The SRTs will be published in the Stage 2 Call for Joint Research Project (JRP) proposals, to enable eligible, interested parties to prepare and target their proposals in competition.

All eligible parties submitting in response to Stage 2 will be treated equally, regardless of any input to Stage 1.

Stage 2 will be the subject of a specific guidance note but the key elements of this later stage may be of interest to those proposing topics and are described below:

- Proposed JRPs will be subject to independent expert evaluation.
- The eventually selected and contracted JRPs will be delivered primarily by the publicly funded National Metrology Institutes and Designated Institutes (who are responsible for certain national standards and associated services that are not covered by the activities of the National Metrology Institutes) from the countries participating in the Article 169 based EMRP.
- Where appropriate external organisations are eligible to participate in the JRPs through unfunded participation as a JRP partner, or work with the JRP more loosely as a “collaborator”.
- In addition individual researchers, including those from the wider European research community, are eligible to participate through a limited number of funded researcher grants.

1.3 Stage 3: Researcher Grants

A further Call is published for Researcher Grant schemes.

2 ELIGIBILITY FOR SUBMITTING A PRT

2.1 *Who is Eligible to Submit Ideas?*

The possibility to suggest ideas in this “Call for Potential Research Topics” stage is open to all parties from any country worldwide.

End users of the metrology system in Europe and other stakeholders beyond the metrology research community such as industry, regulators, policy makers and standardisation bodies are particularly encouraged to submit their relevant and in-scope needs and ideas.

Please note that where ideas have been discussed within a stakeholder group, this should be stated specifically in the “Section E3: Support of Stakeholder Groups”, and multiple authorship can be listed in the “Co-authors” section.

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*

- All submissions must be in English
- The PRT must be for activities within the Call Scope
- The PRT must follow the template provided on the Call website.
- The PRT must be a Microsoft Word document of less than 1 MB
- The PRT must not exceed 7 pages (of typical text size Arial 11pt or similar)
- The proposed research is not already funded by (or in process of receiving funds) from the European Union

Submissions that do not meet these eligibility criteria, or which have been superseded, will not be reviewed, and therefore will not have the possibility of being included as part of an SRT or supporting document in the Stage 2 Call.

3 COMPLETING THE PRT TEMPLATE

Each PRT submission should identify a single topic only, though this may be quite broad and include connected elements. Any additional unrelated topic/s should be proposed in a separate submission.

A submitted **PRT** has to fulfil two requirements:

1. To provide sufficient information to enable EURAMET to evaluate the merit and priority of the proposed topic. Proposers should note that the decision of whether to include the topic in the dedicated call for JRP proposals will be primarily based on the information provided in these PRTs, particularly;
 - a. Has a clearly specified scientific or technological challenge / problem / opportunity been identified? Is this justified? What is the scale of this need?
 - b. What is the likelihood of the European metrology research community effectively addressing the challenge / problem / opportunity taking due account of the progress required beyond the current state of the art?
 - c. How significant would the impact be for stakeholders if the proposed topic were successfully addressed?
2. Be suitable for incorporation into the supporting document of the Stage 2 of the Call. This means that:
 - a. The sections B, C, D and E must remain anonymous (i.e. no references to the submitter, submitters organisation, co-authors and/or affiliations),
 - b. The text should be clear and concise.

3.1 Naming your PRT

The PRT should ideally be named using the format:

- File identifier for TP Environment: ENV FAMILYNAME v1.doc
- File identifier for TP Industry: IND FAMILYNAME v1.doc

The PRT must be a Microsoft word document of less than 1MB (note that pdfs are not acceptable)

3.2 Section A1 Targeted Programme (TP)

Select the TP and classification, which is appropriate for this submission. Delete all inappropriate text.

The classifications of each TP are given in ANNEX 1: Classifications for TPs Industry & Environment

3.3 Section A2 Details of Submitter

This section is for PRT Call administrative purposes only and will be removed by the EMRP-MSU prior to the creation of “supporting documents”. Note that all other sections must be anonymous and contain no reference to the submitter/s

Name of Submitter: The name of the submitting person in the form *Firstname FAMILYNAME*.

Organisation/ affiliation: The full name of the organisation and/or their affiliation (a shortened form may be used if easily recognisable)

Country: A single country must be selected. This is usually the country of the organisation, or where the submitter is mainly based.

3.4 Section A3 Optional Details of Co-Authors

This section is for PRT Call administrative purposes only and will be removed by the EMRP-MSU prior to the creation of “supporting documents”. Note that all other sections must be anonymous and contain no reference to the submitter/s

Co-Author: These can be individual or organisations, and should be added in the form *Firstname FAMILYNAME*.

Organisation/ affiliation: The full name of the organisation and/or their affiliation (a shortened form may be used if easily recognisable)

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, Worldwide, Asia, etc

3.5 Section B: Topic Description

Section B is typically 1 page with a maximum of 2 pages.

3.6 Section B1: Title

Chose a self-explanatory title, up to 150 characters including spaces. This must be copied into the online submission form.

3.7 Section B2: Abstract

This abstract should provide a stand alone summary of the proposed research topic, up to 750 characters including spaces. This must be copied into the online submission form.

3.8 Section B3: Conformity with the Work Programme

The topic must be related to the EMRP Outline 2008 or other reference documents identified in the Call.

The activity(ies) to which the proposed topic is linked should be clearly indicated and referenced.

3.9 Section B4: Keywords

Chose 5 to 10 keywords linked to the proposed topic, these should reflect both the objectives and technical/scientific fields.

3.10 Section B5: Scientific and Technological Objectives

The objectives should be stated wherever possible in quantitative terms. These should be very clear both to enable a proper and fair prioritisation of the “Proposed Research Topic” and to provide an appropriate basis for the evaluation of any eventual project proposals at Stage 2. Thus, vague statements, which could lead to either a misinterpretation of the requirements or to an inappropriate work plan, should be avoided.

3.11 Section C1: 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 leading to this need. Consider the needs of end-users, existing markets, and potential markets.

Support your claims with quoted and referenced authoritative 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 available to all Consortia who wish to propose a Joint Research Project at Stage 2 of the Call (but should not be submitted with the PRT).

Focus on existing evidence for the need or idea (that can be quoted and referenced) rather than support for the PRT. If this PRT has the support of a community (i.e. support for this specific submission), for example from a stakeholder group or a EURAMET Technical Committee, include this in section E3 and not here.

3.12 Section C2: Current State of the Art

Describe the current state-of-the-art relating to the need, ensuring you address the full vista of sectors and potential beneficiaries identified in section C1 and clearly explain why the current state of the art is incapable of addressing the needs identified.

3.13 Section D1: Impact of the Proposed Research

So that EURAMET can assess the relative priority of PRT we ask you to clearly state the potential impact of successfully addressing your proposed topic. I.e. if your proposed research topic was successfully completed, what benefits would this bring? Remember the impact is the effect of the project results on the wider world – not the project result themselves. See the example below (numerical figures are made up to illustrate the example)

If your PRT is for the “Industry” Targeted Programme, you must state the sector(s) impacted (using the list in Annex 2) and link each of the stated impact/benefits to at least one specific sector.

Describe the impact scientifically, metrologically and in socio-economic terms (appropriate for the Call area). The magnitude of the foreseen impact should be properly estimated.

Where applicable, the potential benefits relating to the following areas should be detailed; health, safety, the environment, employment, and documentary standards

Weak example	Improved example	Full Example in 3 areas (note numbers are made up)
<p>Problem: Measurement of small structures such as fuel injectors of combustion engines with a diameter <0.1 mm</p> <p>Solution: Development of an opto-tactile micro-sensor – spherical feeler element located at the end of a glass fibre – position is recorded by a CCD camera</p>	<p>Currently coordinate measurement machines cannot accurately measure small structures such as fuel injectors of combustion engines with diameters of less than 0.1 mm. This leads to variation in the nozzle size and therefore the fuel burning efficiency cannot be optimised. The development of a novel micro-sensor using optical fibre will facilitate more accurate machining of fuel injectors. Currently the fuel efficiency of two nominally identical engines can vary by over 10 % due largely to the random variation in fuel injector nozzle sizes, by optimising this process the average engine fuel efficiency will increase by 5 %</p>	<p>Environmental impact: Currently the fuel efficiency of two nominally identical engines can vary by over 10 % due largely to the random variation in fuel injector nozzle sizes, by optimising this process the average engine fuel efficiency will increase by 5 %. If all European cars were fitted with optimised injector nozzles, carbon emissions would be reduced by 2 %</p> <p>Social impact: Asthma affects 2 % of the European population and has been linked to vehicle emissions. A new technique to optimise the nozzle shape used in fuel-injection engines claims to reduce vehicle fuel consumption by 5 %, which, if successful could reduce city pollution by 5 %. Projections suggest this would reduce serious asthma attacks by around 50 000 per year, saving health services around 50 M€ a year.</p> <p>Financial Impact: A new technique to optimise the nozzle shape used in fuel-injection engines claims to reduce vehicle fuel consumption by 5 %. If all vehicles across Europe were fitted with optimised nozzles the saving would reach around 8 B€</p>
<p><i>This does not describe why this research is needed, or the impact of achieving the aim</i></p>	<p><i>This describes exactly why the research is needed & the benefit it brings (improved fuel burning efficiency). However this still doesn't explain the impact on the general population. This would be suitable for a specialist reader</i></p>	<p><i>The impact of the single scientific project has been assessed for 3 areas (environmental social and financial) there are clearly further impact statements that could be used here too.</i></p>

Table 1: Example of Impact Statements

3.14 Section D2: Impact at the European Level

Reasons should be given as to why the activity will benefit from being carried out at the European level. The European added-value of the proposed research activities should be identified, including;

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

3.15 Section E1: Time-Scale (if applicable)

For certain topics, it may only be meaningful to proceed if the solutions are available by a pre-defined date. If this is the case, the date and the reason for the timeframe should be indicated. Any requirements must be realistic and should take into account the period of time needed to complete the call, selection and negotiation procedures as well as the work.

3.16 Section E2: Additional Requirements (if applicable)

For certain topics, there may be other requirements that must be met if the output is to be meaningful. If this is the case, the reason and requirement should be stated. It should be noted that unjustified restrictions will not be accepted.

3.17 Section E3: Support of Stakeholder Groups (if applicable)

If the PRT has multiple authors include a generic description in this section, for example: "This submission has been jointly authored by a group of 8 NMI and DI laboratories" but do not name the stakeholders here list them by name in "Section A2 Details of Submitter/s".

It is admissible to demonstrate wider support, for example: "This submission has been discussed within and is supported by, e.g. CEN WG [X]", / EURAMET TC [Y] / [name of body, say a European trade association]" etc. Note that individual companies should NOT be named, but statements such as "This submission has been discussed with and is supported by 5 major gas distributors in Europe" are acceptable.

By submitting the PRT the submitter declares that any such claims of wider support are true statements of fact.

Please note that where ideas have been discussed within a stakeholder group, 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.

4 SUBMITTING YOUR PRT

4.1 *When to Submit your PRT*

All PRTs must be received by the deadline of **Sunday 28 March 2010, 23:59 CET (Central European Time)**

The EMRP helpline is not manned at weekends, in particular Saturday 27 March and Sunday 28 March. Therefore you may want to submit by the end of Friday 26th March 5pm GMT.

4.2 *How to Submit your PRT*

All PRTs must be submitted to EURAMET using our web-based form, and attaching your PRT. The online submission area is found here: www.emrponline.eu

Submitted PRTs may be revised by submitting new versions up until the deadline, please ensure that the PRT has a new version number.

Ensure that you receive an acknowledgment email for every submission and resubmission.

4.2.1 **Completing the On-Line Submission Form**

The information requested during the on-line submission includes;

- Submitting person's details; name, sex, organisation, country (this is required by the European Commission for statistical purposes and will not affect whether or not the PRT is taken forward to Stage 2 of the Call)
- Identification as to whether the submitter is from an NMI¹ (National Metrology Institute), DI² (Designated Institute) or other (organisation or individual).
- Title of the PRT, and short abstract (copied from the PRT template)
- Identification of the relevant TP and classification of the PRT (from Annex 1)
- Declaration and details of any similar proposals/projects submitted to or funded by either EURAMET or the European Commission (excluding this current EMRP Call)
- Declaration that the submitter acknowledges that any eventual supporting document 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 available to all.

Having completed this information, you will then be able to attach your PRT (word document) and submit it.

If your submission is successful you will receive confirmation on-line, and an automated acknowledgment email.

4.3 *Getting Help with your PRT Submission*

The EMRP helpline can be contacted by e-mail on emrpa169@npl.co.uk or by phone on +44 20 8943 6666.

The EMRP helpline is not manned at weekends, in particular Saturday 27 March and Sunday 28 March. Therefore you may want to submit by the end of Friday 26th March 5pm GMT.

¹ National Metrology Institute internationally recognised and registered as such by the BIPM and EURAMET e.V.

² 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 recognized by EURAMET e.V. as part of the national measurement system for specific and defined areas.

5 DISCLAIMER

Submission of a Potential Research Topic does not bind the submitter nor EURAMET e.V. to further negotiations, and EURAMET e.V. reserves the right to cancel all or part of the Call.

EURAMET e.V. will make no payment and no reimbursement of expenses related to the preparation of any Potential Research Topics or the preparation of any subsequent Joint Research Projects.

6 ANNEX 1: Classifications for TPs Industry & Environment

TP Industry	TP Environment
<ul style="list-style-type: none"> • Dimensional metrology • Temperature and related quantities metrology • Electrical and magnetic metrology, time and frequency metrology • Ionizing radiation metrology (excluding energy, environmental and health) • Chemical metrology (excluding energy, environmental and health) • Mass and related quantities and flow metrology • Optical and acoustics metrology • Metrology for manufacturing technologies and process control <p>or</p> <ul style="list-style-type: none"> • Other 	<p>The call can be divided in geographically <i>localised</i> environmental challenges such as related to:</p> <ul style="list-style-type: none"> • Pollution of water, air and soil • Waste management (including radioactive waste) • Radiation measurement and protection (including electromagnetic and ionising radiation, and acoustic noise) <p>and <i>global</i> metrological challenges for climate control such as related to:</p> <ul style="list-style-type: none"> • Atmospheric parameters including constituents, contaminations and transport properties • Emission control including measurement of gases with effect on the climate and related to EU emission trading schemes; CO₂ sequestration • Oceanic parameters including pH, temperature, density and flow profiles • Remote sensing • On-line sensors and environment monitoring. <p>or</p> <ul style="list-style-type: none"> • Other

Table 2: Classifications for Targeted Programmes of Industry & Environment

7 ANNEX 2: Potential Impact Sectors Relating to TP Industry

Sector information to be quoted in the “Potential Impact Section” relating to Industry TP only

1	Mechanical engineering and industry	10	Mining industry
2	Electrical engineering and industry	11	Energy industry
3	Metallurgical industry	12	Food industry
4	Process engineering and production technologies	13	Forest industry
5	Communication technologies and industry	14	Textile and leather industry
6	Automotive industry	15	Glass industry
7	Aerospace industry	16	Building industry
8	Chemical industry	17	Traffic
9	Pharmaceutical and medical industry	18	Safety engineering and testing

Table 3: Potential Impact Sectors relating to TP Industry