EMPIR – Introduction to the 2017 Call

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EMPIR

The EMPIR initiative is co-funded by the European Union's Horizon 2020 research and innovation programme and the EMPIR Participating States

Contents

- EURAMET and EMPIR
- EMPIR call process
- Draft 2017 scopes
- Writing a PRT
- Rules for participation

WARNING

- This presentation is not a substitute for reading the guides at msu.euramet.org/downloads…
  - Guide 1: Admissibility and eligibility
  - Guide 2: How to write a PRT
  - Guide 4: How to write a JRP
  - Guide 5: Project Administrative Data
  - Guide 6: Evaluation
  - Guide 7: How to write a SIP
- Or studying the Annotated Model Grant Agreement

EURAMET is...

- The gateway to Europe's integrated metrology infrastructure
- It facilitates access to European measurement expertise, and underpins the delivery of globally competitive, high impact metrology
- It ensures Europe maintains its global reputation for excellence in measurement science
- It raises awareness of the value of measurement by demonstrating the impact of metrology on society's grand challenges

European Association of National Metrology Institutes

Members:
37 European NMIs
28 of them are participating in EMPIR

Associates:
76 DIs (Designated Institutes)

Liaison Organisations:
4 RMOs & BIPM
3 NMIs beyond Europe
KDM (Kosovo under UNSCR 1244)
6 regional/international Organisations

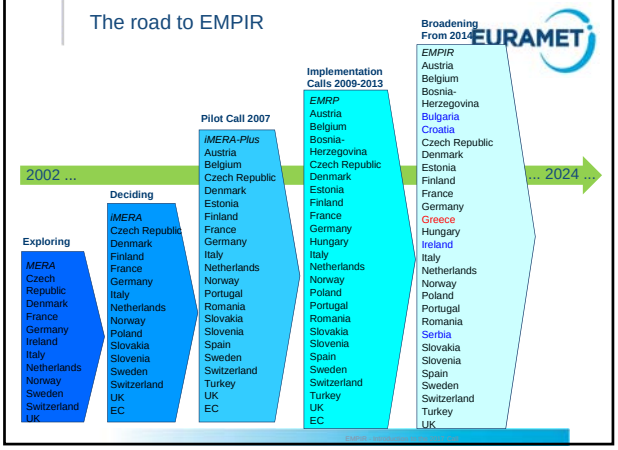
What is EMPIR?

- It is about improving measurement to drive innovation and competitiveness.
- It enables European metrology institutes, industrial organisations and academia to collaborate on joint research projects.
- It is implemented by EURAMET (European Association of National Metrology Institutes).

How does it work?

- It is based on Article 185 of the Lisbon Treaty.
- It is jointly funded by the EMPIR participating countries and the European Union and has a budget of approximately 600 M€ over seven years.

The road to EMPIR



EMRP inputs

- Projects selected 119
- JRP funding contracted 367 968 461 €
- RG funding contracted 39 544 371 €
- Funded years in JRPs 2116
- Unfunded years in JRPs 115
- Funded years in RG 494
- Total participations 2321

EMPIR inputs

- Projects selected 60
- JRP funding contracted 129 414 021 €
- EU Contribution 62 977 854 €
- National contribution 58 659 750 €
- Self contribution 7 776 418 €
- Years effort 740
- Total participations 576

Outputs

- Excellent science – focussed on society's needs
  - At one extreme the application of ground breaking physics to fundamental metrology
  - At the other, direct application to measurements that enable regulation
  - In-between, measurements that promote innovation

EMRP outputs

Conference presentations /posters	4915
Other dissemination activities	2155
Peer-reviewed publications	1432
Co-authored peer-reviewed publications (of the above)	*368*
Inputs to standards committees	1135
No. of unique standards committees engaged with (of the above)	*486*
Training activities (internal)	463
Training activities (external)	557
Patent applications	36
Total number of unique outputs	**10693**

EMPIR objectives

Boost industrial uptake and improve standardisation

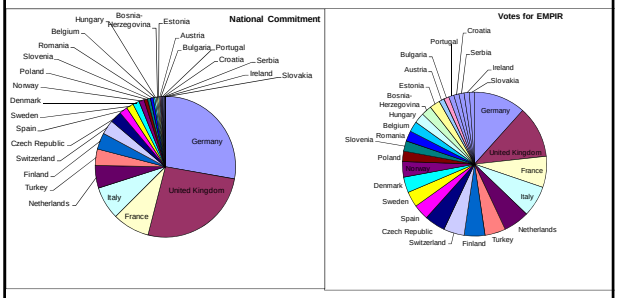
- At least 400 M€ of European turnover from new or significantly improved products and services that can be attributed to the research activities of EMPIR and its predecessors
- At least 60 % of CEN/CENELEC /ISO/IEC Technical Committees and equivalent standardisation bodies with potential to benefit directly from EMPIR projects to engage with the programme

EMPIR objectives

Underpin a coherent, sustainable and integrated European metrology landscape to fully exploit the EU potential

- Maintain a level of at least 50 % of dedicated national metrology research investments in Europe being coordinated or influenced via the programme
- All European NMIs and their designated institutes to interact with the programme
- European leadership in at least 20 % of international metrology committees

National Commitment (317 M€)



EMPIR projects

- Two types of project under EMPIR that receive funding from the Commission pot
  - Joint Research Projects (JRPs)
  - Support for Impact Projects (SIPs)
- Mobility Grants are funded from the member states cash and are just for employees of European NMIs and DIs.

EMPIR indicative call plan

- Long-term orientation, yet with some room for flexibility at annual updates
- Three-year call intervals for some themes to enable follow-on projects
- Annual calls for “support for impact” actions and standardisation related research (except 2014)
- Calls for research potential focus on the first four years, with the aim that RPT participants then participate in the wider JRPs eg SIB, IND in the later part of EMPIR

Year	Call
2014	Industry JRPs
	Research Potential JRPs
	Support for Impact
2015	Health JRPs
	SI Broader Scope (SI) JRPs
	Pre-normative JRPs
	Research Potential JRPs
	SIPs
2016	Environment (ENV) JRPs
	Energy (ENG) JRPs
	Pre-normative JRPs
	Research potential JRPs
	SIPs
2017	Fundamental JRPs
	Industry JRPs
	Pre-normative JRPs
	Research Potential JRPs
	SIPs
2018	SI JRPs
	Health JRPs
	Pre-normative JRPs
	SIPs
2019	ENV JRPs
	ENG JRPs
	Pre-normative JRPs
	SIPs
2020	Industry JRPs
	Fundamental JRPs
	Pre-normative JRPs

Call process

IND Scope 2017

- The overall strategic aim of the Targeted Programme (TP) “Metrology for Industry” is to develop measurement methods and techniques for industrial applications. It is aimed at driving innovation in industrial production and facilitating new or significantly improved products through exploiting knowledge in the European measurement institutes. The innovations shall improve **the competitiveness and sustainability**, and enable the digitisation of, European industry and shall lead to **increased economic turn-over**.

FUN Scope 2017

- Research at the frontiers of measurement science is critical to major advances in science, and vice-versa, and the take-up of excellent science from outside the NMIs and DIs is a key element in the long-term development of metrological capabilities.
- The call scope of TP fundamental scientific metrology:
  - aims at **excellent science exploring new techniques** or methods for metrology and novel primary measurement standards, and
  - shall bring together the best scientists in Europe and beyond, whilst exploiting the unique capabilities of the National Metrology Institutes and Designated Institutes.

NRM Scope 2017

- The overall strategic aim of the Targeted Programme (TP) “Pre- and co-normative research” is to develop **metrological methods and techniques required for standardisation**.
- EURAMET encourages proposals that include representatives from industry, regulators and standardisation bodies for their active participation in the projects, specifically to ensure that the project outputs are **acknowledged by the SDO TC/WG**.

RPT Scope 2017

- EURAMET intends that EMPIR will develop a balanced and integrated metrology system in the participating states. For those states with limited metrology research capability, “Research Potential” projects should enable them to **develop their scientific and technical research capabilities in areas of national and regional strategic priority**.

Guide 2

PRT Objectives - IND

- 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.

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.

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.

Impact of the proposed research

- 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.
- In responding to a Research Potential Call, the existing capacity of potential beneficiaries (both staff and equipment – 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.

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.

PRT standard reasons for non-selection

- Poor fit with scope
- Lack of critical mass
- Limited metrology
- Limited research
- Lack of European dimension
- Limited progress beyond the state of the art
- Limited rationale
- Limited or unclear objectives
- Limited stakeholder support
- Limited Standards Developing Organisation support
- Poor standardisation links

Questions?

SIP Scope 2017

…sometimes an opportunity for further significant exploitation and stakeholder uptake occurs after the research is complete… Such further exploitation may include:

- An identifiable contribution to a **documentary standard** in response to a request from a Technical Committee or Working Group of a European or International standards developing organisation.
- An identifiable contribution to a **regulatory process** in response to a request from a European or International regulatory body.

SIP Scope 2017

- Transfer of specific technology or knowledge to a commercial business in response to a request to progress their innovation activities (e.g. product or process development).

A key requirement is an external request for the work from an organisation ready to take up the outputs of the project and move them on to impact outside the metrology community. The organisation making this request is called the "**Primary Supporter**". Without such a willing recipient expressing support for the proposal and identifying the actions they will take with the outputs of the project, the proposal would have no evidence of the route to impact and should not be funded.

Participation in EMPIR

Four types of participant in EMPIR projects (see Guide 1)

Internal Funded Partner(s)	• EURAMET NMIs and DIs (within their area of designation) from countries that have made a financial contribution to EMPIR (see List 1a)
External Funded Partner(s)	• All other legal entities established in: Member States, Overseas Countries and Territories (OCT) linked to MS, countries automatically eligible for Horizon 2020 funding, countries associated to Horizon 2020, including non-EMPIR NMIs and DIs plus EMPIR DIs participating outside their field of designation (see List 1b)
Unfunded Partner(s)	• Any legal entity whose participation adds benefit to the project. • Legal entities that are eligible to participate as 'internal' or 'external' may participate as an unfunded partner
Linked Third Party(s)	• Very rare. • Please speak to MSU first.

External participation

- In EMRP, 40 M€ (~20% of the EU contribution) was reserved for the participation of non NMI/DIs through researcher grants.
- In EMPIR, 90 M€ (30 % of the EU contribution) is intended for the participation of non NMI/DIs as External Funded Partners.
- Legal entities may choose to participate as Unfunded Partners and EURAMET would consider this as particularly appropriate where an industrial partner would receive a significant benefit from its participation.
- '20XX Call budget and features' indicates the anticipated external participation etc for each TP.

Indirect costs – contribution to overhead

- Organisations no longer funded at ~44 % of the total eligible costs, including overhead.
  - Under H2020 auditors are no longer interested in "overheads".
- Eligible indirect costs are fixed
  - 5 % for Internal Funded Partners
  - 25 % (H2020 standard rate) for other partners

Questions?