

NORMATIVE EMPIR CALL 2019

CEN-CENELEC-STAIR EMPIR Webinar

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- EMPIR : meeting new challenges
- The Targeted Programmes
- The process
- Objectives of normative projects
- What topics in a normative project? What topics are not relevant?
- Participating in normative projects – The competition
- Timeline Call 2019 Normative
- Running normative projects

EMPIR : meeting new challenges



EMPIR European Metrology Program for Innovation and Research

In order to meet new measurements challenges with decreasing budgets, more cooperation is needed.

➡ special Article 185 EU funding for metrology research



- 2014-2020 / 600M€
- Integrated part of H2020
- Funding of **Joint Research Projects JRP** = collaboration of European metrology institutes, industrial organizations, research organizations, standardization, regulators.
- Increased focus: to improve links with standardization (~ 70M€)

The Targeted Programmes

- The following priority areas, known as Targeted Programmes (TPs) are of interest for CEN/CENELEC : TPs on Health, Energy, Environment, Industry, Networks and Pre&Co-normative TPs.
- There will be every year a call for Pre-Normative Joint Research Projects, but standardization also relates to the other TPs.
- CEN and CENELEC TCs are given the possibility to influence the calls under the TPs.



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
	SIPs

The process



➤ A two-stage process

- | | |
|--|---------------------|
| ▪ <u>Stage 1</u> : Submission of ideas
PRT = Potential Research Topic | Jan – Feb |
| ▪ <u>Stage 2</u> : Call for proposals
SRT = Selected Research Topic | Apr – Jun |
| ▪ Consortia write the project proposals
addressing the SRTs | Jun – Sept |
| ▪ Review of proposals | Nov |
| ▪ Start of work | Year+1/1st Semester |



- CEN and CENELEC TCs can submit a metrology research need that assist their standardisation : this research need can be taken up in a PRT.

The Normative Joint Research Projects (JRP) - Overall objectives

The overall strategic aim* of the Normative JRPs is:

- *to develop metrological methods and techniques required for standardisation, regulation and conformity assessment*
- enable collaborative research going beyond the state of art
- generate benefit for European and International Standards Organisations by exploiting the expertise and unique capabilities of the metrology institutes.

* See the [Call scope](#) published before the call opens.

The Normative Joint Research Projects (JRP) - Overall objectives

- Proposed topics should address :
 1. Specific documented demands of **European and International Standards Organizations** for measurements research, in any area.
 - The demand for the research shall be demonstrated by clear reference to the measurement needs with strategic documents published by the TC/WG (e.g in the business plan or work programme) or by a letter signed by the convenor of the TC/WG.
 - Normative projects are expected to develop research activities to contribute to the actual standardization work or to feed any future standardization work.
 2. Specific documented demands of **European Regulators and Conformity Assessment Bodies** for metrological research in any area.
- EURAMET encourages proposals that include representatives from industry, regulators and standardization bodies for their active participation in the projects.

The Normative Joint Research Projects (JRP)

Partners and budget

A Normative Joint Research Project :

- must include at least 3 National Metrology Institutes or Designated Institutes from 3 different countries
- must be led by a metrologist coordinator
- has a maximum duration of 3 years
- includes external partners (funded or unfunded): universities, industry, standardization, regulators and collaborators
- establishes a stakeholder group
- should have a total budget of 1 M€ maximum in the 2019 NRM EMPIR call with around 30% dedicated to the external partners*.

* *See the [Call 2019 Budget and features published before the call opens](#).*

What topics in a normative project?



JRP are metrology research projects : they have to include topics dealing with **traceable measurements**, as for example :

- The development and validation of traceable measurement methods for measuring parameters
- The determination of all relevant parameters to design an accurate, robust and stable measuring instrument to elaborate a standardization document
- The development of a new reference materials in close collaboration with instruments manufacturers
- The development of a new calibration method
- The development of metrological improvements for standardized test methods
- The development of calculation uncertainties

What topics are not relevant in a normative project?



- Topics that **do not deal with traceable measurements** (will not be selected at the first PRT stage)
- Topics that address **specific needs of a single industrial** as JRPs are collaborative research projects.
- Topics that are **limited to a national concern** as JRPs are expected to have an European dimension.
- **Urgent topics** that need to be finalized within 3 years : EMPIR process required 18 months between the knowledge of the initial problem (PRT) and the start of JRP work (may be not be suitable for some industrial users).
- Topics that **do no need research**, for example restricted to a simple interlaboratory survey.

Participating in normative projects



Stage 1 : Preparing the NRM PRT - Potential Research Topic

- The PRT template* (5 pages maximum) identifies the submitters, describes the scientific objectives, focus on the stakeholder needs and the potential impact of the proposed research.

* See [Guide 2](https://msu.euramet.org/calls.html) and [2018 PRT Template 2](https://msu.euramet.org/calls.html) at <https://msu.euramet.org/calls.html>

- **CEN-CENELEC co-authoring the PRT or submitting their need in the CEN STAIR consultation helps its selection.** It does not imply any commitment of submitters at this stage, even when the PRT is selected.
- Identifying at least 3 metrology institutes interested to take part to the research topic and to allocate a possible budget helps the next step but is not mandatory.
- Outcomes of the NRM Calls 2015 to 2018 : *from 11 to 15 NRM SRT published*

	NRM call 2015	NRM call 2016	NRM call 2017	NRM call 2018
Indicative initial budget	2,3 M€	5,7 M€	4,8 M€	5 M€
Stage 1				
Number of NRM PRT submitted	31	30	16	22
Stage 2				
Number of NRM SRT selected	12	15	11	14

Participating in normative projects



Stage 2 : Preparing the project proposal addressing the Selected Research Topic

- Forming the consortium, writing and costing the proposal :
Partners and Stakeholders decide how much they want to be involved and contribute to the works :
 - Have valid contributions and deliver tasks that can be funded.
As example, standardization representatives can be leader of the impact Work Package. Funded and unfunded partners sign an agreement with EURAMET.
 - Offer guidance and support without any tasks to deliver and don't sign an agreement (can be collaborator or member of the stakeholder group).
- The standardisation group generally provides a letter of support joined to the project proposal to demonstrate the support of the standardisation.

NRM Call : the competition




- The Call is designed to be over-subscribed by a factor of about 2: even if all the proposals are of high quality, not all of them will be funded.
- The referees' expertise enables to select the best projects which are scientifically excellent, delivered by high quality teams and will truly create an impact.
- Outcomes of the NRM Calls 2015 to 2017:

	NRM call 2015	NRM call 2016	NRM call 2017	Total
Indicative initial budget	2,3 M€	5,7 M€	4,8 M€	
Final result				
Number of NRM projects proposals submitted	10	14	7	31
Number of NRM projects funded	4	8	5	17
Number of NRM projects funded addressing a need of the consultation	1	2	5	8
success rate	40%	57%	71%	55%

Timeline Call 2019 Pre and Co normative projects



- **2018/Q4:** CEN and CENELEC TCs are invited to identify and inform on metrology research needs . Standardisation needs are communicated to PRT proposers via EURAMET website “Stage 1 Orientation”
 - Stage 1 : **PRT stage opens on 9 Jan – closes on 18 Feb 2019.**
 - SRTs selected in Apr-June 2019
 - Stage 2 : Call for project proposals
- OPENING date : 13 June 2019 ; CLOSING DATE : 30 Sep 2019**
- Start JRPs: 2020/1st Semester
 - Previsional budget : a total of 4,5M€ for the call and a maximum of 1M€ per project
-  around 4 to 6 normative projects to be funded in 2019.

2019 call preparation : a yearly opportunity via STAIR EMPIR



- Mail of 3 Sept. 2018 to all CEN and CENELEC TC and SCs: to collect input for PRT stage.
- Submit your needs for metrology research to STAIR EMPIR : Response Form (available on CEN/CENELEC website) to be sent to STAIR EMPIR secretariat (empir@nen.nl) by 14 December 2018.
- Early exchanges between TC/WG and EURAMET metrology experts ensure a higher quality of the PRT :
 - Discuss with metrology institutes involved in your TC/WG
 - Or contact STAIR EMPIR to organize an exchange with EURAMET experts.



All standardization needs will not result in a PRT : depending on the number of metrology institutes interested – at least 3 for the JRP- their internal strategy, their budget....

- Corresponding JRPs: to start 2020/Semester 1
- Outcome of last years : see next slide :
 - 17 running NRM JRPs – 8 driven by needs of the STAIR EMPIR consultations.

Running NRM projects



17 running NRM JRP - Calls 2014 -2017

8 NRM JRP driven by needs of the STAIR EMPIR consultations

Details on the projects : <https://www.euramet.org/research-innovation/empir/empir-calls-and-projects/>

	JRP	JRP Title	JRP Coordinator	CEN need	TC need
1	15NRM01	Metrology for sampling and conditioning SO ₂ emissions from stacks	NPL	05/2015	CEN/TC 264/WG16
2	15NRM02	Techniques for ultra-high voltage and very fast transients	SP		
3	15NRM03	Metrology for sustainable hydrogen energy applications	LNE		
4	15NRM04	Standard tests and requirements for rate-of-change of frequency (ROCOF) measurements in smart grids	NPL		
5	16NRM01	Developing electrical characterisation methods for future graphene electronics	INRIM	14/2015	ISO/TC 229 IEC/TC 113
6	16NRM02	Pavement surface characterisation for smart and efficient road lighting	INRIM		
7	16NRM03	kQ factors in modern external beam radiotherapy applications to update IAEA TRS-398	ENEA		
8	16NRM04	Towards an ISO standard for magnetic nanoparticles	PTB		
9	16NRM05	Towards a documentary standard for an ionisation vacuum gauge	PTB		
10	16NRM06	Improvement of emissivity measurements on reflective insulation materials	LNE	12/2015	CEN/TC 89/WG12
11	16NRM07	SAR measurement using vector probes	LNE		
12	16NRM08	Bidirectional reflectance definitions	LNE-CNAM		
13	17NRM01	Loss Measurements on Power Transformers and Reactors	VSL	2017/02	CLC/TC 14
14	17NRM02	Electromagnetic Interference on Static Electricity Meters	NPL	2017/14	NEV/NEC13 - mirror of CLC/TC 13 and IEC/TC 13
15	17NRM03	Standards for the evaluation of the uncertainty of coordinate measurements in industry	INRIM	2017/07	CEN/TC 290
16	17NRM04	Improved traceability chain of nanoparticle size measurements	BAM	2016/15	CEN/TC 352/WG 1
17	17NRM05	Advancing measurement uncertainty - comprehensive examples for key international standards	NPL	2017/03	BIPM/JCGM-WG 1

EMPIR website



Information on the EMPIR Calls is available all along the year at :
<https://msu.euramet.org/calls.html>

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Previous Calls

- Call 2018 - Health
- Call 2018 - Networks
- Call 2018 - Normative
- Call 2018 - Research Potential

Stage 1 Stage 1 Orientation Stage 1 Submit Stage 1 Questions Stage 2 Stage 2 Submit Stage 2 Questions

Budget Partnering Connections Review Conference

Stage 1 of Call 2018 - Normative - is CLOSED

OPENING DATE: 10 January 2018

CLOSING DATE: 19 February 2018

EURAMET e.V. and the EMPIR members invite interested parties to submit normative topics.

Stage 1 offers the chance for all stakeholders from any country to influence the R&D projects undertaken by the European metrology community by identifying the challenge, problem or opportunity for potential normative topics (PRT).

The highest priority normative topics received in Stage 1 will provide the basis for Stage 2.

Stage 1 Documentation

- **Scope:** [Call Scope Normative 2018](#)
- **Call Scope Classifications:** [Classifications 2018](#)
- **Template 2:** [PRT Template](#)
- **Guide 2:** [Submitting PRTs and PNTs](#)
- **Formal announcement:** [Announcement](#)
- **Call 2018 Budget and features (inc. Stage 2 dates):** [Budget](#)

To submit a PRT please upload your completed Word

More information

European Metrology Programme
for Innovation and Research



Standardisation - Projects (Call 2016)

An overview of the funded projects from the Targeted Programme Pre- and Co- Normative research

Standards for industrial production of graphene (16NRM01)

New methods to be developed for electrical characterisation of graphene

Producing large areas of graphene with uniform electrical properties is a major challenge in making this unique material commercially viable for the electronics industry. This project will address a key aspect of this challenge by investigating methodologies for the electrical characterisation of graphene, producing Good Practice Guides and informing standards. This will underpin production of validated commercial specifications of graphene at an industrial scale.



Measuring road reflection to improve street lights (16NRM02)

Better tools to calculate light reflection will create safer roads

Road lighting must provide sufficient light for road safety, but international standards prescribe reference tables based on 40 year old measurements to calculate light levels. This project will provide updated measurement guidance and reference materials based on current road materials and a variety of road surface conditions, to solve these problems. Resulting standards will improve performance of road lighting and lead to safer night time driving.



New correction factors for radiotherapy calibration (16NRM03)

New cancer treatments need new calibration calculations to ensure accuracy

Ionising radiation beams for cancer treatment must be calibrated accurately, an important aspect of which is correcting for beam quality differences between calibration laboratories and hospitals. This project will update current correction values using measurements and models of the latest ionising radiation technologies, ensuring SI traceability. These will be incorporated into a revised standard, ensuring beams which treat 1.7 million citizens annually are accurately calibrated.



Building trust in magnetic nanoparticles (16NRM04)

New measurement approaches will characterise magnetic nanoparticles and spur innovation

Magnetic nanoparticles (MNPs), which can be precisely manipulated by magnetic fields, could have many valuable applications including targeting cancer cells. This project will support MNP innovation by investigating new measurement approaches, which will feed into the first international standard for measuring MNP magnetic properties. The MNP industry will then be able to market new innovations, with confidence in their properties.



More information:

EURAMET Website :
<http://www.euramet.org/>

EMPIR Website :
<http://msu.euramet.org/>



An example of a NRM project proposal in the 2018 NRM call



- **First contacts** in August 2017 between EURAMET/TG on Environment and CEN/TC 318/WG 12 "Rainfall Intensity Measurements" to discuss any possible proposal to be developed in the 2018 Normative Call
- Oct. 2017: the convenor of CEN/TC 318/WG 12 (with the agreement of WG12 members) explained **the specific need of WG12** at the STAIR EMPIR workshop..
- CEN/TC 318/WG 12 formally **submitted to STAIR EMPIR their need** (in the response form).
- Contacts between the convenor of CEN/TC 318/WG 12 and EURAMET/TG on Environment lead to prepare **a normative PRT** (NRM OTHR 32) submitted in February 2018, with 3 metrology institutes and the convenor of CEN/TC 318/WG 12 as co-authors.
- The need addresses the calibration and accuracy of non-catching type instruments to measure liquid/solid atmospheric precipitation. The main justification of this research is to ensure reliable and comparable atmospheric liquid/solid precipitation measurements from various regions, performed by different operational networks, and using different instruments.
- The **project proposal** submitted in Sept/October 2018 described a project which targets the specific need of CEN/TC 318/WG 12 with a small budget of around 0,4 M€
- Decision for the funding of this project : end of 2018.