

EURAMET

EMPIR

European Metrology Programme for Research and Innovation

Dagmar Auerbach
Programme Manager EURAMET

agenda

TIME	TOPIC	SPEAKER
10:00-10:10	WELMEC introduction and benefit	Gregor Dudle, WELMEC Chairperson
10:10-10:25	EURAMET/EMPIR in general	Dagmar Auerbach, EURAMET Programme Manager
10:25-10:35	NRM call 2019	Dagmar Auerbach, EURAMET Programme Manager
10:35-10:50	Examples of projects with direct link from need to project to outcome	Dagmar Auerbach, EURAMET Programme Manager
10:50-11:00	Q&A	all

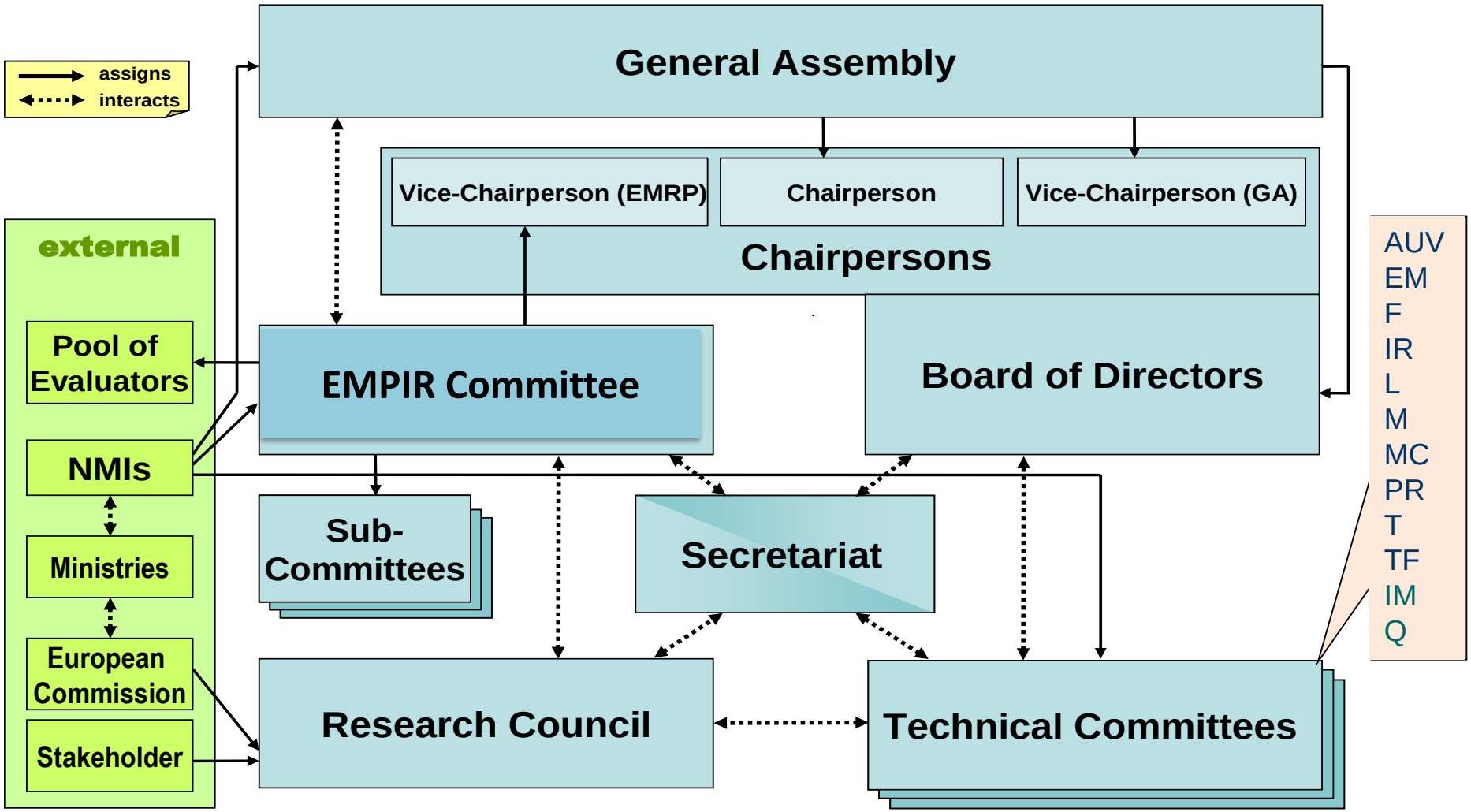
EURAMET today

EURAMET e.V.

- Association of European NMIs
- Inaugurated in 2007
- Successor of EUROMET (1987-2006)
- Legal Entity: German non profit association

- **Members:**
  37+1 (applying) European NMIs
- **Associates:**
  78 DIs
- **Liaison Organisations:**
  4 RMOs & BIPM
  3 NMIs beyond Europe:
  KMA (Kosovo under UNSCR 1244)
  6 regional/international Organisation




assigns
interacts
General Assembly
Vice-Chairperson (EMRP)
Chairperson
Vice-Chairperson (GA)
Chairpersons
external
Pool of Evaluators
NMIs
Ministries
European Commission
Stakeholder
EMPIR Committee
Board of Directors
Sub-Committees
Secretariat
Research Council
Technical Committees
AUV
EM
F
IR
L
M
MC
PR
T
TF
IM
Q

What is the EMPIR and how it is funded?

- about improving measurement to drive innovation and competitiveness
- enables European metrology institutes, industrial organisations and academia to collaborate on joint research projects.
- implemented by EURAMET e.V. (Grant agreement with the EC)
- jointly agreed strategic research agenda
- an example of integration of research, management and finances
- based on Article 185 of the Lisbon Treaty.
- jointly funded by the EMPIR participating countries and the European Union and has a budget of approximately 600 M€ over 7 years of call (10 years on total – JRPs running on 3 years)
- Follows
  - EMRP (400 M€ funded by 50 % CE - 50 % MS) – 5 years call (2010-2014)
  - iMERA-Plus Bridge initiative (64 M€ funded by 32 % CE – 68 % MS) – 1 call (2008)

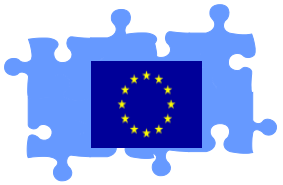
Joint Research in Europe











2002 ...

Cooperation

MERA
Czech Republic
Denmark
France
Germany
Ireland
Italy
Netherlands
Norway
Sweden
Switzerland
UK

11 countries

Coordination

iMERA
Czech Republic
Denmark
Finland
France
Germany
Italy
Netherlands
Norway
Poland
Slovakia
Slovenia
Sweden
Switzerland
UK
EC

14 countries

Collaboration Call 2007

iMERA-Plus
Austria
Belgium
Czech Republic
Denmark
Estonia
Finland
France
Germany
Italy
Netherlands
Norway
Portugal
Romania
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
UK
EC

20 countries

Integration Calls 2009-2013

EMRP
Austria
Belgium
Bosnia-Herzegovina
Czech Republic
Denmark
Estonia
Finland
France
Germany
Hungary
Italy
Netherlands
Norway
Poland
Portugal
Romania
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
UK
EC

23 countries

Reach Out From 2014

EMPIR
Austria
Belgium
Bosnia-Herzegovina
Bulgaria
Croatia
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Netherlands
Norway
Poland
Portugal
Romania
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
UK
EC

28 countries

... 2024 ...

EMPIR Indicative Call Plan

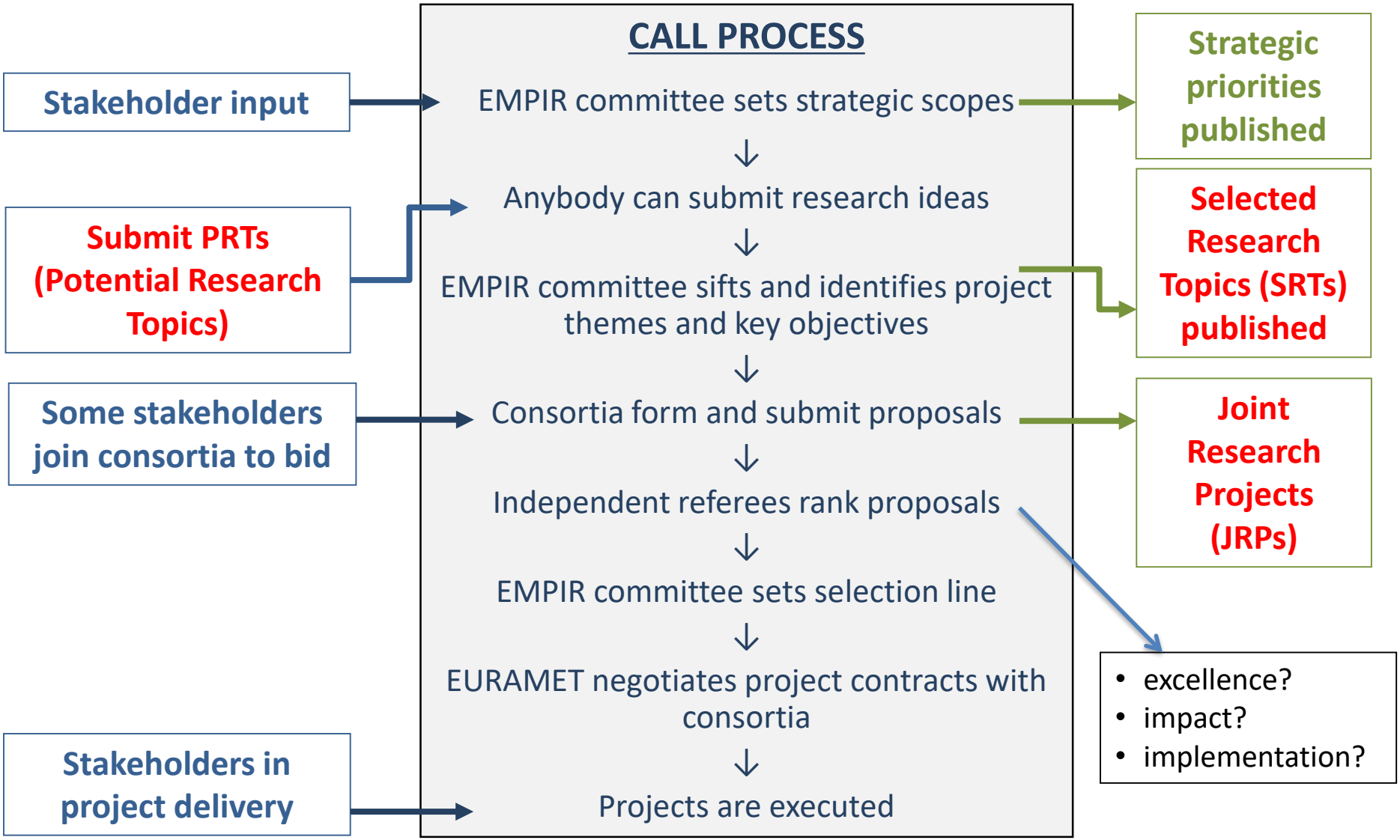
Year	Call
2014	Industry JRPs (IND)
	Research Potential JRPs
	Support for Impact (SIP)
2015	Health JRPs (HEA)
	SI Broader Scope (SI) JRPs
	Pre-normative JRPs (NRM)
	Research Potential JRPs
	SIPs
2016	Environment (ENV) JRPs
	Energy (ENG) JRPs
	Pre-normative JRPs (NRM)
	Research potential JRPs
	SIPs
2017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

- Long-term orientation, with room for flexibility at annual updates
- Three-year call intervals for some themes to enable follow-on projects
- Annual calls for “support for impact” (SIPs) actions and standardisation/regulation related research (except for 2014)
- Annual calls for research potential (RPot)
- + New in 2018 : call for European Metrology Network (EMN)

EMPIR call process - detailed

- Phase 0 - Consultation
- Phase 1 – Call for Potential Research Topics
- Phase 2 – Call for Joint Research Projects
- Phase 3 – Evaluation & results

EMPIR Call process – in summary



EMPIR Module: normative R&D

Module: Pre-normative	R&D focused on metrology needed for European and international documentary standards

- Serves the needs of international Standards Developing Organizations, e.g. CEN, CENELEC, ETSI and ISO, IEC, ITU;
- For **metrology** associated with establishing traceability to the SI,
- Underpins European Directives and Regulations and
- Facilitates the route to market for innovative goods and services.
- Implementation to meet short reaction requirements.
  - ✓ JRP duration = 3 years or shorter
    for extension
  - ✓ external participation up to 30 %

EMPIR – Calls 2019 – time schedule

- Call scopes published on EMPIR website (msu.euramet.org)
- Call will be opened for PRTs on 9th January 2019 – closed 18th of February 2019
- Template and Guide at http://msu.euramet.org/downloads/
- Referee registration : msu.euramet.org
- Calls for Pre- and co-normative research projects and Support for Impact projects will run every year

Questions?



1
3

NORMATIVE EMPIR CALL 2019

WELMEC EMPIR Webinar

02. November 2018



Content

- EMPIR : meeting new challenges
- The Targeted Programmes
- The process
- Objectives of normative projects
- What topics are 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

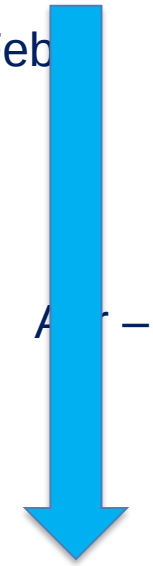


- 2014-2020 / 600M€
- Integrated part of H2020
- Funding of **Joint Research Projects JRP** = collaboration of European metrology institutes, industrial organisations, research organisations, standardisation, regulators.
- Increased focus: to improve links with standardisation (~ 70M€)

The process

A two-stage process

- Stage 1 : Submission of ideas — Jan – Feb
- PRT = Potential Research Topic
- Stage 2 : Call for proposals
  SRT = Selected Research Topic — A[illegible]r – Jun
- Consortia write the project proposals addressing the SRTs — Jun – Sept
- Review of proposals — Nov
- Start of work — Year+1/1st Semester



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 Standard or Regulation 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 Organisations** 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 standardisation work or to feed any future standardisation 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 standardisation 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, standardisation, 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 are 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 standardisation 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 standardised 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 partner** as JRPs are collaborative research projects.
- Topics that are **limited to a national concern** as JRPs are expected to have a 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 (maybe not 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 and 2018 PRT Template 2 at https://msu.euramet.org/calls.html*

- 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 : *11 to 15 NRM SRT published per year*

	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 work:

  - Have valid contributions and deliver tasks that can be funded.

  As example, standardization/regulation 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 / regulation group generally provides a letter of support joined to the project proposal to demonstrate the support of the standardisation/regulation.

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

- 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 4,5 M€ for the call and a maximum of 1 M€ per project

  → around 4 to 6 normative projects to be funded in 2019.

2019 call preparation : an (yearly) opportunity for WELMEC

- 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 WELMEC secretariat to organise an exchange with EURAMET experts.

  All regulation 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, in call 2018 2 by regulation

Question: How many driven by regulation for call 2019



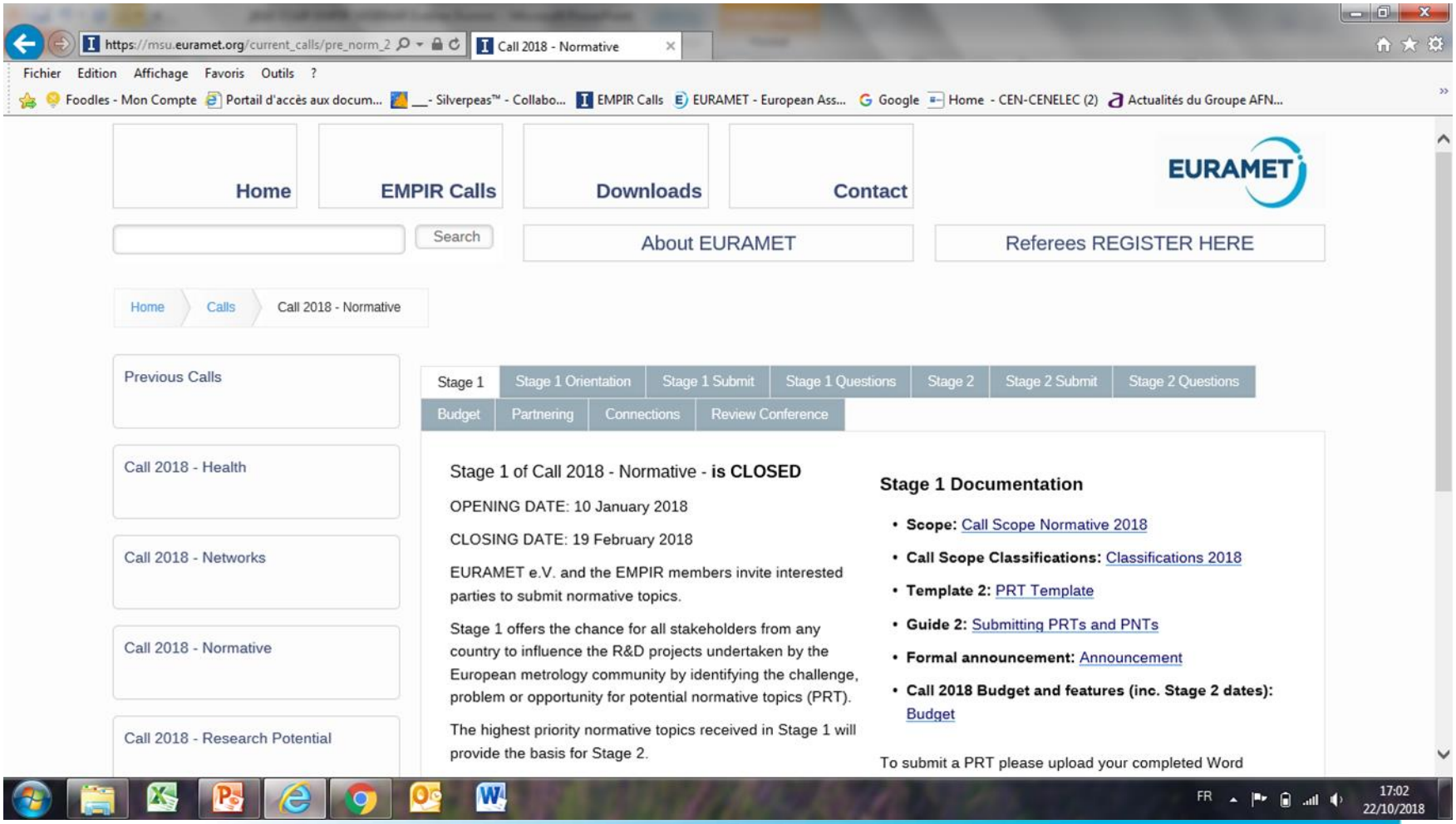
Running NRM projects

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 SO2 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	NEN/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



More information

European Metrology Programme for Innovation and Research

EURAMET

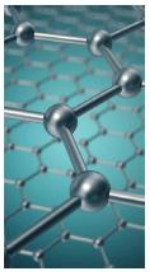
Standardisation - Projects (Call 2016)

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

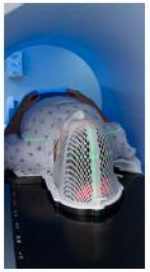
Road lighting must provide sufficient light for road safety, but international standards prescribe reference tables based on 40 year old measurements to calculate light levels. This project will provide updated measurement guidance and reference materials based on current road materials and a variety 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

Ionizing 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 ionizing 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 manoeuvred 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/



#51181945

Stakeholders-Workshop

for Industry and Normative EMPIR Calls in 2020

29 – 30 October 2019

PTB Berlin

Who should attend:

- Stakeholders with metrology needs in the areas of flow or volume measurements of gases or liquids
- Researchers intending to submit potential research topics and/or to provide suggestions for new ideas that need investigating related to flow or volume measurements of gases or liquids
- Stakeholders and researchers with metrology needs which include aspects of flow or volume measurements of gases or liquids



Project status quo

Sulf-Norm

Metrology for sampling and conditioning SO_2 emissions from stacks

An ongoing prenormative research project of 2015 EMPIR Call

CEN Need: CEN/TC 264/WG 16

Dr Rudolf Neuroth, Secretary CEN TC264 (contact person)

The current Standard Reference Method for measuring emissions of SO2 from stacks and flues (EN 14791) is unlikely to meet some of the increasingly stringent emission limits coming into force under the Industrial Emissions Directive (2010/75/EU) and associated Best Available Technique Reference (BREF) documents. Instrumental techniques (automated methods) could in principle provide improved measurement performance but require sample conditioning which is as yet not fully characterised. This proposal would deliver the pre-normative technical work required to properly understand and develop suitable method to ensure successful transfer and conditioning of a representative sample from the stack / flue to the analytical instrument.

Following PRT

PreCEDE – Pre-normative Research for Sampling and Conditioning SO_2 Enabling Enforcement of Decreased Emissions from Stacks

B.2. Abstract

With an economic cost of EU air pollution of €102-169 billion [1] and the Aphekom project [2] establishing a linear relationship between SO_2 air pollution and mortality, the need for the increasingly stringent emission limits under the Industrial Emissions Directive [3] is clear. However, to enforce these lower limits a new reference method is needed but this is being delayed as the instrumental techniques on which it would be based require a filtered and dried gas stream. Due to the complex nature of stack gas matrices this presents risks of sampling losses due to physical changes / chemical reactions, which must be resolved to allow standardisation and ultimately enable enforcement of lower limits.

B.3. Keywords

SO_2 emissions, Standard Reference Method, Industrial Emissions Directive, CLRTAP, CEN/TC 264, Air Quality.

B.4. Scientific and technological objectives

CEN/TC 264, *Air Quality,* have requested, via letter [4] submitted to the 2015 Pre-Co-Normative Orientation stage, work concerning sampling and conditioning of SO_2 from stacks and flues. They have identified this

Overview of the project

Sulf-Norm – EMPIR 15NRM01

Duration July 2016 - 2019

Coordinator: NPL (UK)

Consortium : 9 funded partners

- **3 EURAMET Metrology Institutes**
  - CMI (Czech Republic)
  - MIKES (Finland)
  - NPL (United Kingdom)
- **6 Other participants**

  Environment Agency (UK)
  Hessisches Landesamt für Naturschutz Umwelt und Geologie (Germany)
  Nab Labs Oy (Finland)
  Ramboll Finland Oy (Finland)
  The Source Testing Association (UK)
  Uniper Technologies Ltd (UK)

Overall objectives of the project

To carry out pre-normative research :

- to contribute to the developement of a new Reference Method for robust regulatory monitoring of Sulfur Dioxide (SO_2) emissions from industrial processes
- In order to support the full implementation of the EU's Industrial Emission Directive (IED) and the work of CEN/TC 264 « Air Quality »



Need for the project

- Sulphur dioxide→pollutant→effects on human health, aquatic ecosystems, and forests, crops and other vegetation
- Recent Industrial Emissions Directive (IED/2010) brings stringent emission limits for a range of pollutants including SO_2
- Existing Standard Reference Methods (SRMs) for the measurement of sulphur dioxide emissions, produced by CEN under EC mandate, are no longer fit for purpose at the low levels permitted by IED
- This issue has been formerly recognised by CEN/TC 264 who have highlighted the following future needs: “identify new monitoring requirements of the IED”; “assessment of current SRM to meet stricter limit values”; and “automated methods for measuring emissions” (N2204 Future Work Items of CEN/TC 264).

Project objectives

- To determine as a benchmark for comparison, the sampling performance of the existing Standard Reference Method for SO_2 (EN 14791) for a range of industrial processes
- To investigate different materials (e.g. stainless steel, borosilicate glass, ceramic) for conditioned sampling for use with different stack gas matrices i.e. in order to avoid sample alteration e.g. due to catalysing surface reactions.
- To evaluate drying technologies for conditioned sampling based on chilling and permeation principles to determine which processes are at risk of sample bias.
- To work closely with CEN/TC 264/WG16 during the lifetime of the project and to contribute to a future revision of EN 14791 by providing data and methods necessary for SO_2 sampling and to the production of CEN Technical Specification SO_2 to move closer towards EN status

Expected impact on the stakeholder

stakeholder	Impact mechanism
CEN community	Up to 6 standards (including the SO_2TS) covering a range of pollutants regulated under the IED
Stack Testing organisations	Improved quality and decreased labor costs
Plant Operators and National regulators	Real-time data decreasing exceedances, improving compliance with regulation and public perception of industry reputation and regulator enforcement
Instrument manufacturers	Acceptance of a method for SO_2 by P-AMS opening up the instrument market

Some strengths that made project proposal successful

- Demonstration at high level of capabilities and knowledge of all partners (accreditation, experience, testing facilities, legislation/standardisation knowledge)
- Engagement outside the metrology community : Good mix of partners with national regulator, plant operators, stack testing organisations, instrument manufacturers
- Strong link with standardisation committees as NPL, the coordinator of the project, is involved in CEN/TC 264 and different WG
- Effective support of the convenor of CEN/TC 264/WG16 expecting the project results for the benefit of a large community.

Questions?



Project status quo

MeterEMI



An ongoing Normative research project of 2017 EMPIR Call

Overview of the project

MeterEMI :

Electromagnetic Interference on Static Electricity Meters

Duration May 2018 - April 2021

Coordinator: NPL (UK)

Consortium : 7 funded partners

- **5 EURAMET Metrology Institutes**

NPL, United Kingdom, CMI, Czech Republic, JV, Norway , METAS, Switzerland , VSL, Netherlands

And 2 other participants:

UPC, Spain, UTwente, Netherlands

Overall objectives of the project:

Restoring customer confidence in smart meter readings

Need for the project

- With a rollout of 200 million:

→ digital smart meters across Europe, the new wireless technology should give users real-time, accurate measurement of electricity consumption.

→ Some meters→error by hundreds of percent, with electrical interference identified as the cause of incorrect customer billing

→ all such meters had passed inspection under the EU Measuring Instrument Directive (MID), there is a clear need to improve meter test methods, update existing standards and restore consumer confidence..

Project objectives

- will develop methods to test the accuracy of smart meters for electricity consumption
- Using high-precision measurements of real-world electrical disturbances,
- to help settle billing disputes, interference-immune meter designs will be identified for on-site inspections;
- diagnostic algorithms will also be developed for the identification of transient current types

→**Ultimately, the results will support European and international standards and help restore consumer confidence in smart meter usage**.

Expected impact on standardisation

- New testbeds and protocols developed in the project will underpin the MID mandated under EU directive 2014/32/EU
- CENELEC CLC TC13 oversees the norms related to meter testing such as EN 50470-3. CENELEC CLC TC77A is responsible for the norms that specify the testing methods which are called up by CENELEC CLC TC13 norms. They oversee EN 61000-4-19 which was recently modified to account for the 2 kHz to 150 kHz interference issue with meters. This norm will be targeted by this project for the inclusion of new protocols for meter testing to ensure future immunity to the problematic signals occurring on the grid.
- Members of the consortium have memberships and close links with these key committees which will ensure timely implementation of new normative protocols to quickly restore confidence in the MID.

Questions?



Project status quo

MyRailS

An ongoing Energy research project of 2016 EMPIR Call



Overview of the project

MyRailS:

Metrology for smart energy management in electric railway systems

Duration Sept 2017 - Aug 2020

Coordinator: INRIM (Italy)

Consortium : 14 funded partners

- **6 EURAMET Metrology Institutes**

  INRIM, Italy, CMI, Czech Republic, FFII, Spain, LNE, France, NPL, United Kingdom, VSL, Netherlands

  And 10 other participants

Overall objectives of the project

- to develop the metrological infrastructure for accurate measurement of energy exchange and for reliable system monitoring
- focuses on the characterisation of the railway subsystem as a producer-consumer, with a view to its integration in a wide smart grid, as well as on the assessment of eco-driving performances.

Need for the project

- The European railway system consumes about 36.5 terawatt-hours of energy each year. To meet the ambitious EU target of reducing CO_2 emissions from rail transport by 50 % by 2030, efficient use of energy across Europe's railway system is mandatory.
- This requires accurate and reliable knowledge of the energy exchanged between the train and the railway grid, and real-time power quality.

Project objectives

- will develop the infrastructure needed for accurate measurement of energy exchange and power quality, under the highly dynamic conditions experienced in transit.
- will also focus on the characterisation of the railway subsystem as a producer-consumer, able to transfer excess energy, with a view to its integration in a wider smart grid.

Expected impact on standardisation

Results of this project will:

- underpin the energy efficient management of Europe's railway networks, and allow upcoming EU legislation concerning railway energy management to be met.
- will promote the results and will provide input to more specific technical committees on on-board energy measurements: CENELEC/IEC TC9X, CENELEC/IEC TC38 (WG47 and AHG 50), CENELEC/IEC TC85, International organisation on legal metrology OIML TC12 and WELMEC WG11.

Questions?



Thank you for your attention!

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