



# Capacity Building (Call 2015) - Projects

An overview of the funded projects from the Targeted Programme Research Potential.

The aim of these projects to build capacity for research in less developed NMIs and DIs.

The projects underpin the coherent, efficient, sustainable and integrated development of a European metrology capacity landscape.

## Accelerating innovation in microwave technology

Improved microwave measurement capabilities will boost quality and confidence in advanced technologies

Radio frequency (RF) and microwave technology has undergone revolutionary changes over the last 40 years and it is more pervasive than ever today, with smart phones, GPS and wireless networks playing a key role in our everyday lives. As RF and microwave technology continues to progress, providing innovative applications across the healthcare, energy, security and other sectors, industry requires novel measurement methods and devices to underpin their production. This project aims to increase the microwave measurement capabilities and expertise of emerging EURAMET countries, providing a foundation for effective cooperation on emerging technical challenges in this rapidly evolving field. This will be done by transferring theoretical and practical know-how between partners and combining skills to improve the reliability and precision of RF and microwave metrology. The capabilities developed will provide essential tools for European industry to ensure product quality, create end user confidence and accelerate innovation.



### Project 15RPT01

Development of RF and microwave metrology capability

Murat Celep

TUBITAK  
+90 262 679 5000  
murat.celep@tubitak.gov.tr

[www.euramet.org/project-15rpt01](http://www.euramet.org/project-15rpt01)

## Protecting marine life from underwater noise

New calibration methods for underwater noise monitors will support compliance with environmental legislation

The expansion of offshore activities such as oil and gas exploration, together with the rapid increase in commercial shipping traffic, has raised concerns about the environmental impact of man-made noise on marine life. In response, the EU has introduced legislation designed to limit the impact of such noise – for example, the Marine Strategy Framework Directive mandates that all member states with oceans undertake monitoring to assess and manage noise from ship traffic. To support the implementation of this and similar legislation, Europe needs an improved metrology framework to underpin the accurate measurement of underwater noise, for which traceability is currently lacking. This project will directly address this need by providing traceable calibration methods for devices used to monitor underwater noise, covering a range of frequencies vital to their effective operation, and ensure a coordinated approach to underwater acoustics across Europe.



### Project 15RPT02

Underwater acoustic calibration standards for frequencies below 1 kHz

Alper Biber

TUBITAK  
+90 262 677 3159  
alper.biber@tubitak.gov.tr

[www.euramet.org/project-15rpt02](http://www.euramet.org/project-15rpt02)

## Boosting competitiveness with precision humidity control

Development of a humidity measurement infrastructure will provide the tools needed to improve efficiency and quality in industry

Humidity is one of the most important properties affecting everyday processes from indoor ventilation to the storage of food products and pharmaceuticals. As a result, the ability to accurately measure humidity is vital to increasing efficiency, competitiveness and providing quality assurance across a huge variety of European industries. This project will develop new measurement methods and share best practice with emerging NMIs by providing an infrastructure for reliable, traceable humidity measurements across Europe. A particular focus will be placed on capabilities that meet the needs of each country's key industries to allow them to gain a competitive edge. Strategies for the continued development of humidity measurement capabilities will be developed, to prepare the future metrological landscape and ensure European industry has access to the facilities it needs well beyond the duration of the project.



### Project 15RPT03

Expansion of European research capabilities in humidity measurement

Nedžadeta Hodzic

IMBiH  
+38 733568928  
nedzadeta.hodzic@met.gov.ba

[www.euramet.org/project-15rpt03](http://www.euramet.org/project-15rpt03)

## Ensuring power quality for greener grids

A new Europe-wide system for power quality measurements will pave the way for increased adoption of renewable energy

The Renewable Energy Directive requires the EU to fulfil at least 20 % of its final energy consumption with renewable sources by 2020. However, increasing numbers of decentralised renewable sources can cause a deterioration in the grid's power quality and demands are increasing for traceable, accurate measurements of power and power quality. Efficient measurement of power and power quality is challenging, and while several National Measurement Institutes have developed power and power quality measurement systems based on sampling techniques, the level of expertise and resources required mean that many NMIs do not yet have complete or operational systems. This project aims to develop a new, open system for sampled power and power quality measurements, accessible across Europe, which would reduce the burden of parallel development of similar capabilities. Successful implementation of this system will pave the way for increased adoption of renewable energy across Europe.



### Project 15RPT04

Traceability routes for electrical power quality measurements

Věra Nováková Zachovalová

CMI

+420 545 555 305

[vnovakovazachovalova@cmi.cz](mailto:vnovakovazachovalova@cmi.cz)

[www.euramet.org/project-15rpt04](http://www.euramet.org/project-15rpt04)

## Europe's National Measurement Institutes working together

The majority of European countries have a National Metrology Institute (NMI) that ensures national measurement standards are consistent and comparable to international standards. They also investigate new and improved ways to measure, in response to the changing demands of the world. It makes sense for these NMIs to collaborate with one another, and the European Association of National Metrology Institutes (EURAMET) is the body that coordinates collaborative activities in Europe.

The European Metrology Programme for Innovation and Research (EMPIR) follows on from the successful European Metrology Research Programme (EMRP), both implemented by EURAMET. The programmes are jointly funded by the participating countries and the European Union and have a joint budget of over 1000 M€ for calls between 2009 and 2020. The programmes facilitate the formation of joint research projects between different NMIs and other organisations, including businesses, industry and universities. This accelerates innovation in areas where shared resources and decision-making processes are desirable because of economic factors and the distribution of expertise across countries or industrial sectors.

EURAMET wants to involve European industry and universities at all stages of the programme, from proposing Potential Research Topics to hosting researchers funded by grants to accelerate the adoption of the outputs of the projects.



EURAMET e.V.  
Bundesallee 100  
38116 Braunschweig  
Germany

Dr Duncan Jarvis  
EMRP Programme Manager  
Email: [emp-rp-pm@euramet.org](mailto:emp-rp-pm@euramet.org)  
Phone: +44 20 8943 6707



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