**EMPIR Call 2019 – Networks**

Selected Network Topic number: **SNT-w07**
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# Title: Support for a European Metrology Network on food safety


## Abstract

Safe, high-quality food is a fundamental prerequisite for human health. Regulation (EC) 178/2002 sets out general principles of food safety and Regulation (EU) 2017/625 aims for a high level of protection for humans, animal and plant health and the environment. The food labelling Regulation (EU) 1169/2011 and the Novel Food Regulation (EU) 2015/2283 together ensure that nanomaterials in foods must be clearly indicated and their safety assessed using state-of-the-art methods. However, there is currently a plethora of measurement techniques and standards that can be applied to food safety; data is often insufficient or contradictory and there is a lack of consensus. Better coordination between institutions is required to improve the current state-of-the-art in food-related measurements at European level. A European Metrology Network will improve the reliability of measurement results along the food chain and ensure traceability to the SI in European food control.



## Keywords

Food network, dissemination, food safety, food metrology, harmonisation activities.


## Background

Timely data collection and accurate predictive models can substantially reduce issues along the food chain. Regulation (EU) 2017/625 stipulates the need for validated scientific methods in designated official laboratories and establishes European Union and National Reference Laboratories (EURLs/NRLs). By combining a metrological approach with the needs identified by these laboratories reliable information can be shared to prevent food-related emergencies caused by food contamination or fraud. These institutions also implement and enforce European legislation and require traceable measurement results to be established by NMIs, in order to support their activities.

Greater collaboration between NMIs and the key international players is needed to improve metrologically verified measurement techniques that monitor a particular food product along the entire food chain and to contain potential health risks. This can be achieved through knowledge transfer between NMIs and reference laboratories, the development of certified reference materials, links with proficiency testing schemes, standardised measurement techniques and routine measurements at EURL level.

There is a need to address specific concerns in food science in a coordinated way to reduce uncertainties and improve the reproducibility of analysis of food matrices (e.g. nanoparticles or pathogens in food matrices). This should be done in coordination with other European infrastructures such as METROFOOD-RI (ESFRI Roadmap 2018 – Domain Health and Food), the European Food Safety Authority (EFSA), and the International Union of Pure and Applied Chemistry (IUPAC).

Standardisation bodies also need consensus on the reliability of measurements. Transfer of knowledge and terminology from the metrology community to the European Committee for Standardisation (CEN) and the European Committee for Electrotechnical Standardisation (CENELEC) will address the need to harmonise standard operating procedures.

How and where NMIs should focus limited resources to obtain maximum impact for society urgently requires a strategic plan and significant coordination both at European and global levels. No single NMI has the expertise or resource to tackle all or even a significant fraction of the most critical priorities without collaboration. Without coordination, there is a strong likelihood of unnecessary duplication, with NMIs (nationally and/or regionally) potentially independently choosing to focus efforts on the same challenge with consequential neglect of others. EURAMET is considering establishing a European Metrology Network to coordinate the European NMI response, to establish close links to the stakeholder community, to develop and


**EURAMET MSU,** Hampton Road, Teddington, Middlesex, TW11 0LW, UK
Phone: +44 20 8943 6666 Email: msu@npl.co.uk
msu.euramet.org



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implement a strategic agenda and establish a knowledge, technology transfer and promotion plan, to ensure an effective response is put in place. This SNT is intended to elaborate how a network could support EURAMET and to support that network in its initial tasks.

## Objectives

Proposers should address the objectives stated below, which are mainly based on the PNT submissions. Proposers may identify amendments to the objectives or choose to address a subset of them in order to maximise the overall impact, or address budgetary or scientific / technical / legal / regulatory / market constraints, but the reasons for this should be clearly stated in the protocol.

The JNP shall focus on developing a long term ongoing dialogue between the metrology community and relevant stakeholders. This dialogue should support the take-up of research outputs from the metrology community and the collection of needs from stakeholders to inform future research.

The specific objectives are:

1. To establish regular, constructive dialogue and liaison between the project and stakeholders in the fields of food safety metrology, including the European Food Safety Authority, International Union of Pure and Applied Chemistry, European Union Reference Laboratories (EURLs) and National Reference Laboratories (NRLs), and standards development organisations. This should include not only fostering existing liaisons, but also promoting new collaborations.
2. Using the feedback from stakeholders in Objective 1, to develop a Strategic Research Agenda (SRA) and roadmaps to address outstanding metrological requirements along the food chain. This should identify current and future challenges in food safety and take into account activity in existing infrastructures e.g. the Infrastructure for promoting Metrology in Food and Nutrition (METROFOOD-RI), the European Strategy Forum on Research Infrastructures (ESFRI) Roadmap 2018 – Health & Food.
3. Using the feedback from stakeholders in Objective 1, to develop a web-based platform for stakeholders in the fields of food safety metrology. The platform should include easy access to European metrology capabilities, relevant food markers and regulatory requirements e.g. Regulations (EU) 2017/625, 178/2002, 1169/2011 and 2015/2283, and provide a service desk for answering stakeholders' questions. It should be developed in a manner that allows it to be maintained by a future EMN.
4. Using the feedback from stakeholders in Objective 1, to set up a sustainable knowledge-sharing programme for food safety stakeholders, in order to promote the dissemination and uptake of information, in particular with standards development organisations and food safety authorities. This should include a range of activities regularly hosted by the project, such as the exchange of researchers between organisations, metrology workshops, stakeholder events, inter-comparisons and training courses.
5. To develop a plan for a joint and sustainable European metrology research infrastructure for food safety via a European Metrology Network. The plan should be completed within 12 months of the start of the project and should: (i) use coordination and smart specialisation of capabilities (ii) align with other running initiatives and projects, (iii) promote the development of emerging member states, and (iv) consider how to extend collaboration to third countries.

The proposed activities shall be justified by clear reference to the measurement needs within strategic documents published by the relevant stakeholders. Proposers should establish the current state of the coordination in this area, and explain how their proposed project goes beyond this.

The proposed activities should not include those essential for the establishment and operation of the EMN. EMNs will be established and operated by the EURAMET members using their own national resources regardless of whether specific EMPIR proposals are funded. EMPIR funding is for specific tasks aimed at ensuring a proposed EMN will progress quickly towards its establishment and implementation and contribution to the objectives of the programme.

EURAMET expects the average EU Contribution for the selected JNPs in this TP to be 0.4 M€, and has defined an upper limit of 0.5 M€ for this project.

## Potential Impact

Proposals must demonstrate adequate and appropriate participation/links to the “end user” community, describing how the project partners and collaborators will engage with relevant communities during the project to facilitate knowledge transfer and accelerate the sustainability of the organisation. Evidence of support from the “end user” community (e.g. letters of support) is also encouraged.

You should detail how your JNP results are going to:

- Address the SNT objectives and deliver solutions to the documented needs,
- Provide a lasting improvement to coordination in the European metrological community and communication with their stakeholders beyond the lifetime of the project,

You should detail other impacts of your proposed JNP.

You should also detail how your approach to realising the objectives will further the aim of EMPIR to develop a coherent approach at the European level in the field of metrology and include the best available contributions from across the metrology community. Specifically, the opportunities for:

- improvement of the efficiency of use of available resources to better meet metrological needs and to assure the traceability of national standards
- the metrology capacity of EURAMET Member States whose metrology programmes are at an early stage of development to be increased

## Time-scale

The project should be of up to 4 years duration.