



Dutch
Metrology
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European Metrology Network (EMN) on Smart Electricity Grids

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VSL Rationale for EMN Smart Grids: Support the Energy Transition



- Electrical grids are a core element of the **Grand Challenge Energy**
 - Backbone of our society; our most important infrastructure
 - Increasing “electrification”: electrical energy as medium for energy transport and use
 - Key enabler for realisation of CO₂ reduction aims
- **Major changes** in the electrical grid:
 - Addition of renewable energy sources, with variable output
 - Localised generation and storage
 - Bi-directional transport
 - Liberalisation of energy market, across national borders
- Grid stability and quality need to be guaranteed; need for a **Smart Grid**

The (smart) electricity grid depends on reliable test & measurements
 ⇒ *key contribution required from metrology*

Aim and scope of the EMN on Smart Electricity Grids

European metrology partners jointly work together in the EMN SEG network

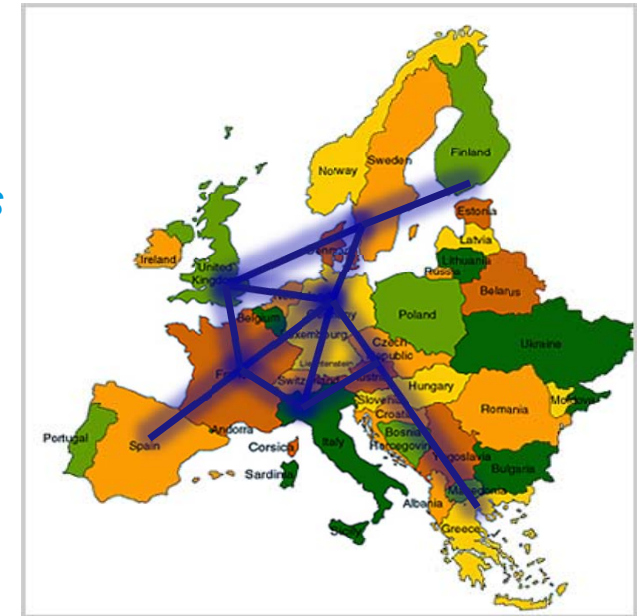
- to provide a single point of contact for stakeholders and stakeholder organisations,
- to realise a coherent NMI response to their measurement challenges, and
- to maximise the impact of R&D activities in the field (already 15 JRPs so far!)

Scope: all electricity grid related metrology challenges
(smart grid, HV and HC, time distribution, data analytics, etc)

⇒ *key metrology contribution to implementation of smart grids*

Interest so far:

- 18 NMIs & DIs + 2 universities have joined the network
- > 50 Stakeholders expressed their support: governments, utilities (DSO, TSO), industry, SDOs (IEC, CLC), universities



EMN on Smart Electricity Grids: objectives (1)

The Strategic Agenda has five strategic objectives:

1. To coordinate alignment of national R&D strategies and develop a joint strategic research agenda (SRA)
 - Overview of stakeholder needs, including prioritisation
 - Long term R&D planning in SRA
 - Implementation roadmap to systematically cover needs

2. To create a joint sustainable European metrology infrastructure of European NMI facilities and services
 - Overview of services and large facilities
 - Promote smart specialisation to reduce overlap and maximise coverage of stakeholder needs



EMN on Smart Electricity Grids: objectives (2)

The Strategic Agenda has five strategic objectives:

3. To create a widely visible identity as voice of the European electricity grid metrology community and to set up strategic liaisons with relevant (European) stakeholder organisations
4. To realise a virtual knowledge hub
 - Single website for results from multiple R&D projects
 - Single point of contact
5. To set up an extensive knowledge transfer program
 - Develop training courses
 - Stimulate exchange of researchers

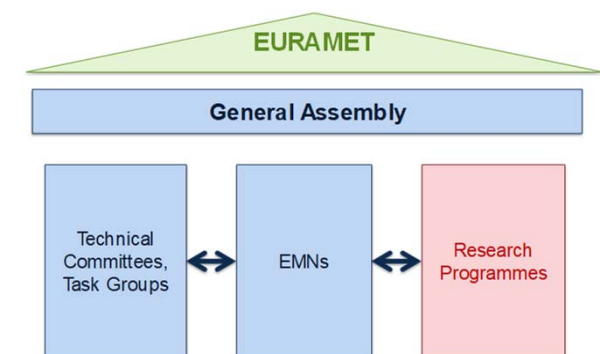


Present status: start up of the EMN

- Preparation of the formal start of the EMN:
 - Formal kick-off meeting on 13 May 2019
 - MoU, RoP (Rules of Procedure): ready for distribution and signing
- Funding ensured via an “JNP” (Joint Network Proposal) – per 1 May 2019, 5 years
 - ‘kick-start’ the EMN
 - JNP objectives fully aligned with EMN objectives

Key to the EMN success will be the active input from all EMN members and interaction with stakeholders!

⇒ Fit-for-purpose smart grid metrology infrastructure
... as part of the future structure of EURAMET

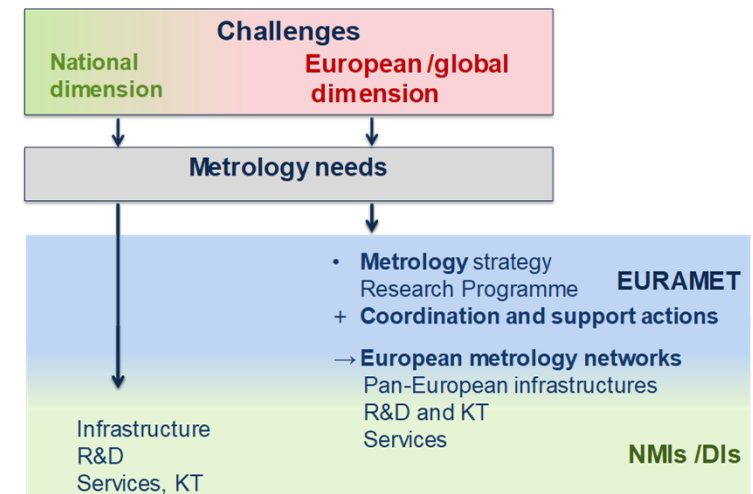


Why European Metrology Networks (EMNs)?

Joint metrology research projects have improved coordination between NMIs and interaction with stakeholders but:

- Research projects mostly defined bottom-up, “ad hoc”
- No systematic coverage of stakeholder needs
- Unknown national strategies, no “European” strategy

Make next step in coordination via networks of excellence in strategic areas



The overall EMN objective is to create **sustainable structures** in areas of **strategic importance** for the future of European metrology by:

- Creating and disseminating knowledge
- Gaining international leadership and recognition
- Building coordinated infrastructure