

How the Partnership on Metrology will deliver on global challenges and modernise industry?

EUROPEAN PARTNERSHIP



Co-funded by
the European Union

**METROLOGY
PARTNERSHIP**



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EURAMET Vice-Chair / Chair of Partnership on Metrology

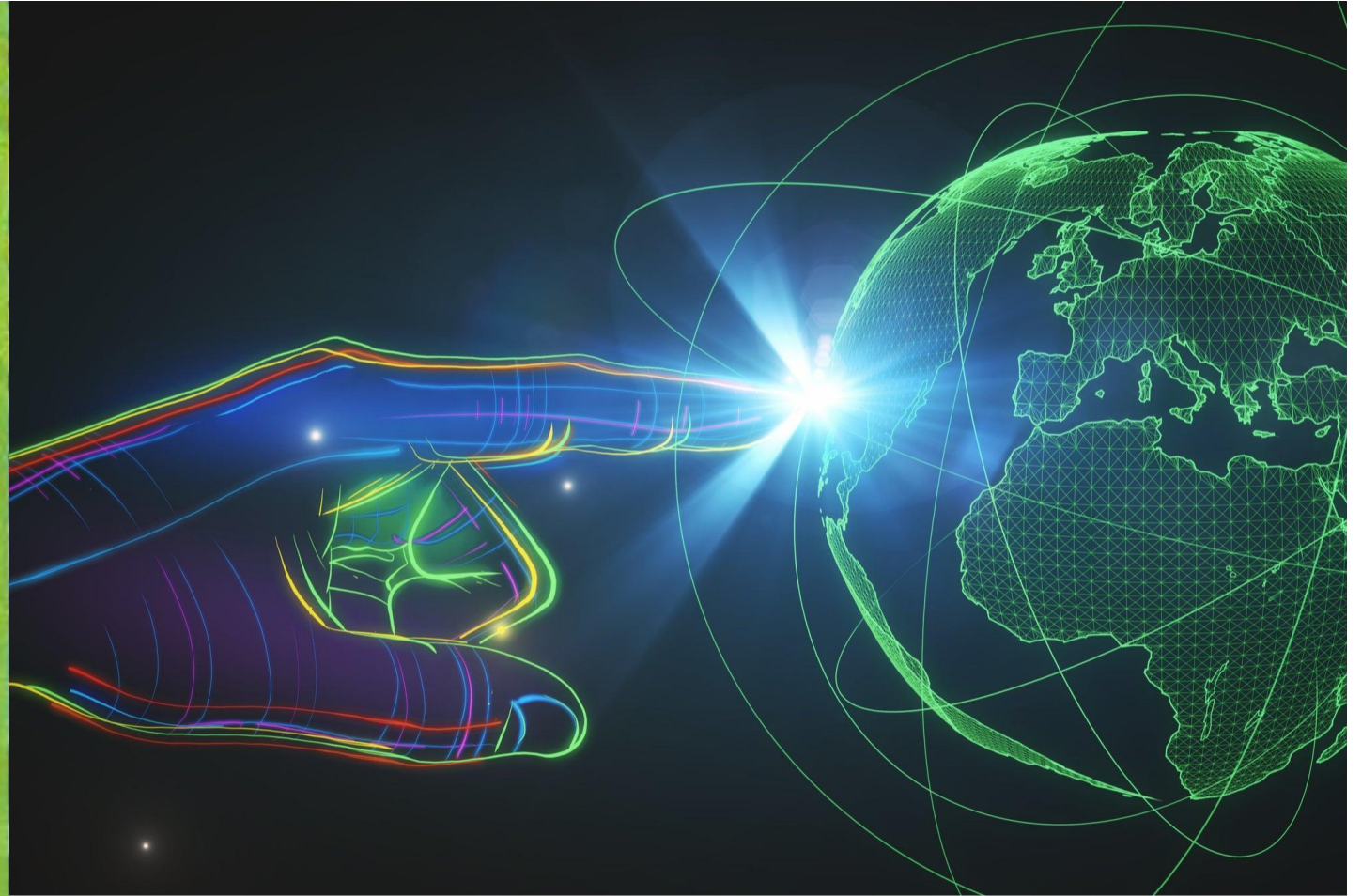


Research metrology programmes



CREATING IMPACT BY ADVANCING MEASUREMENT SCIENCE

EURAMET's European Metrology Research Programmes (EMRP and EMPIR) are fostering international collaboration, driving research excellence, addressing society's grand challenges, including health, energy and the environment, and contributing to Europe's economic turnover



[Metrology Impact](https://www.euramet.org/metrology-for-societys-challenges/)

<https://www.euramet.org/metrology-for-societys-challenges/>



2002 ...

Coordination

Cooperation

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

11 countries

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

14 countries

- 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

- 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

- 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

64 M€

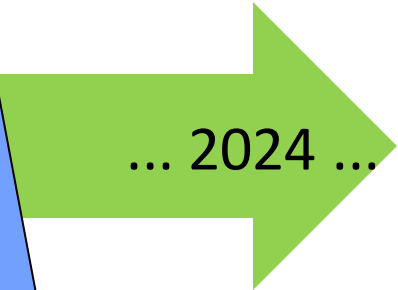
Call 2008

400 M€

Calls 2009-2013

600 M€

Calls 2014-2020



... 2024 ...

Next ?

Research metrology programmes

- from 2008 to 2020
- 20 to 28 European countries involved
- around 380 EU joint research projects implemented
- topics
 - grand challenges : health, environment, energy
 - international system of units (SI) realization and dissemination
 - new technologies and fundamental
 - normative
 - capacity building RD projects
- co-funded by EURAMET Member States and EC
- involvement of Academia, universities, industries



Horizon Europe Framework Programme



HORIZON EUROPE

SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

*Exclusive focus on
defence research
& development*

Research
actions

Development
actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*

Exclusive focus on civil applications



**Pillar I
EXCELLENT SCIENCE**

European Research Council

Marie Skłodowska-Curie

Research Infrastructures

Partnerships



**Pillar II
GLOBAL CHALLENGES &
EUROPEAN INDUSTRIAL
COMPETITIVENESS**

Clusters

- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Joint Research Centre



**Pillar III
INNOVATIVE EUROPE**

European Innovation
Council

European Innovation
Ecosystems

European Institute of
Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

Widening participation & spreading excellence

Reforming & Enhancing the European R&I system

EPM

European Partnership on Metrology



Objective: To create, by 2030, a world-class sustainable and coordinated system for metrology at European.

- A robust, **sustainable** European Metrology Infrastructure
- State-of-the-art metrology R&D taken up by **innovators**
- Address **European and global challenges**, including:
 - European Green Deal
 - UN Sustainable Development Goals
 - The Digital transition and European Industry strategy
 - Better Health for All



Budget Ambition – 690 M€

- 390 M€ from Member States
- 300 M€ EC funding
- 23 countries
- 2 countries considered as associate partners (**CH** & **UK**), no EC funding
 - UK in 2024?

Further information: <https://www.euramet.org/partnership>

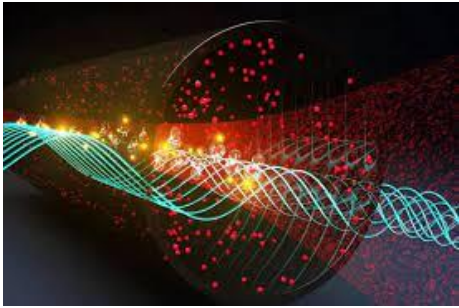
The European Partnership on Metrology – General Objectives



- (a) to develop a **sustainable, excellent and coordinated metrology system** at European level, thereby helping to bridge the investment gap between Europe and its global competitors;
- (b) to ensure that **state-of-the-art metrology capabilities** are widely taken up by innovators in their ecosystems and beyond;
- (c) to increase the impact of metrology on societal challenges in relation to the **implementation of policies, standards and regulations**, inter alia in the digital, economic, industrial and environmental areas, to make them fit for purpose.



The European Partnership on Metrology – Specific Objectives



- a) to develop, by 2030 new research capabilities which are built within the framework of new **European Metrology Networks** and which perform in terms of calibration and measurement capabilities at least equal to the leading metrology institutes outside the Participating States ;
- b) to support, by 2030, sales of **new innovative products and services** through the use and adoption of the new metrology capabilities in key emerging and enabling technologies;
- c) to contribute to the **creation and diffusion of high-quality new knowledge**, competences and skills across the Union in the context of lifelong learning and with a view to achieving societal transformation, including through enhancing capability for innovation;



The European Partnership on Metrology – Specific Objectives



- d) to contribute fully and effectively, by 2030, to the design and implementation of specific **standards and regulations** that underpin public policies addressing societal, economic and environmental challenges;



- e) to unleash the potential of metrology among end-users, including SMEs and industrial stakeholders, as an instrument which contributes to achieving the **Union goals for the digital and green transitions.**

European Partnership on metrology



Signature of the contract between EC and EURAMET 31st of March 2022

The European Partnership on Metrology approved by the European Parliament and the Council of the European Union, and is in force from the 1st December 2021

Official Journal of the European Union

L 427



English edition

Legislation

Volume 64

30 November 2021

Contents

I Legislative acts

DECISIONS

★ Decision (EU) 2021/2084 of the European Parliament and of the Council of 24 November 2021 on the participation of the Union in the European Partnership on Metrology jointly undertaken by several Member States 1

European Partnership on Metrology

Call topics and schedule



2021	Green Deal
2022	Health, Integrated European Metrology, Digitalisation
2023	Fundamental, Industry (<i>on finalisation</i>)
2024	Green Deal, Digitalisation
2025	Health, Integrated European Metrology
2026	Fundamental, Industry
2027	Green Deal

- **Normative (& regulation)** each year
- **Research Potential (CB)** the first 5 years
- *“Integrated European Metrology”* is SI development with a focus on joint capabilities and infrastructures

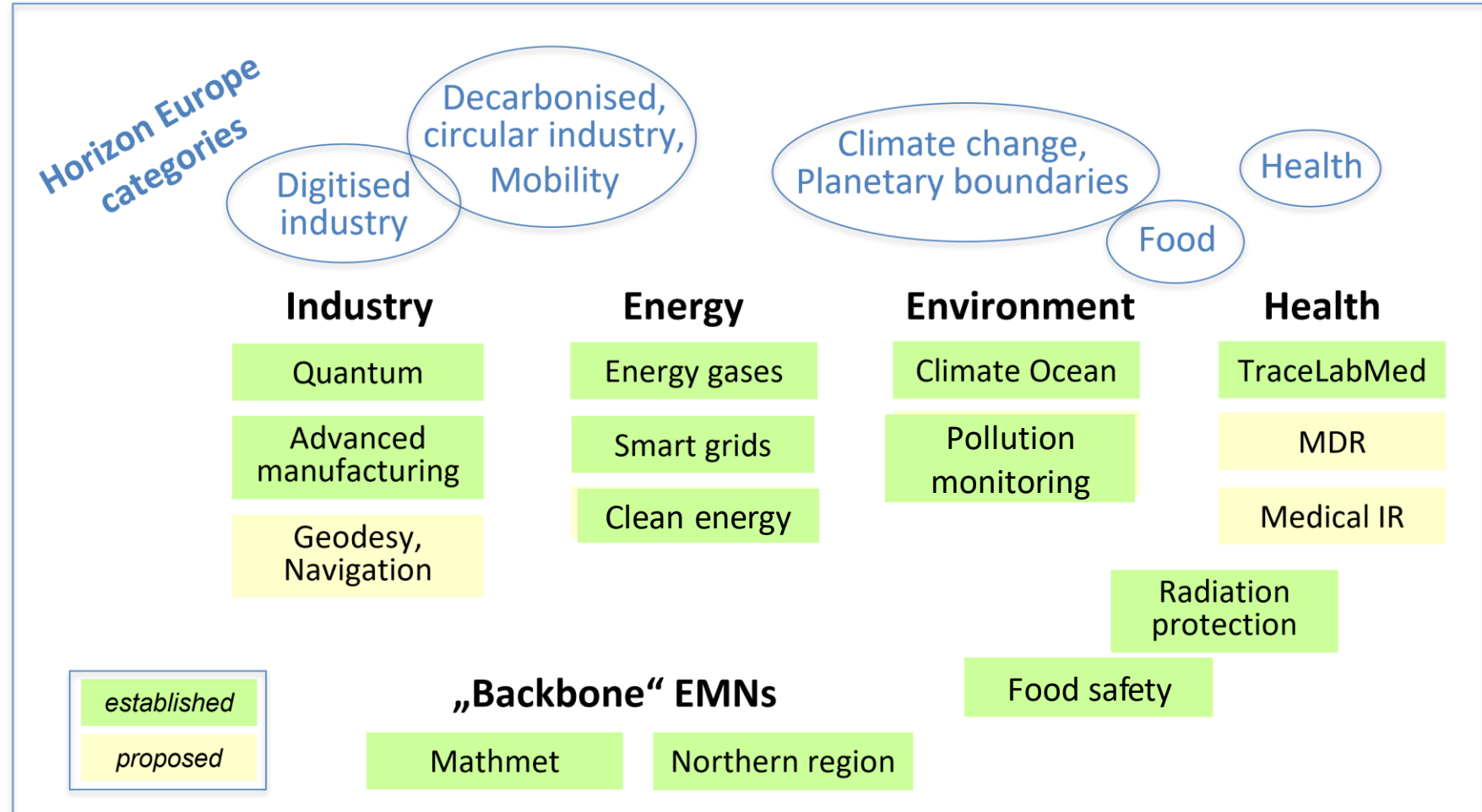


Participant Portal: <https://www.metpart.eu>

EMN (European Metrology Networks)



- consultation of stakeholders to better answer to metrology needs
- to develop sustainable metrology activities at horizon 2030



Complementarity and Relevance of other Partnerships



CLUSTER 1: Health	CLUSTER 4: Digital, Industry & Space	CLUSTER 5: Climate, Energy & Mobility	CLUSTER 6: Food, Bioeconomy, Agriculture, ...
Innovative Health Initiatives ●●	Key Digital Technologies ●●●●	Clean Hydrogen ●●	Circular Bio-based Europe ●
Global Health Partnership ●	Smart Networks & Services ●●	Clean Aviation ●	Rescuing Biodiversity to Safeguard Life on Earth ●
Transformation of health systems ●	High Performance Computing ●●	Single European Sky ATM Research 3	Climate Neutral, Sustainable & Productive Blue Economy ●
Chemicals risk assessment ●●	European Metrology (Art. 185)	Europe's Rail	Water4All ●●
ERA for Health ●	AI-Data-Robotics ●●	Connected and Automated Mobility (CCAM)	Animal Health & Welfare* ●
Rare diseases* ●	Photonics ●●●	Batteries ●	Accelerating Farming Systems Transitions* ●
One-Health Anti Microbial Resistance* ●	Made in Europe ●●	Zero-emission waterborne transport ●	Agriculture of Data* ●
Personalised Medicine* ●	Clean steel – low-carbon steelmaking	Zero-emission road transport ●●	Safe & Sustainable Food System* ●
Pandemic Preparedness* <i>Co-funded or co-programmed</i>	Processes4Planet ●	Built4People ●	
	Global competitive space systems** ●●	Clean Energy Transition ●●●●	
		Driving Urban Transition ●	

● Co-funded or co-programmed Partnership (Art. 185 FTE)

Examples of EPM joint research projects

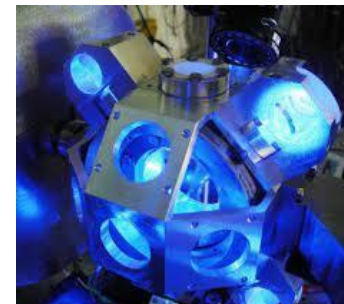
- Metrology for Earth biosphere: cosmic rays, UV radiation & fragility of ozone shielded
- Metrology support for carbon capture utilisation and storage
- Metrological traceability of measurement data from nano to small-microplastics...
- Metrology for harmonization of measurements of environmental pollutants in EU



- Metrology for emerging targeted alpha therapies
- Metrology for innovative nanotherapeutics
- Standardisation of measurements of neurodegenerative disease biomarkers

- Trustworthy virtual experiments and digital twins

- Metrology for quantum-based traceability of the pascal
- Dissemination of the redefined kelvin
- Transportable optical clocks for key comparisons



Browse through our joint research projects
<https://www.euramet.org/research-innovation/search-research-projects/>

thanks for your attention

