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EMN landscape

– EURAMET-internal note –

Background

The EMPIR committee established a series of TPs along a categorisation that is in line with H2020 categories. These are Health, Environment, Energy, Industry (Innovation), which we complemented by TPs SI, Fundamental and Research Potential.

Horizon Europe will be similar but not equal. As far as communicated so far, there will be clusters under Pillar II ‘Global Challenges and European Industrial Competitiveness’ along

1. Health
2. Culture, creativity and inclusive society
3. Civil security for society
4. Digital, industry and space
5. Climate, energy and mobility
6. Food, bioeconomy, natural resources, agriculture and environment

There will be partnerships associated with these clusters. It seems that cluster 5 will get the largest budget share.

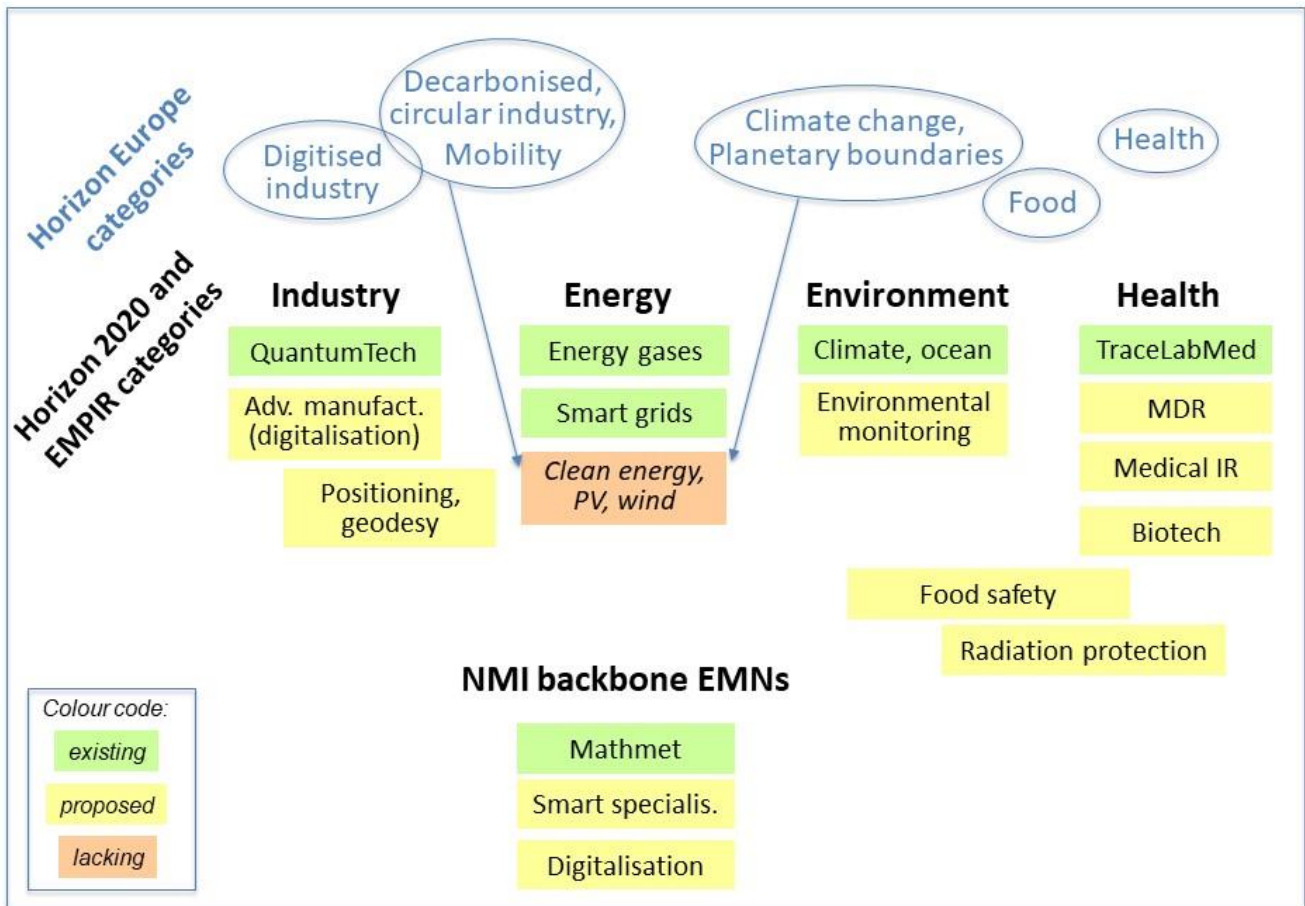
European Metrology Partnership (EMP) will be able to mostly contribute to clusters 1, 4, 5, 6. This means that our partnership EMP will span across at least 4 clusters. Other proposed partnerships are of interest for EMP, like health innovation, key digital technologies (such as artificial intelligence, photonics and quantum technologies), or hydrogen and sustainable energy storage technologies.

In addition, the metrology partnership will be relevant for Pillar III ‘Innovative Europe’.

EURAMET is advised to establish EMNs with scopes overlapping reasonably with these European categories: we will have to describe what we contribute to the key objectives of Horizon Europe, and there will be stakeholder communities to liaise with.

Against this background we analyse the landscape of existing, proposed and missing EMNs in the long run. In the figure the EMNs are assigned to the EMPIR Targeted Programmes and the related, relevant Horizon Europe categories. The assignments are relatively straightforward, understanding that there are always some thematic overlaps.

The existing and proposed EMNs cover the landscape already quite well. A key observation is the lack of at least one EMNs for clean energy / decarbonised industry. A remaining key question is the role of digitalisation. It is mentioned in context with industry, but it is very relevant also for other areas. EURAMET is still challenged to find an answer which generic and which theme-specific support for digitalisation can be developed.



Specific comments:

Industry:

Although quantum technologies include mostly fundamental research, a driver – at least behind the QT flagship – is an emerging quantum industry. This is a key reason for the establishment of the EMN, a purely fundamental research-oriented approach would not require an EMN.

The key challenge for industry is digitalisation, which is addressed in the proposed EMN advanced manufacturing, which may include further ideas from the proposal for a digitalisation EMN.

The EMN on positioning and geodesy is an EMN connected to digital, industry and space, security digitalization and industrial applications, especially mobility.

Energy:

Key stakeholders in this category are from industry. The two existing EMNs should be complemented by an EMN covering PV, wind, water (clean energy), or in Horizon Europe terms “decarbonized industry”.

Environment:

In contrast to the categories industry and energy, where strong private industry drivers exist (which shall be supported), EMNs associated to climate and environment challenge have mostly public stakeholders. The existing EMN on climate and ocean will be complemented by an EMN covering

environmental pollution monitoring. Horizon Europe will introduce the challenge “planetary boundaries” covering pollution of air, water and soil as well as biodiversity. This provides the background behind the scope for that EMN.

Health:

The existing and proposed EMNs seem to cover the health area well.

The proposed EMNs on food safety and radiation protection are in an overlap region between environment and health. The area of food safety suffered from this fact under EMPIR, because proposals were often considered to be outside the scope of TP ENV and TP HEA.

NMI backbone EMNs:

The EMNs Mathmet, nordic and mediterranean smart specialisation and parts of digitalisation may be considered as “NMI backbone EMNs” with predominantly NMIs/DIs as key stakeholders.