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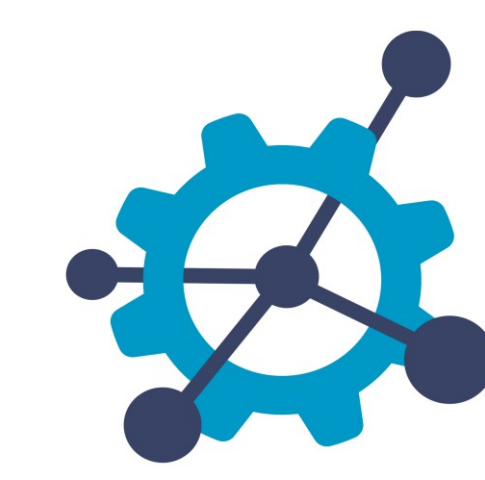
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European Metrology Network (EMN) for Advanced Manufacturing



ADVANCED MANUFACTURING



Georges Favre¹, Daniel O'Connor², Alessandro Balsamo³, Alexander Evans⁴, Fernando Castro², Anita Przyklenk⁵ & Harald Bosse⁵

¹Laboratoire national de métrologie et d'essais (LNE), Paris, France ²National Physical Laboratory (NPL), Teddington, United Kingdom
³Istituto Nazionale di Ricerca Metrologica (INRIM), Torino, Italy ⁴Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany
⁵Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany
 georges.favre@lne.fr

INTRODUCTION

The European Metrology Network (EMN) for Advanced Manufacturing has been established in June 2021. Currently 11 EMNs focussing on different important topics of strategic importance for Europe exist and form an integral part of EURAMET, the European Association of National Metrology Institutes (NMI). EMNs are tasked to

- develop a **high-level coordination of the metrology community in Europe in a close dialogue with the respective stakeholders (SH)**
- develop a Strategic Research Agenda (SRA) within their thematic areas
- provide contributions to the European Partnership on Metrology research programme

Based on the analysis of **existing metrology infrastructures and capabilities of NMIs**, the **metrology research needs for advanced manufacturing** are identified in close cooperation with academic, governmental and industrial stakeholders. Here, we report on **advanced materials metrology needs** addressed in the EMN's preliminary SRA.

WHO WE ARE

EMN members

- 18 European NMI & Designated Institutes (DI) (Figure 1)

Partner Organisations

- European Technology Platform ManuFuture [1]
- EFFRA Made in Europe Partnership [2]
- NanoFabNet [3]
- euspen [4]

Options for formal relationship between

- VAMAS [5]
- AMi2030 [6]

Stakeholder Council

- Currently 12 members from industry
- Representing EMN key industry sectors (Figure 2)

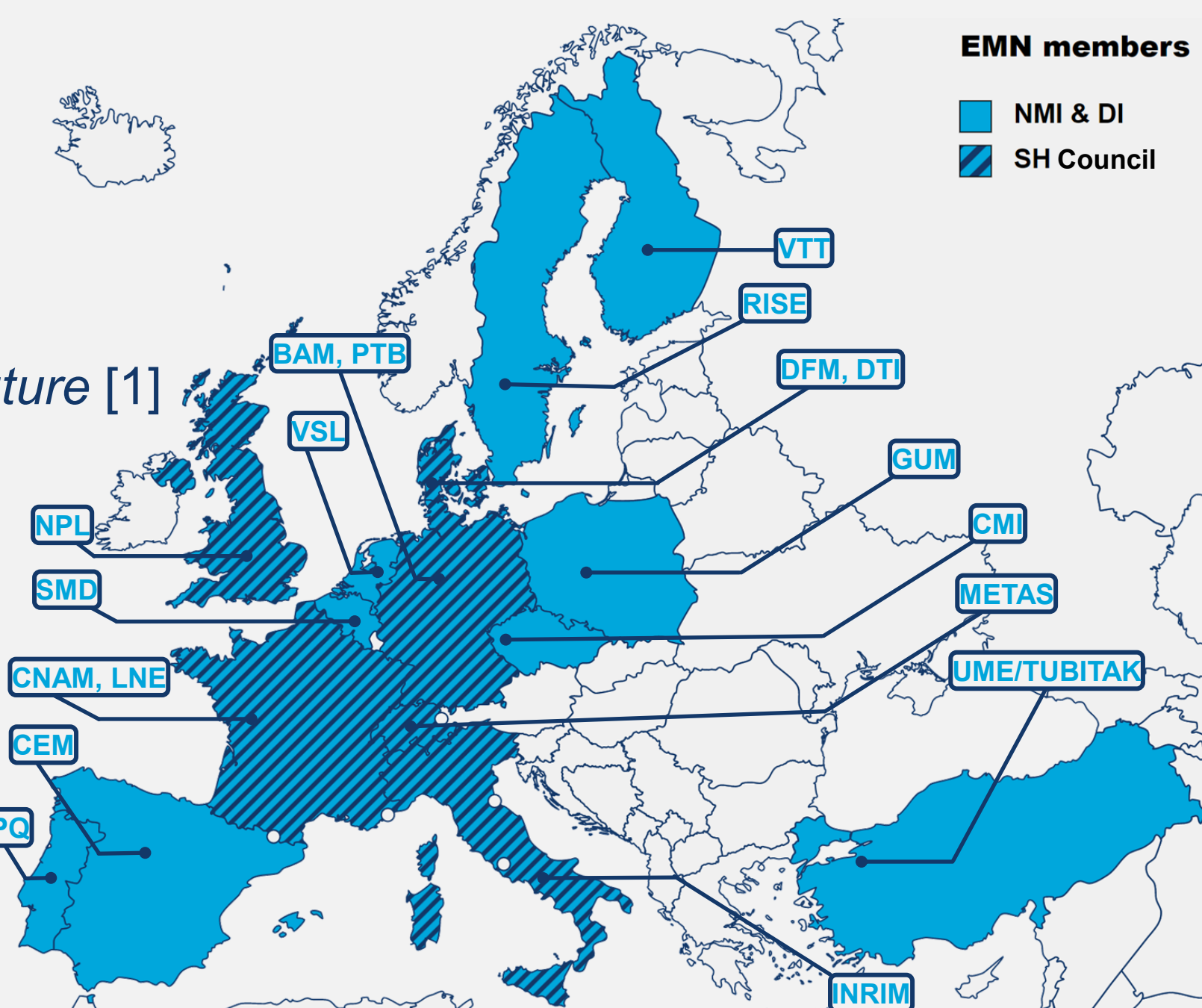


Figure 1: Map of EMN members.

STRATEGIC RESEARCH AGENDA

The EMN for Advanced Manufacturing is developing a SRA to identify priorities for research by Europe's NMIs and DIs and collaboration partners. Download: <https://www.euramet.org/european-metrology-networks/advanced-manufacturing/strategic-research-agenda>. The content of this preliminary versions may change due to ongoing consideration of stakeholder feedback. Updates are planned in summer on a yearly basis.



WHAT WE DO

- Goal: Consideration of metrology aspects for the entire manufacturing chain (Figure 3)
- Cyclic approach for activities (Figure 4)

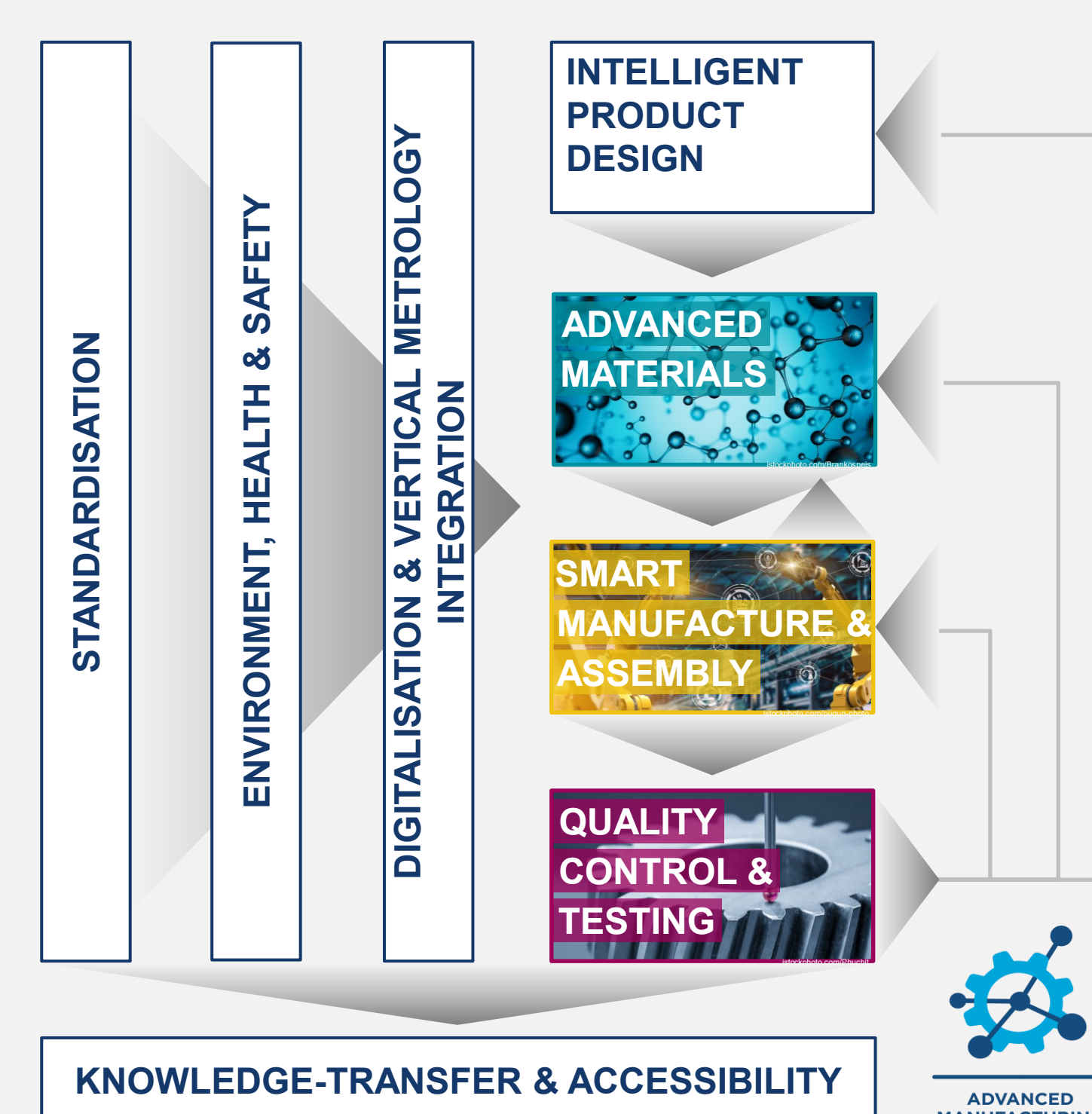
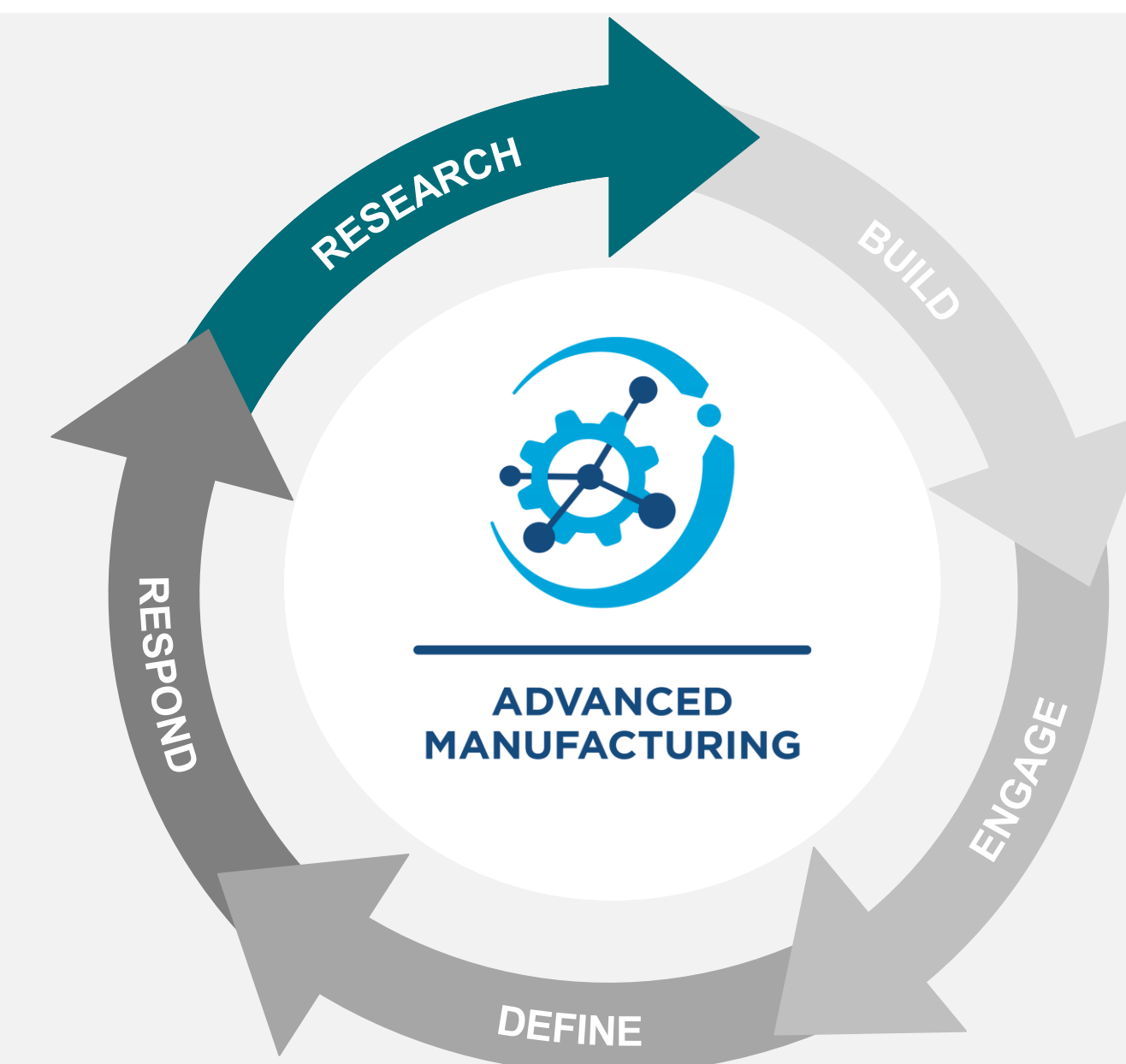


Figure 3: Cross-cutting topics of the manufacturing chain.



- SH mapping & prioritisation according to EMN's KIS
- SH engagement, needs & drivers
- identify and define SH needs
- respond to needs with SRA and roadmap
- collaborative research projects on metrology topics with high impact on European industry

Figure 4: EMN activities general approach by EMN for Climate and Ocean Observation.

KEY INDUSTRY SECTORS

Ongoing stakeholder dialogue in all key industry sectors via frequently held **workshops** and **open consultation events** on special topics. An **online service desk** is in preparation and will be available soon.

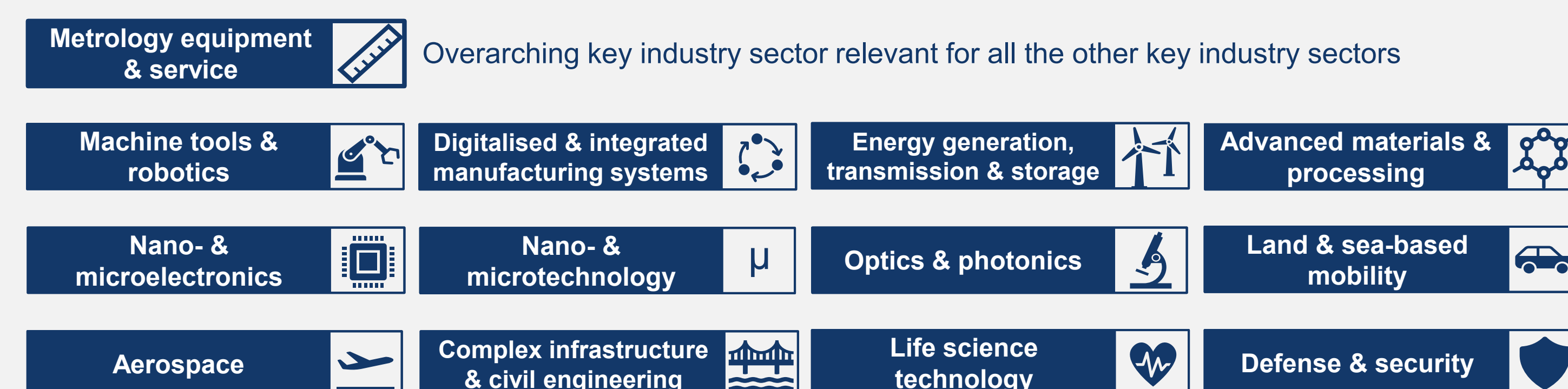
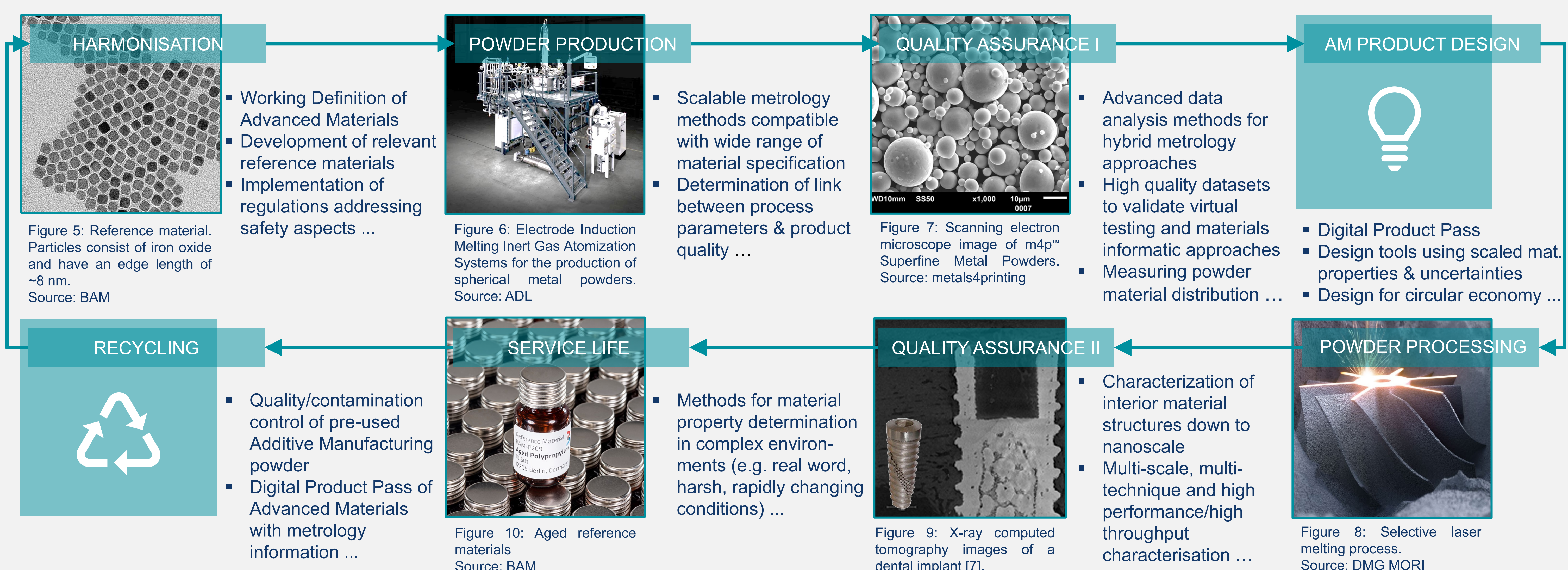


Figure 2: KIS of the EMN.

METROLOGY NEEDS IN ADVANCED MATERIALS

Advanced Materials addresses metrology and characterisation methods that are required to fully exploit the innovation potential of advanced materials, while ensuring safety and environmental compatibility. This encompasses the whole life cycle of manufactured products.

NEEDS ALONG THE ADVANCED MATERIALS LIFE CYCLE: EXAMPLE OF ADDITIVE MANUFACTURING



Cross-cutting topics:

- Working definition of Advanced Materials
- Harmonisation for increased comparability
- Reference materials
- Implementation of regulations, regulatory preparedness and safety aspects
- Metrology for:
 - Materials in complex environments
 - Multi-techniques characterisation methods
 - Process analytical techniques

EMN ACTIVITIES WITH RESPECT TO THE EUROPEAN PARTNERSHIP ON METROLOGY PROGRAMME



Figure 11: Timeline of EMN activities and European Partnership on Metrology programme. *Potential Research Topic **Selected Research Topic *** Joint Research Projects

CONTACT & NEWSLETTER SUBSCRIPTION

Get in touch via email advancemanu@euramet.org and visit our website www.euramet.org/advanced-manufacturing or subscribe to our newsletter by using the QR code on the right.



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