European Commission: Activities in the Framework of Industrial Commons
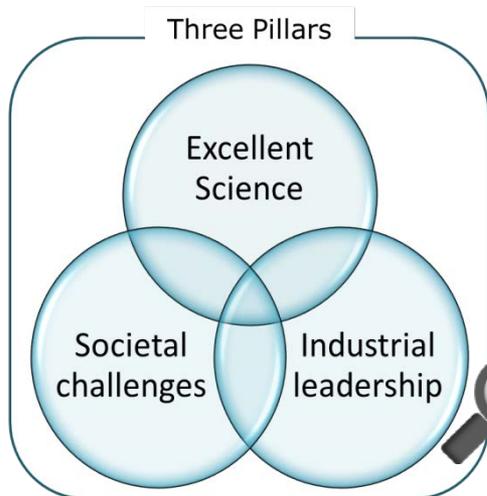
Dr. Anne F. de Baas

DG Research and Innovation

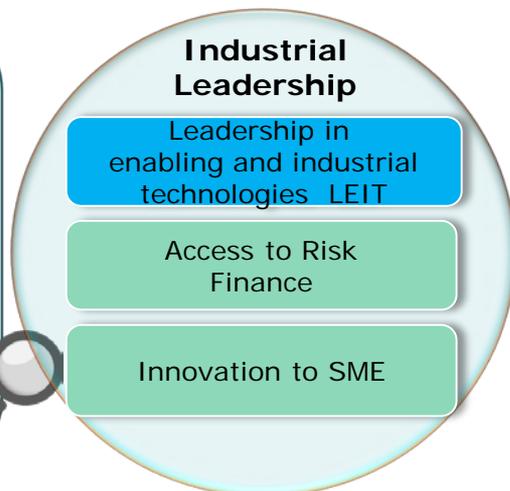**Directorate "Industrial Technologies"**

EMMC International Workshop 2019
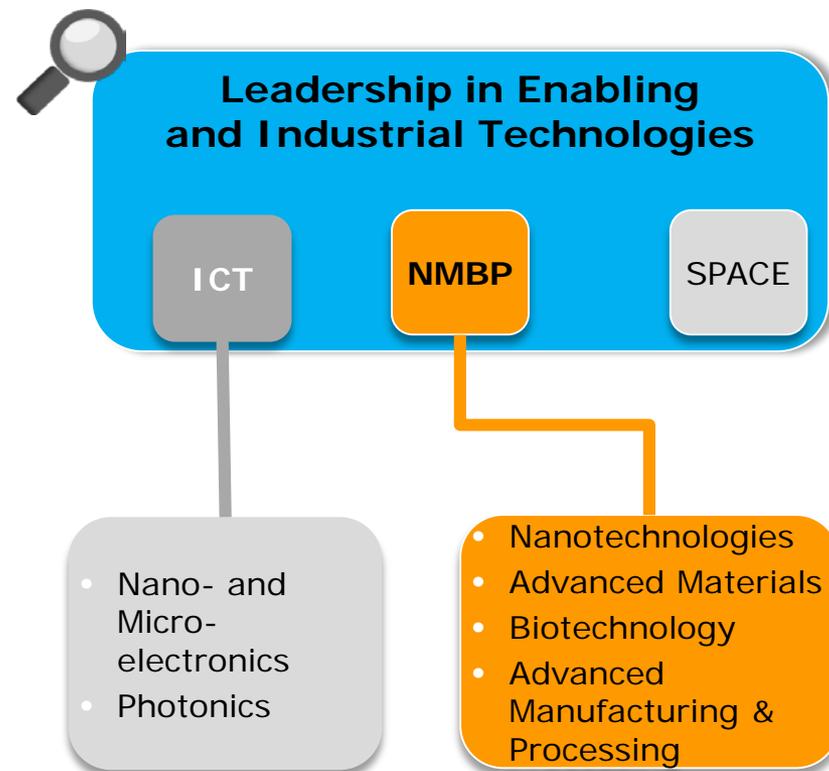
25 February 2019

NMBP in Horizon 2020

HORIZON 2020

Three Pillars

- Excellent Science
- Societal challenges
- Industrial leadership

**Indicative budget:
75 billion € ***

Industrial Leadership

- Leadership in enabling and industrial technologies LEIT
- Access to Risk Finance
- Innovation to SME

**Indicative Budget:
16.5 billion € ***

**Out of it for NMBP:
3.8 billion € ***

Leadership in Enabling and Industrial Technologies

- ICT
- NMBP
- SPACE

- Nano- and Micro-electronics
- Photonics

- Nanotechnologies
- Advanced Materials
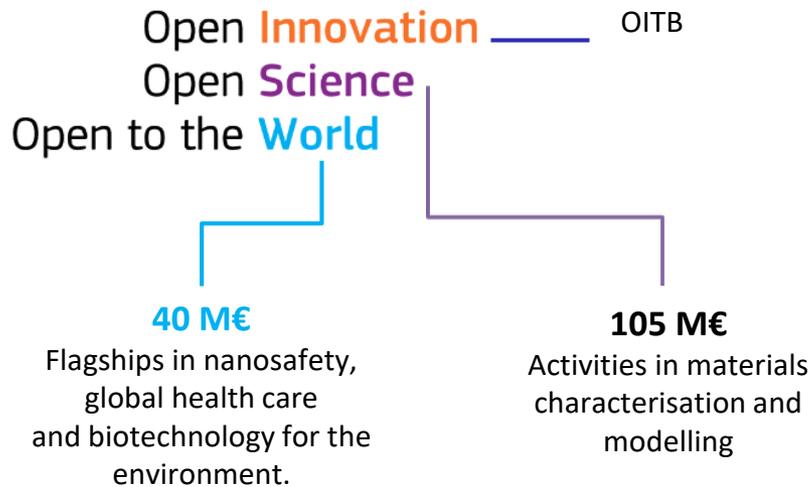- Biotechnology
- Advanced Manufacturing & Processing

* July 2015 – includes EIT, JRC, "Science with and for Society", "Spreading Excellence / Widening Participation", in addition to three priorities above

Research and Innovation

European Commission

WP 2020 LEIT-NMBP – Targeted impact

THE THREE 'Os'

Open **Innovation** ——— OITB
Open **Science**
Open to the **World**

40 M€
Flagships in nanosafety,
global health care
and biotechnology for the
environment.

105 M€
Activities in materials
characterisation and
modelling

FOCUS AREAS NMBP contribution

+1.5%

+2.2%

+15%

**Digitising
Industry**

**Circular
Economy**

**Low
Carbon**

713M€
(250M€ in 2020)

378 M€
(143.5M€ in 2020)

284 M€
(105M€ in 2020)

BIG TICKET

- **Industry Commons** 2 topics – 8M€

sharing industrial research data

linked to the
  - Open Access data initiatives
  - Science Cloud

NMBP Calls 2020

Calls

Impacts

FOUNDATIONS FOR TOMORROW'S INDUSTRY
~ 395 M€

Materials, characterisation, processing
Eco-system for design/testing/upscaling of materials

TRANSFORMING EUROPEAN INDUSTRY
~ 525 M€

Global industrial leadership for re-industrialisation

INDUSTRIAL SUSTAINABILITY
~ 665 M€

Less energy input, more energy/resource efficiency

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NMBP Work Programme for 2020

- **Trends in WP2020:**

    Transition to Horizon Europe

    Most pre-published topics will remain

- **Currently: discussion with stakeholders and Member-States**

- **Publication early summer 2019**

European Commission

WP2020 Industrial Commons

➢ **Definition**

- Sharing R&D-derived knowledge, data, and capabilities for design, engineering and manufacturing, applicable across industry sectors

➢ **Rationale**

- Industrial Commons is a tool to accelerate innovation

- Re-use of data stimulates the development of new products, services, materials and manufacturing processes.

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WP2020 Industrial Commons ctd

➢ **Objectives**

- Standardise the documentation of data through taxonomies and ontologies

- Making data accessible and enabling its re-use across different domains

- Enable domains to connect, link and exchange information

- Create a common information system that would allow data sharing and enable new or improved materials, products, processes and services

Make the data FAIR

(findable, accessible, interoperable and re-usable)

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NMBP WP2020 – Industrial Commons

➢ **Call for Proposals**

- Topic 1: Towards Standardised Documentation of Data through taxonomies and ontologies (CSA)

- Topic 2: Creating an open market place for industrial data (RIA)

Recent Activities
(workshops & communications)

➤ **Workshops**

- Industrial Commons as a tool to drive innovation in EU (June '18, Brussels)

- Materials and Manufacturing Ontology Workshop (June '18, Brussels)

- IntOp 2017 and 2018

- EMMC international workshops

- EC ontology workshop June 2019

➤ **Documents**

- 2018 Communication "Towards a common European Data Space"

- Working Document "Guidance on sharing private sector data in the European data economy"

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Commons and Ontologies Workshops

➢ **Main Conclusions (Ontologies)**

- Ontologies support the intermediate structuring and meaningful storage of data, enabling and speeding up AI

- Wide range of efforts and approaches in ontologies ranging from fundamental ontologies to purely application-oriented ontologies

- The power of ontologies demonstrated in applications, including data-mining, data-base linking, as well as reasoning example (early AI)

- Addressing a number of challenges in engineering

- Need for one common ontology across a field (i.e. materials) to enable knowledge extraction and exchange is clearly endorsed

European Commission

Workshops

> ## Recommendations

- Ensuring sustainable support for open data repositories across Europe

- Ensure harmonisation and good data management practice (i.e. Data Management Plans will become mandatory in projects in "Horizon Europe").

- Build an integrated knowledge framework to generate value from data (ontology). The audience is convinced that exchange and collaboration has to be based on a common ontology. Starting with the domain of materials and manufacturing would be a good start.

- Build an ecosystem to share data.

- Establish a system of trust that takes human factors into account.

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➢ **Call for Proposals**

1 topic RIA-4M€ **materials modelling workflow**

Thank you for your attention