

OPORTUNIDADES DEL NUEVO PROGRAMA DE TRABAJO 2018: LIDERAZGO INDUSTRIAL

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Dentro de H2020 nos centramos en...

1. Excellent Science

European Research Council

Future and Emerging Technologies

Marie Curie Actions

Research Infrastructures

2. Industrial Leadership

Leadership in Enabling & Industrial Technologies

- Information and communication technologies
- nanotechnologies
- advanced materials
- biotechnology
- advanced manufacturing and processing
- space

Access to Risk Finance

Innovation in SME

3. Societal Challenges

7 Challenges

- Health, Demographic Change and Wellbeing
- Food security, sustainable agriculture, marine and maritime research and the bio-economy
- Secure, Clean and Efficient Energy
- Smart, Green and Integrated Transport
- Climate Action, Resource Efficiency and Raw Materials
- Europe in a changing world: Inclusive, Innovative and Reflective Societies
- Secure Societies – Protecting Freedom and Security of Europe and its Citizens

Joint Research Centre (JRC)

Widening Participation

Science with & for Society

European Institute of Innovation and Technology (EIT)

Joint Programming P2P

Joint Technology Initiatives (JTIs) P2B

Spreading excellence

Science for & with Society

De las prioridades Juncker... las relevantes para los Retos Sociales

European Commission logo

EUROPEAN COMMISSION
Towards the Juncker Commission

European Commission > About the European Commission > Towards the Juncker Commission > 10 Priorities

Section contents

- Jobs, Growth, Investment
- Digital Single Market
- Energy Union
- Internal Market
- Economic & Monetary Union
- Free Trade
- Justice & Fundamental Rights
- Migration
- A Global Actor
- Democratic Change
- More on my priorities

10 Priorities



A New Boost for Jobs, Growth and Investment

My first priority as Commission President will be to strengthen Europe's competitiveness and to stimulate investment for the purpose of job creation. I intend to present, within the first three months of my mandate and in the context of the Europe 2020 review, an ambitious Jobs, Growth and Investment Package worth €300 billion.



A Connected Digital Single Market

I believe that we must make much better use of the great opportunities offered by digital technologies, which know no borders. To do so, we will need to have the courage to break down national silos in telecoms regulation, in copyright and data protection legislation, in the management of radio waves and in the application of competition law.



dependency of several of our Member States.

A Resilient Energy Union with a Forward-Looking Climate Change Policy

Current geopolitical events have forcefully reminded us that Europe relies too heavily on fuel and gas imports. I therefore want to reform and reorganise Europe's energy policy into a new European Energy Union. We need to pool our resources, combine our infrastructures and unite our negotiating power vis-à-vis third countries. We need to diversify our energy sources, and reduce the high energy



A Deeper and Fairer Internal Market with a Strengthened Industrial Base

Y de las Focus Areas 2018-2020...

- Personalising health and care
- Sustainable food security
- Blue growth: unlocking the potential of seas and oceans
- Smart cities and communities
- Competitive low-carbon energy
- Energy Efficiency
- Mobility for growth
- Waste: a resource to recycle, reuse and recover raw materials
- Water innovation: boosting its value for Europe
- Overcoming the crisis:
- Disaster-resilience
- Digital security

- Industry 2020 in the Circular Economy
- Internet of Things
- Smart and Sustainable Cities
- Sustainable Food Security – Resilient and resource-efficient value chains
- Energy Efficiency
- Digital Security
- Blue Growth - Demonstrating an ocean of opportunities
- Competitive Low-carbon Energy
- Automated Road Transport – The New Frontier

12 focus areas
in WP 14-15

4 focus areas
in WP 18-20

9 focus areas
in WP 16-17

- ✓ Building a **low-carbon, climate resilient** future
- ✓ Connecting economic and environmental gains – the **Circular Economy**
- **Digitising** and transforming **European industry** and services
- ✓ Boosting the effectiveness of the **Security Union**

Timing...

Today...

Q1-2016 → Q3-2016

Q3-2016 → → → Q4-2016

Q1-2017

→ Q4-2017

Foresight and
stakeholder
consultation (Advisory
Groups)

Consultation Member
States

Strategic
Priorities
&
Budgeting

Elaboration and adoption
of work programmes

About 18 months

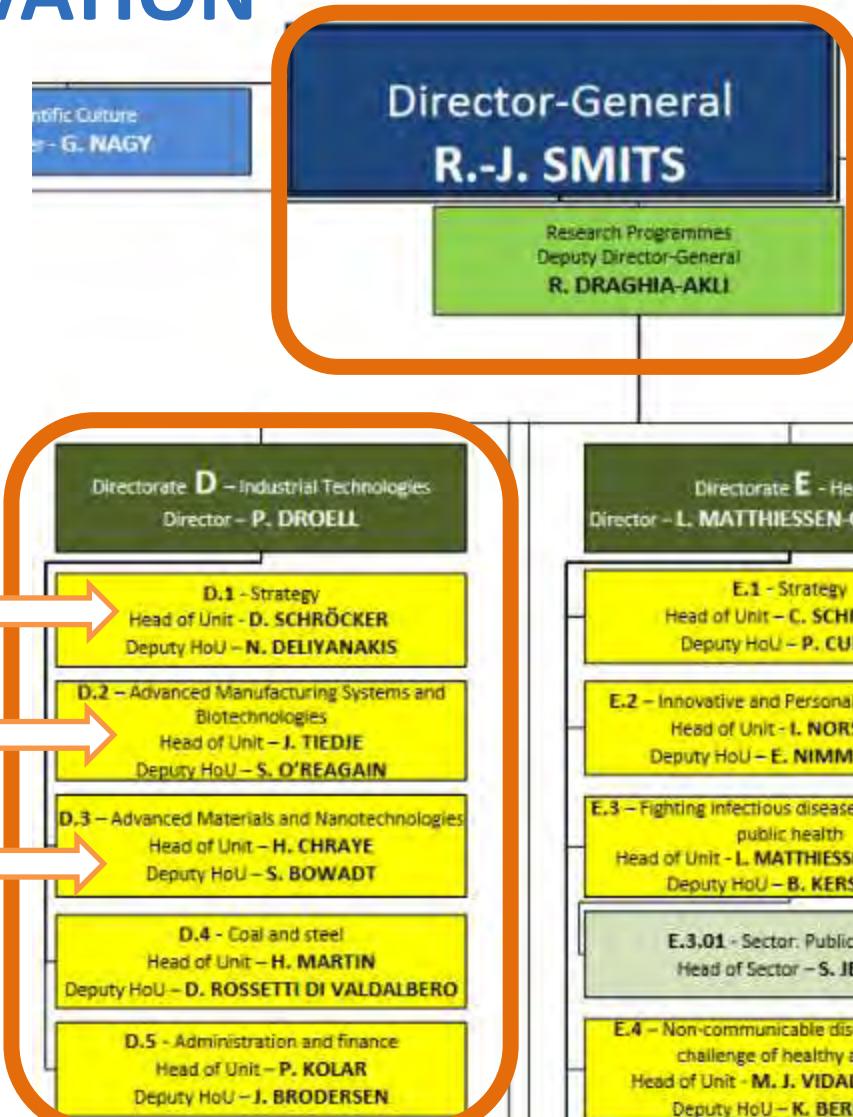
Borradores de programas de trabajo consolidados e inicio consulta inter-servicios de la EC (primera semana Jul-2017, approx).

Oportunidades en el ámbito de “NMBP”....

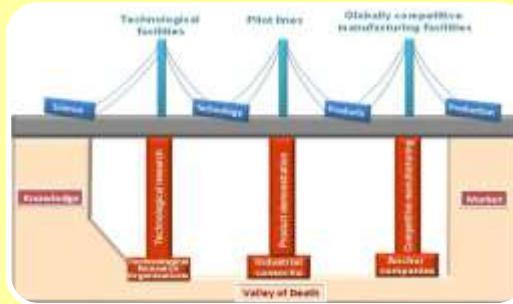
DIRECTORATE-GENERAL for RESEARCH and INNOVATION

Sinergias
fondos, Plan
de negocio...

BP
NM



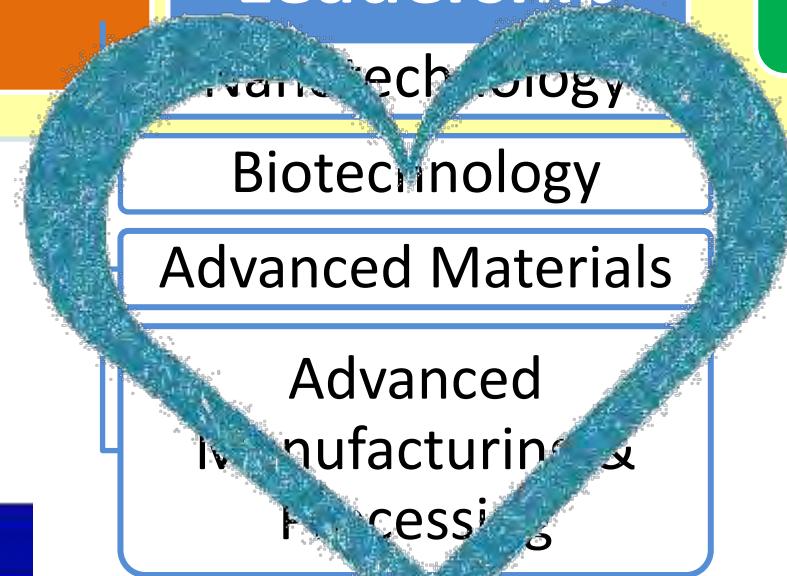
Horizonte 2020



Excellent
Science

Industrial
Leadership

Societal
Challenges



Liderazgo Industrial en H2020

17.900 M€

Leading in Enabling and Industrial Technologies
(LEIT)

13.800 M€

Tecnologías de la Información y la Comunicación

Nanotecnologías

Materiales Avanzados

Fabricación y Procesos

Biotecnología

Espacio

Acceso a financiación de riesgo

Innovación en las PYME

3.800 M€

500 M€

Contexto político

Four of the President's priorities:

- To boost jobs, growth and investment;
- To realise a connected digital single market;
- To implement a resilient Energy Union with a forward looking climate change policy;
- To make Europe a stronger global actor

**Priorities of
Commissioner Moedas:**

**Open innovation
Open science
Open to the world**

Contexto político

- **Sustainable jobs and growth:**
Boost jobs, growth and investmentDeeper and fairer internal market with a strengthened industrial base
- **Re-industrialisation of EU:**
towards a strong industrial base
- **Digital Single Market:**
Factories of the Future, '4th industrial revolution'
- **EU Energy Union:**
Energy-efficient Buildings, Materials for Energy, etc.
- **Circular economy:** boosting growth and renewing industrial capacities in a world of finite resources → focus area in 2016-2017 on 'Industry 2020 in the Circular Economy'

Criterios de Evaluación

FASE 1

- 10 pags
- Consorcio
- Umbral Flotante

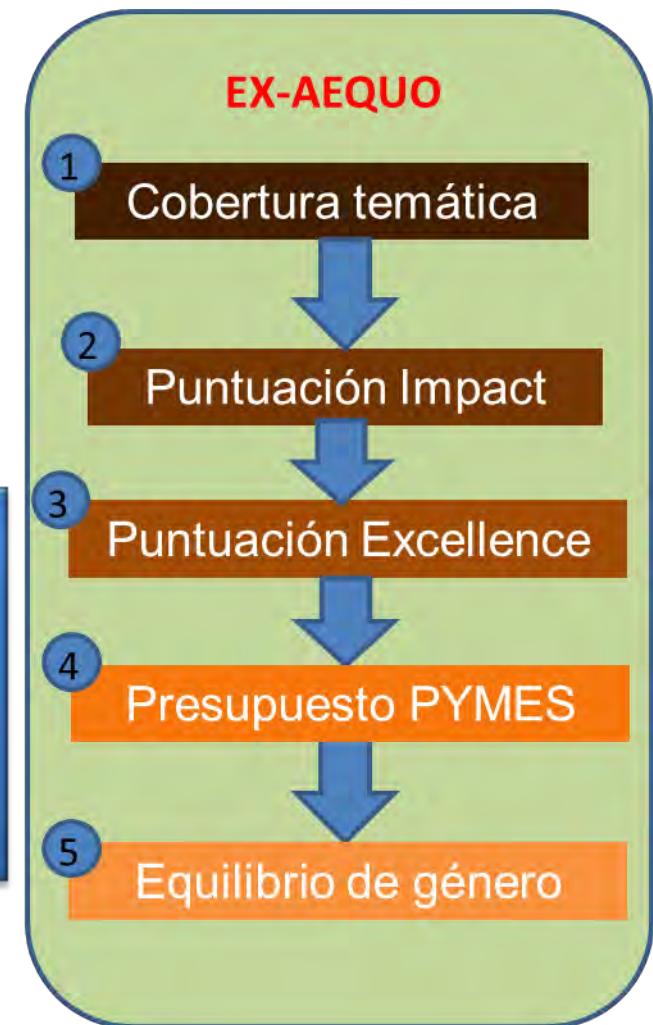
Excellence (4/5)
Impact (4/5)
TOTAL (8/10)

FASE 2

o
Una Fase

Excellence (4/5)
Impact (4/5)
Implementation (3/5)
TOTAL* (12/15)

* Peso nota Impacto x1.5 en IA!!!



WP NMBP 2018-20

Nanosafety



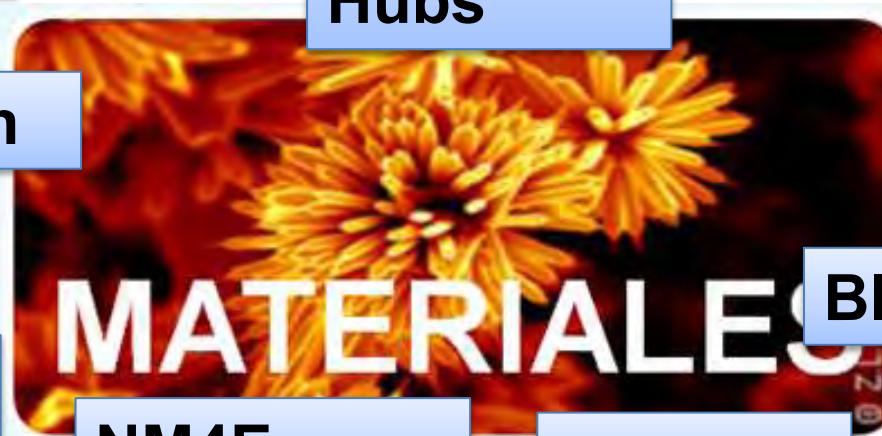
Modelling

Characterisation

Cultural
Heritage

Open
Innovation
Hubs

Circular
Economy



NM4Energy

MedTech

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DT-NMBP-02-2018: Open Innovation Hubs for Safety Testing of Medical Technologies for Health (IA)	11
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DT-NMBP-04-2020: Upscaling of bio-based nano-materials and solutions (IA)	13
DT-NMBP-05-2020: Upscaling of functional materials for building envelopes (IA)	13
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NMBP-17-2020: Regulatory science for medical technology products (RIA) – INCO with US, Japan, but not exclusively	25

- IAs from "laboratory tested" (TRL 4-5) to "industrially proven" (TRL 7)
- 20% en servicios para SMEs

Liderados por especialistas en nano-materiales...

Call - TRANSFORMING EUROPEAN INDUSTRY 28

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DT-FoF-01-2018: Skills needed for new Manufacturing jobs (CSA)	30
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DT-FoF-03-2018: Innovative manufacturing of opto-electrical parts (RIA)	33
DT-FoF-04-2018: Pilot lines for metal Additive Manufacturing (IA 50%)	34
DT-FoF-05-2019: Open Innovation for collaborative engineering production (IA)	36
DT-FoF-06-2019: Refurbishment and re-manufacturing of large industrial equipment (IA)	37
DT-FoF-07-2020: Reliable and accurate assembly of micro parts (RIA)	38
DT-FoF-08-2019: Pilot lines for modular factories (IA 50%)	38
DT-FoF-09-2020: Holistic energy-efficient factory management (IA)	40
DT-FoF-10-2020: Pilot lines for large-part manufacturing (IA 50%)	40
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DT-NMBP-18-2019: Materials, manufacturing processes and devices for organic and large area electronics (IA)	41
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2.2 BIOTECHNOLOGY

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BIOTEC-02-2019: Boosting the efficiency of photosynthesis (RIA)	
BIOTEC-03-2018: Synthetic biology to expand diversity of nature's chemical products (RIA)	50
CE-BIOTEC-04-2018: New biotechnologies for environmental remediation (RIA)	51
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RIA (TRL 3→5) environmentally friendly and sustainable solutions for managing the waste of plastics mixtures based on the use of communities of microorganisms with a set of complementary enzymes.

Call - INDUSTRIAL SUSTAINABILITY 59

3.1. SUSTAINABLE PROCESS INDUSTRY (SPIRE) 60

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CE-SPIRE-02-2018: Processing of material feedstock using non-conventional energy sources (IA)	61
CE-SPIRE-03-2018: Energy and resource efficiency in highly energy intensive industries (IA).....	63
CE-SPIRE-04-2019: Efficient integrated downstream processes (IA 50%)	64
CE-SPIRE-05-2019: Adaptation to variable feedstock through retrofitting (IA)	66
DT-SPIRE-06-2019: Digital technologies for improved performance in cognitive production plants (IA 50%)	67
CE-SPIRE-07-2020: Recovery of industrial water, thermal energy and substances contained therein (IA)	69
CE-SPIRE-08-2020: Improved Industrial Processing using novel high-temperature resistant materials (RIA)	69
CE-SPIRE-09-2020: Making the most of mineral waste, by-products and recycled material as feed for high volume production (IA)	69
CE-SPIRE-10-2018: Improved production of recyclable materials containing plastics (IA)	69

3.2. CATALYSING THE CIRCULAR ECONOMY..... 72

CE-NMBP-23-2018: Catalytic transformation of hydrocarbons (RIA)	72
CE-NMBP-24-2019: Photocatalytic synthesis (RIA)	72
CE-NMBP-25-2020: Materials and structures with intelligent recycling design (RIA).....	75

La mayoría
demostración!



Sustainable Process Industry through
Resource and Energy Efficiency



□ Process Industry Conference, 19-Sep, BRU
□ cPPPs Infoday, 04-Oct, BRU

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LC-EeB-03-2019: New developments in plus energy houses (IA)	85
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LC-EeB-05-2019/20: Integrated storage systems for residential buildings (IA)	86
LC-EeB-06-2018/20: ICT for proactive residential buildings and construction, design to end of life (IA)	87

IA de
demostración
en/para
museos
pequeños/me
dianos!

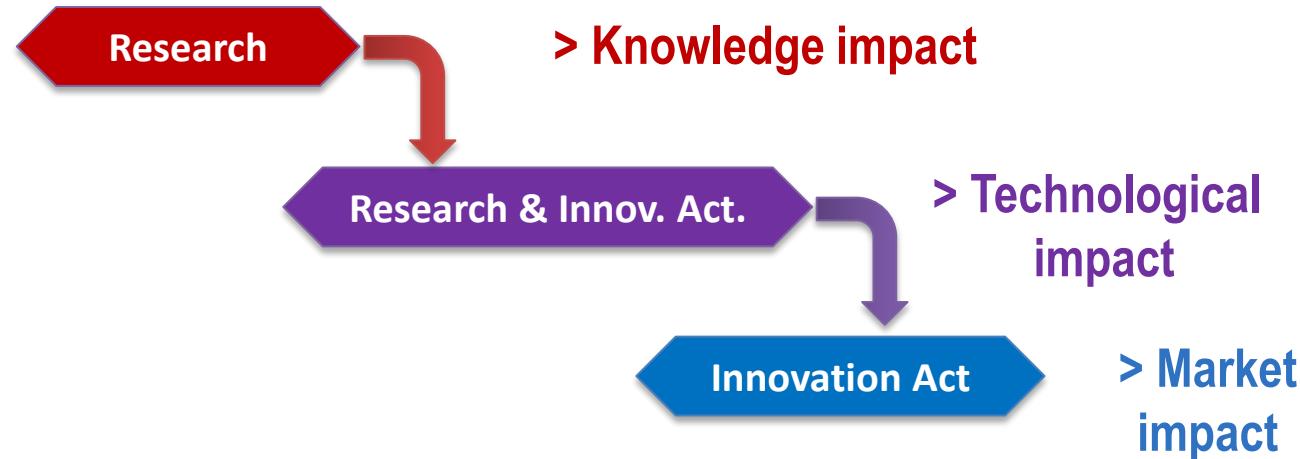
Estrategia en los próximos meses...

- Eventos de las cPPPs FoF, Spire...
- Alianza con usuario final significativo en Innovation Actions...

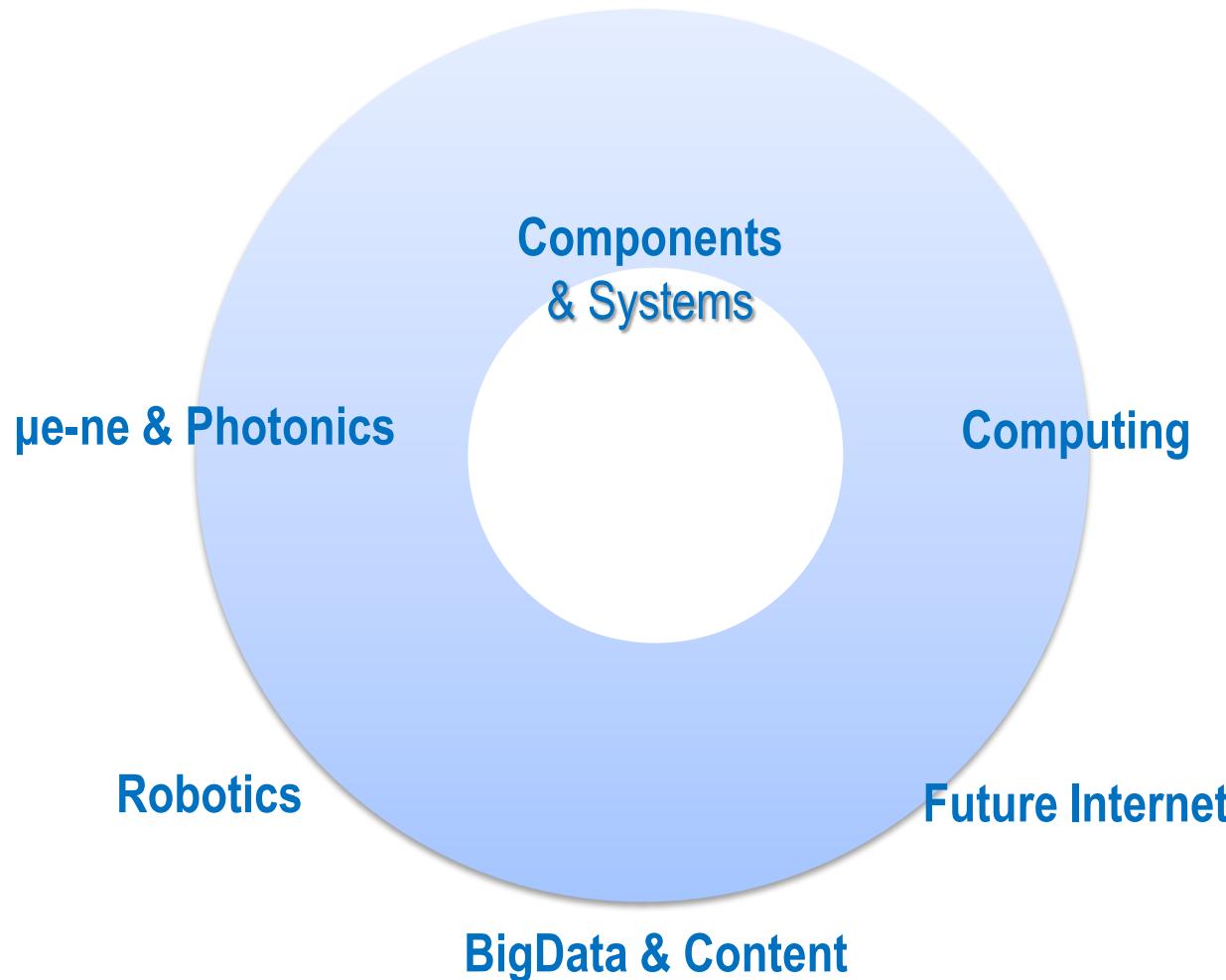
**Oportunidades
en el ámbito de “ICT”...**

Technology readiness levels (TRL)

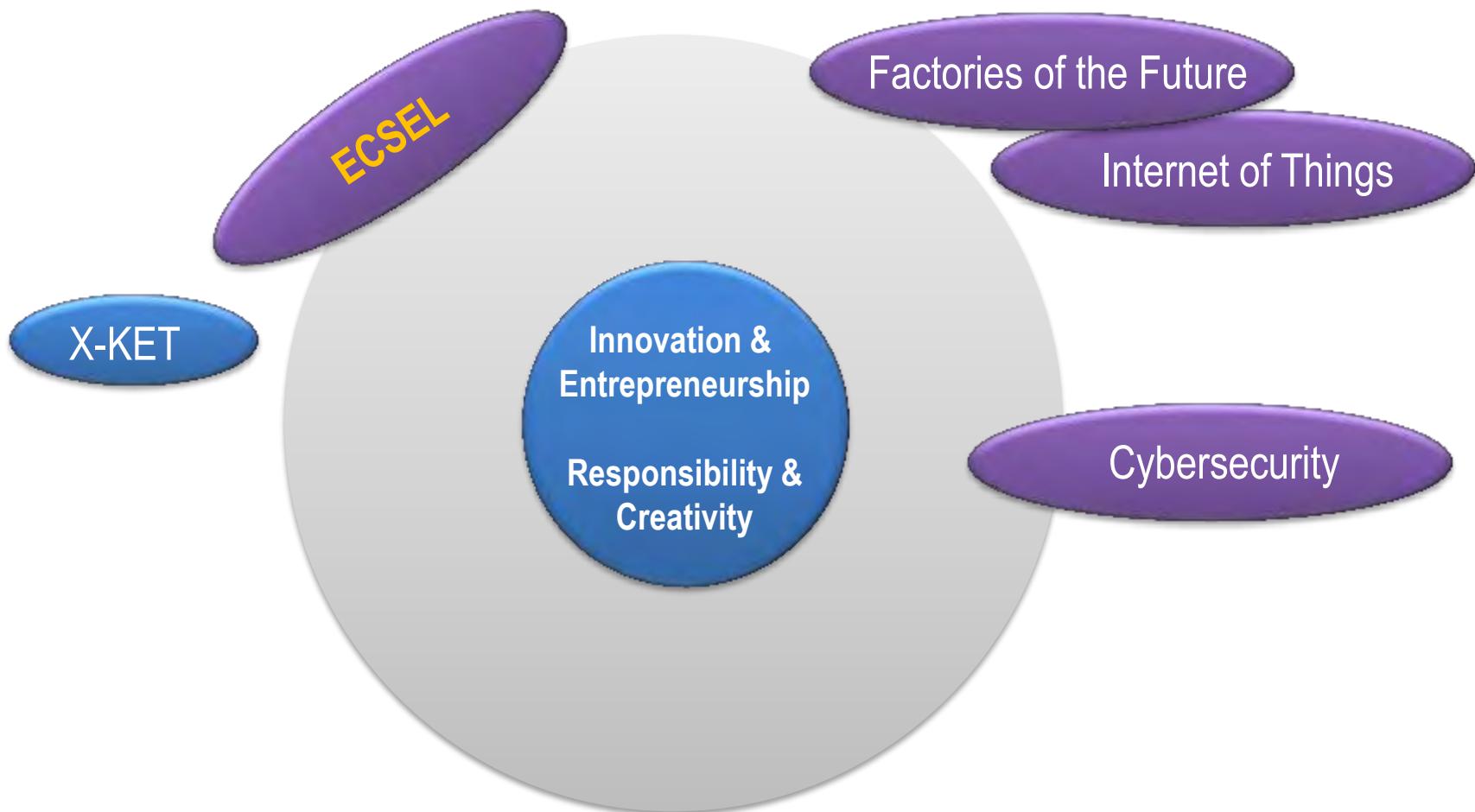
Technology readiness level (TRL)	1	2	3	4	5	6	7	8	9
Activity	Discovery & Research		Innovation					Commercialisation	
TRL description	Basic principles observed and reported	Concept or application formulated	Experimental proof of concept	Concept or process validated in laboratory	System or component validated in relevant environment	System model or demonstrator in relevant environment	System prototyping demonstrator in an operational environment	Actual system completed and qualified test & demo operational environment	Actual system mission-proven in successful mission operations



ICT-2016-17- Areas Tecnológicas



ICT- 2006-17 Iniciativas adicionales





Unión de:

- ARTEMIS: Sistemas Empotrados
- ENIAC: Micro-Nanoelectrónica
- EPoSS: Sistemas Inteligentes

Electronic Components and Systems are a pervasive Key Enabling Technology, impacting all industrial branches and almost all aspects of life.

ECSEL JU offers funding for Research, Development and Innovation projects with unparalleled systemic and strategic impact for smart, sustainable and inclusive economic growth.

> NEXT



Investigación Aplicada y Orientada a Mercado

Cofinanciación UE y EEMM:

<http://www.ecsel-ju.eu/web/calls/general-info.php>

JTI ECSEL
1.200 M€

ICT-WP2018-20 Areas Tecnológicas



ICT-WP2018-20

1. Digitising European Industry

Components
& Systems

μe-ne &
Photonics

Robotics

Local
Manufacturing

ICT-WP2018-20

1. Digitising European Industry

AEROBI: AErial RObotic system for in-depth
Bridge Inspection by contact

RockEU2: Robotics
Coordination Action for Europe Two

SAFety and secURity by design for interconnected
mixed-critical cyber-physical systems

Smart Phone for Disease Detection from
Exhaled Breath

DIMENSION: Directly Modulated Lasers on Silicon
Self-amplified photonic biosensing platform for
microRNA-based early diagnosis of diseases

Compact High pErformance QUantum cascadE laseR Sensors

2. European data infraestructure

HPC

Cloud

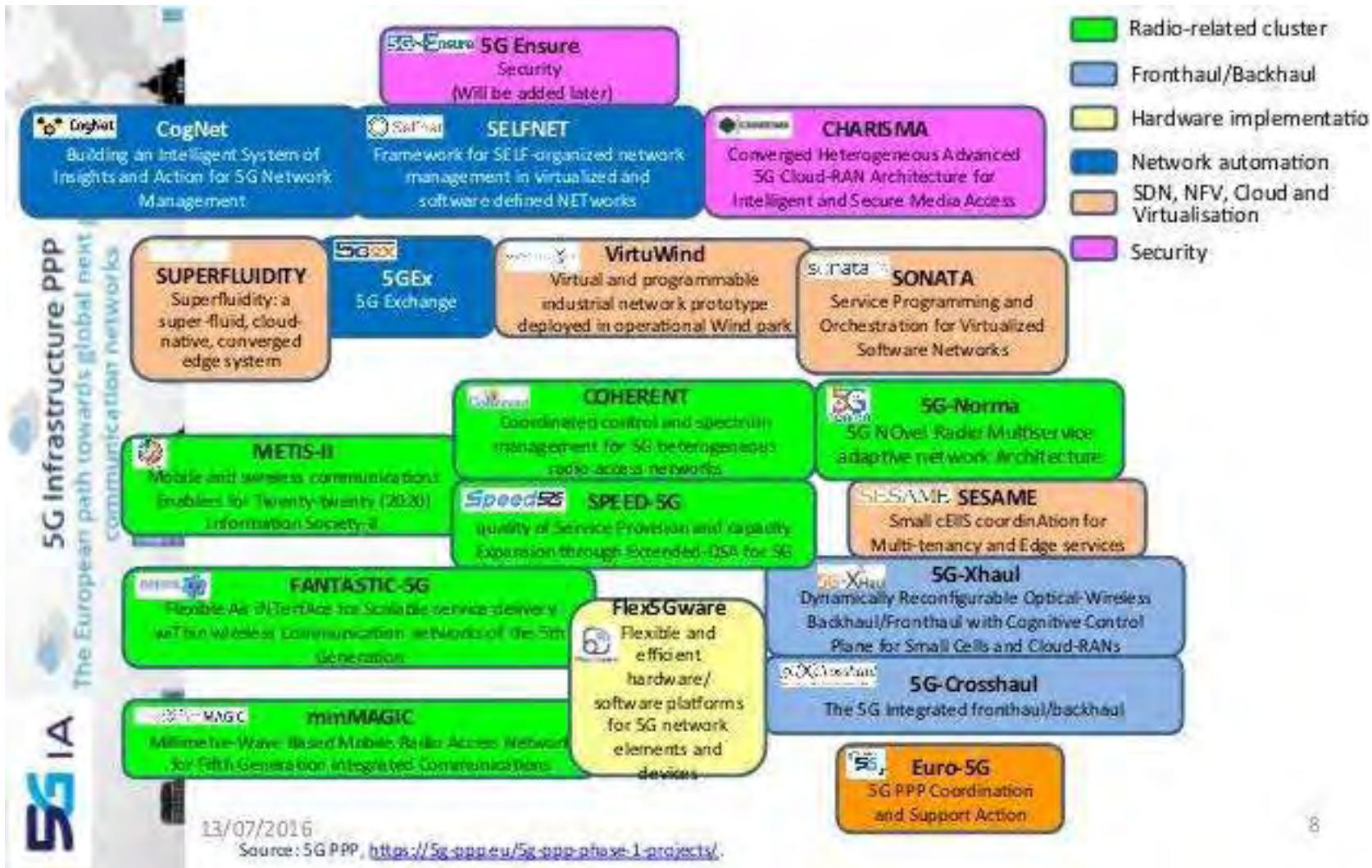
Big Data

3. 5G-PPP

- 5G End To End Demonstrator
- 5G For connected & *automated driving*
- 5G Validation trials (@ *vertical industries*)
- 5G Long Term Evolution
- International cooperation (p.e., with USA, Taiwan, China,...)

ICT-WP2018-20

3. 5G-PPP



4. Next generation internet



NGI



Interactive Technologies



Artificial Intelligence



IoT



Future Hyperconnected Sociality



Next Generation Media



Multilingual, Inclusive NGI

5. Cross cutting & International

PROTEUS: Scalable online machine learning for predictive analytics and real-time interactive visualization

SYNCHRONICITY: Delivering an IoT enabled Digital Single Market for Europe and Beyond

Content4All: Personalised Content Creation for the Deaf Community in a Connected Digital Single Market

5. Cross cutting & International



STARS



Start-Up Europe



PcP



Fintech



Standardisation



International Cooperation

The background image shows an aerial perspective of an industrial complex. Several large buildings, possibly refineries or chemical plants, are visible, with prominent smokestacks emitting thick, white plumes of smoke or steam into the air. The surrounding landscape includes green fields and other industrial structures under a clear blue sky.

FOCUS AREA

H2020-DT-2018-20

Digitising & transforming european
industry & services

H2020- DT-2018-20

Instrumentos

Plataformas



- Desarrollo de tecnología
- Base para aplicaciones

Pilotos



- Innovación
- Desarrollo aplicaciones sobre plataformas
- Difusión a nivel europeo
- De gran dimensión

DIH



- Expansión
- Cluster de entidades en una región/tecnolog.
- CCs & SMEs
- “Marketplace”, mentoring, financing (Cascade funding)

H2020- DT-2018-20

Instrumentos



Offer services for digital transformation of companies

- Supporting experimentation and testing with new technologies
- Supporting fabrication of new products
- Showcasing technologies in pilot factories
- Fab-labs, etc..

*Ej: Technical Univ. of Munich (DE)
UPM, AIMEN*



Offers other relevant innovation services, such as:

- mentoring services
- access to finance for growth of companies
- advice on access to new markets
- access to competence centers

*Ej: University of Parma (IT)
BrainsBusiness (DN)
Prodintec*

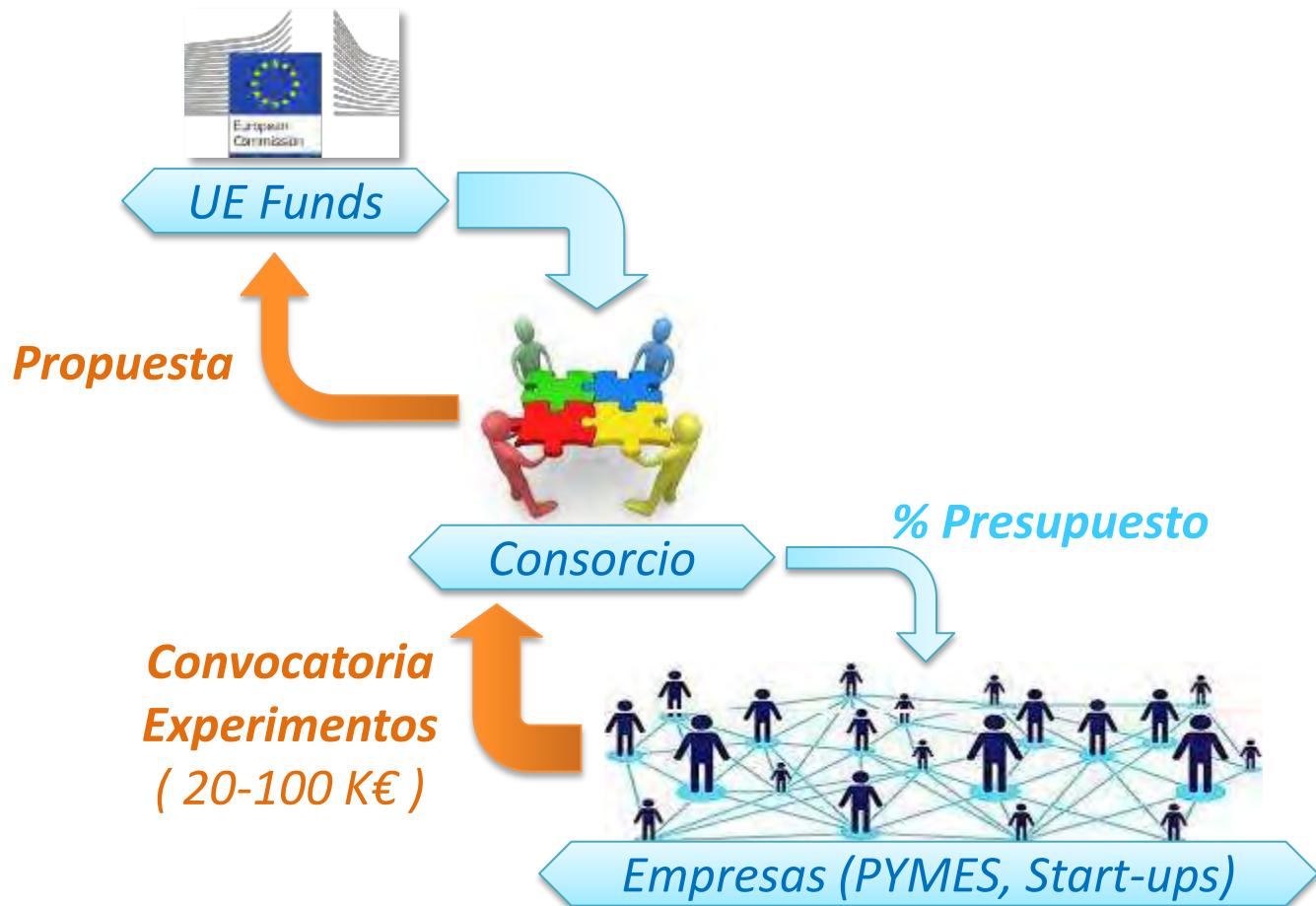


CloudFlow:
Computational
Cloud Services and
Workflows for Agile
Engineering



European Network of
competences and platforms for
enabling SME from any sector
building innovative CPS products
to sustain demand for European
manufacturing.

ICT- WP2018-20: “Cascade Funding”



H2020-DT-2018-20

Áreas temáticas en las que desarrollar Platforms & Pilots



Connected Smart Factories



Agriculture



Service platforms for rural economies



Smart and energy-efficient homes



Smart living at home



The smart hospital of the future



Supporting cross-cutting pilots

- Assurance of **resilience** in evolving ICT systems.
- Dynamic countering of **cyber-attacks**
- **Advanced technologies** for cybersecurity and digital privacy.
- **Quantum technologies** for cybersecurity.

Estrategia en los próximos meses...

- ❑ EU CyberWeek, 12-14 Sep, Tallin
- ❑ ICT Proposer's Day, 09-10 Nov, Budapest
- ❑ Grupos de trabajo de las cPPPs Cyber, 5G, Data Value,...
- ❑ Eventos de la KIC EIT-ICT

Ejemplo-1: Topic de ICT

DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories

Specific Challenge:

Digital manufacturing platforms play an increasing role in dealing with competitive pressures and incorporating new technologies, applications and services. Advances are needed in digital manufacturing platforms that merge machine, human and organizational aspects within supply and value networks. The challenge is to fully exploit **new concepts and technologies that allow manufacturing companies (esp. mid-caps and SMEs) to become a more responsive link in changing supply and value networks.**

Scope:

- a) **Innovation Action** - Develop and establish platforms for the connected smart factory of the future including their supply chains, driven by EU actors and safeguarding European interest in an area of key importance for the European economy.

Proposals need **to address at least two industrial sectors with several different use cases, especially in their piloting activities.** Proposals are expected to target at least one of the following 'grand challenges', based on the **EFFRA key priorities for the FoF 18-19-20 Work Programme:**

Ejemplo-1: Topic de ICT

DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories

- Agile Value Networks: lot-size one (2018 call)
- Excellence in manufacturing: zero-defect processes and products (2018 call)
- The human factor: human competences in synergy with technological progress (2019 call)
- Sustainable Value Networks: manufacturing in a circular economy (2019 call)
- Agile Value Networks and Excellence in manufacturing are targeted in the 2018 call. The human factor and Sustainable Value networks are targeted in the 2019 call.

Reference implementations are preferably developed in open-source, with (as far as possible) one permissive open-source licence to be selected for all open-source components. Where applicable, APIs and SDKs are made available to third party developers to develop complementary applications.

b) Coordination and Support Activities are needed to cross-fertilise the Industrial Platform communities, allowing for easier take-up of digital technologies from ongoing and past research projects to real-world use cases, and supporting the transfer of skills and know-how between academy and industry in both directions.

Ejemplo-1: Topic de ICT

DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories

The Commission considers that proposals requesting a contribution from the EU **up to EUR 16 million for Innovation Actions and up to 2 M€ for ONE CSA** would allow the areas to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. At least one innovation action is supported for each 'grand challenge'.

Expected Impact:

- Significant increase in the options for SMEs and mid-caps to integrate different technologies, unlock the value of their data, deploy complementary applications, and to become a more responsive link in changing supply and value networks.
- Strengthened competitive position of European platform providers.
- Increased cooperation between industrial and academic communities; increased synergy and collaboration between projects.

Type of Action: Innovation action, Coordination and support action

Para finalizar....

Volviendo... Claves para la participación

- Anticipación**
- Planear una **estrategia** de centro a corto-medio-largo plazo
- Networking** a nivel nacional-europeo-internacional

Qué herramientas tenemos?

Herramientas de soporte a diferentes niveles:

- Ámbito **UdC** → **OTRI de la Universidad**, CICA,... pero también...
- Ámbito **Nacional** → Representantes & NCPs (**CDTI**)... pero también plataformas & asociaciones nacionales
- Ámbito **Regional** → Agentes regionales relacionados con I+D, empresa e innovación; **Clústers (masa crítica) & asociaciones**; redes de apoyo a la participación (compartición y optimización de recursos y conocimientos en favor del participante).
- Ámbito **Europeo** → Organismos Europeos (EC, Agencias,...); Entidades nacionales con sede en BRU; **Oficinas & “Antenas” de actores regionales en BRU**; **Plataformas tecnológicas** & Asociaciones sectoriales Europeas.

Volviendo... Claves para la participación

□ Anticipación

La participación en una call comienza meses antes de abrir y debe incluir un análisis interno de topics, identificación de posibles partners, análisis de debilidades y fortalezas,...



*Programa de trabajo
2018-2020*

Volviendo... Claves para la participación

- Planear una **estrategia** de centro a corto-medio-largo plazo:
 - ✓ Necesidad de revisión de los objetivos, selección prioridades → **No se puede ir a todo “en masa”!!!**
 - ✓ “Audit” interno “honesto” de capacidades “reales” → Qué **productos/servicios** podemos ofrecer? Qué nos hace atractivos/**competitivos** (de verdad) ? Para Quién?
 - ✓ Reforzar la colaboración **empresas, universidad, Centros tecnológicos, administración,...**

Volviendo... Claves para la participación

- **Networking a nivel nacional-europeo-internacional**
 - ✓ **Colaboración con empresas** es la mejor vía para incorporarse a H2020
 - ✓ Mantener **relaciones continuas con los stakeholders a nivel EU & Internacional** → Aprovechar reuniones de proyectos, eventos, etc... mejorar la visibilidad y hacer que vuestros mensajes lleguen a los actores relevantes
 - ✓ Hábito y periodicidad en mantener los contactos con asociaciones & plataformas Europeas, con la Comisión, EU-Parliament,...

Muchas gracias...

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