



HORIZON 2020

**The New EU
Framework Programme for
Research and Innovation
(2014-2020)**

Industrial pillar

**Neville Reeve, DG RTD, European
Commission**



Three priorities



Structure

- **Leadership in Enabling and industrial Technologies (LEITs)**
- **Access to Risk Finance**
- **Innovation in SMEs**

LEITs - ICT

LEIT-ICT – specific challenge

- ICT underpins innovation and competitiveness across a broad range of private and public markets and sectors
- The specific challenge is the need to maintain a strong expertise in key technology value chains and the necessity to move quicker from research excellence to the market
- The results will enable a wealth of new business developments in particular for SMEs and will contribute to boosting competitiveness, creating jobs and supporting growth.

LEIT-ICT - scope of activities

- The topics addressed in the Work Programme (2014-15) cover the ICT technology value chain in a comprehensive way, from key enabling technologies up to content and information management technologies, robotics and networking technologies
- It combines a strong support to industrial roadmaps with new mechanisms to encourage disruptive innovation.
- Several cross-cutting topics addressing cyber-security; Internet of Things; and research on the Human-centric Digital Age.
- Strong focus on: innovation and closer to market activities; Integrated international cooperation.

LEIT-ICT - key new features

- A cross cutting Key Enabling Technology activity on development of novel materials and systems for OLED lighting
- Comprehensive support to innovation activities including pilot lines for advanced Key Enabling Technologies in the photonics area
- A new dedicated action for SMEs using the SME instrument focussing on disruptive innovation
- Strong support to demand side activities using Pre-Commercial Procurement and Public Procurement of Innovative Solutions in areas like health, electronic textile, cloud computing, robotics, learning and teaching and photonics.

LEITs - Nanotechnologies, Advanced Materials, Biotechnology and Production

Nanotechnologies, Advanced Materials, Biotechnology and Production

- Focuses on new opportunities for industrial leadership in four Key Enabling Technologies (KETs):
 - Nanotechnologies
 - Advanced Materials
 - Biotechnology
 - Advanced Manufacturing and Processing (Production)

Nanotechnologies, Advanced Materials, Biotechnology and Production - Scope

- Implementation of three contractual Public-Private Partnerships (PPPs):
 - Factories of the Future (FoF)
 - Energy-efficient Buildings (EeB)
 - Sustainable Process Industry (SPIRE)
- Contribution of Biotechnology to JTI on Bio-based Industries

Nanotechnologies, Advanced Materials, Biotechnology and Production - Scope

- Emphasis on project outcomes, including industrial deployment
- Aim is to bridge 'valley of death' between R&D and markets
- Focus on Key Enabling Technologies with applications in several sectors (platform development/value chain approach)
- Includes
 - Nanotechnology pilot lines
 - Applications in Health and Energy
 - New materials
 - Cutting-edge biotechnologies and industrial bio-processes
 - PPPs for Manufacturing, Construction and Process Industries

LEITs - Space

LEIT Space

- Specific challenge: To foster a cost-effective competitive and innovative space industry and research community
 - Enhance competitiveness, non-dependence, and innovation of EU space sector
 - Enable advances in space technologies
 - Increase exploitation of space data
 - Enable participation in international space partnerships
- Relevant space applications under Societal Challenges
 - Transport, Climate, Security,.....

LEIT Space- scope

- Navigation: Galileo applications, Public Regulated Service, Galileo next generation (post 2020)
- Earth Observation: applications & Sentinel data exploitation
- Protection: Space weather, space debris, Near Earth Objects, Space surveillance and Tracking
- Competitiveness
 - In Technology: non-dependence, Strategic Research Clusters (robotics and electric propulsion), spinning into space low-TRL technologies, preparation for in-orbit validation, access to space...
 - In Science and Exploration: Exploitation of data and ISS-related actions
 - International Cooperation and Outreach

LEIT – Space – key new features

- Mix of completely open topics (real bottom-up approaches) in applications (Galileo, Earth Observation, SME instrument) and multiannual strategic planning (technologies for non-dependence, electric propulsion, robotics, in orbit demonstration/validation)
- Long term planning, from low-TRL to in-orbit validation will be supported over the years (2014-2020)
- New approach: Strategic Research Clusters.

Access to Risk Finance

Access to Risk Finance – specific challenge

- Debt or equity finance to support R&I tends to be more expensive than in other domains, as returns on investment are highly uncertain.
- The lack of tangible collateral increases difficulties in obtaining debt finance on reasonable terms.
- Start-ups & younger firms, most reliant on external financing, find obtaining finance particularly difficult.
- During the financial crisis, financing support for SMEs and other sizes of firm, particularly for new entrants, contracted severely.

Access to Risk Finance - scope of activities

- Loans for R&I-driven SMEs & small midcaps
 - Loans plus hybrid & mezzanine finance for R&I-driven (or R&I done by) medium & large midcaps
 - Loans for R&I undertaken by large firms, universities/PROs, R&I infrastructures, PPPs, special-purpose vehicles or projects
-

- Early-stage VC and quasi-equity for SMEs & small midcaps (+ some growth-stage)
 - Equity and other forms of risk capital for early stages of technology transfer
-

- Capacity-building in technology transfer (Call)
- Investment-readiness (Call)

Access to Risk Finance - key new features

- Technology transfer financing facility pilot (2015)
- Business angels co-investment pilot (ICT (2015)
- SME Finance Initiative (combining ESIF and EIB/EIF resources with Horizon 2020 funds)
- Assessing investment potential of SMEs emerging from Phase I of the SME Instrument

SMEs

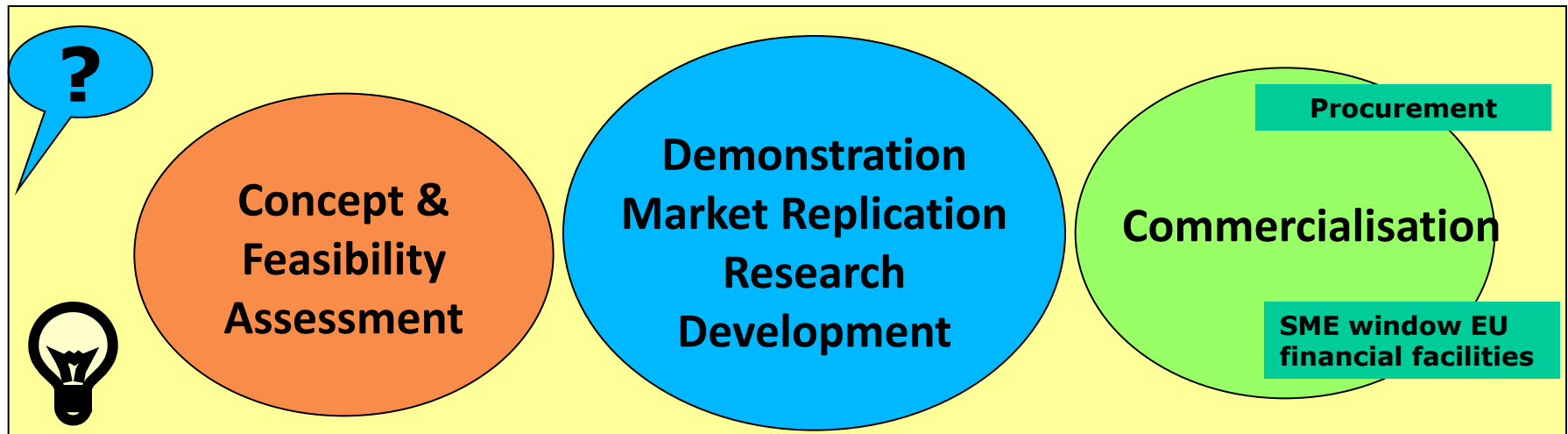
Innovation in SME

- Specific market failures and barriers to SME innovation:
 - Access to innovation funding
 - Lack of innovation management capacity
 - IP management; lack of innovation friendly procurement; Networking and partnering capacity
- 'Innovation in SME' addresses these and other failures:
 - by developing and testing better approaches and tools for SME innovation support,
 - by providing very specific support services directly to SMEs,
 - by reshaping the provision of grants to SME innovation: SME instrument & EUREKA/Eurostars

Innovation in SME - scope of activities

- Funding of innovation projects of SMEs related to the LEIT areas and societal challenges by the SME instrument 515,6mio€
- Contribution to EUREKA/Eurostars (67mio€) for ~260mio support to collaborative projects of research intensive SMEs
- Provision of specific innovation support services at European level: IPR helpdesk; Enhancing innovation management capacity by Enterprise Europe Network
- Development of better innovation support:
 - New approach: Cluster animated SME projects for new value chains
 - New tools for SME support and peer learning for innovation agencies

SME instrument



IDEA

business coaching and complimentary services

MARKET

Phase 1: Concept and feasibility assessment

Input: Idea/Concept: "Business Plan 1" (~ 10 pages)
10% budget

Activities:
Feasibility of concept
Risk assessment
IP regime
Partner search
Design study
Pilot application
etc.

10% success

Output: elaborated "Business plan 2"

Lump sum: 50.000 €
~ 6 months

Phase 2: R&D, demonstration, market replication

Input: "Business plan 2" plus description of activities under Phase 2 (~ 30 pages)
88% budget

Activities:
Development,
prototyping, testing,
piloting,
miniaturisation,
scaling-up, market
replication,
research

30-50% success

Output: "investor-ready Business plan 3"

0.5-2.5 M€ EC funding
~ 12 to 24 months

Phase 3: Commercialisation

Promote instrument as quality label for successful projects
Facilitate access to private finance

Support via networking , training, information, addressing i.a. IP management, knowledge sharing, dissemination

SME window in the EU financial facilities (debt facility and equity facility)

Possible connection to Procurement

No direct funding