Horizon 2020

Information and Communication Technologies in Work Programme 2016-17

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DG CONNECT

European Commission

A few reminders on Horizon 2020...

- **Biggest EU R&I programme ever**

   €77 billion of EU funding over 2014-2020

   ~ 27% increase compared to 2007-2013

- **Core part of Europe 2020's strategy**

   Smart, sustainable and inclusive growth

- **Main objectives**

  ➢ **Responding to the economic crisis to invest in future jobs and growth**

  ➢ **Addressing people's concerns about their livelihoods, safety and environment**

  ➢ **Strengthening the EU's global position in research, innovation and technology**
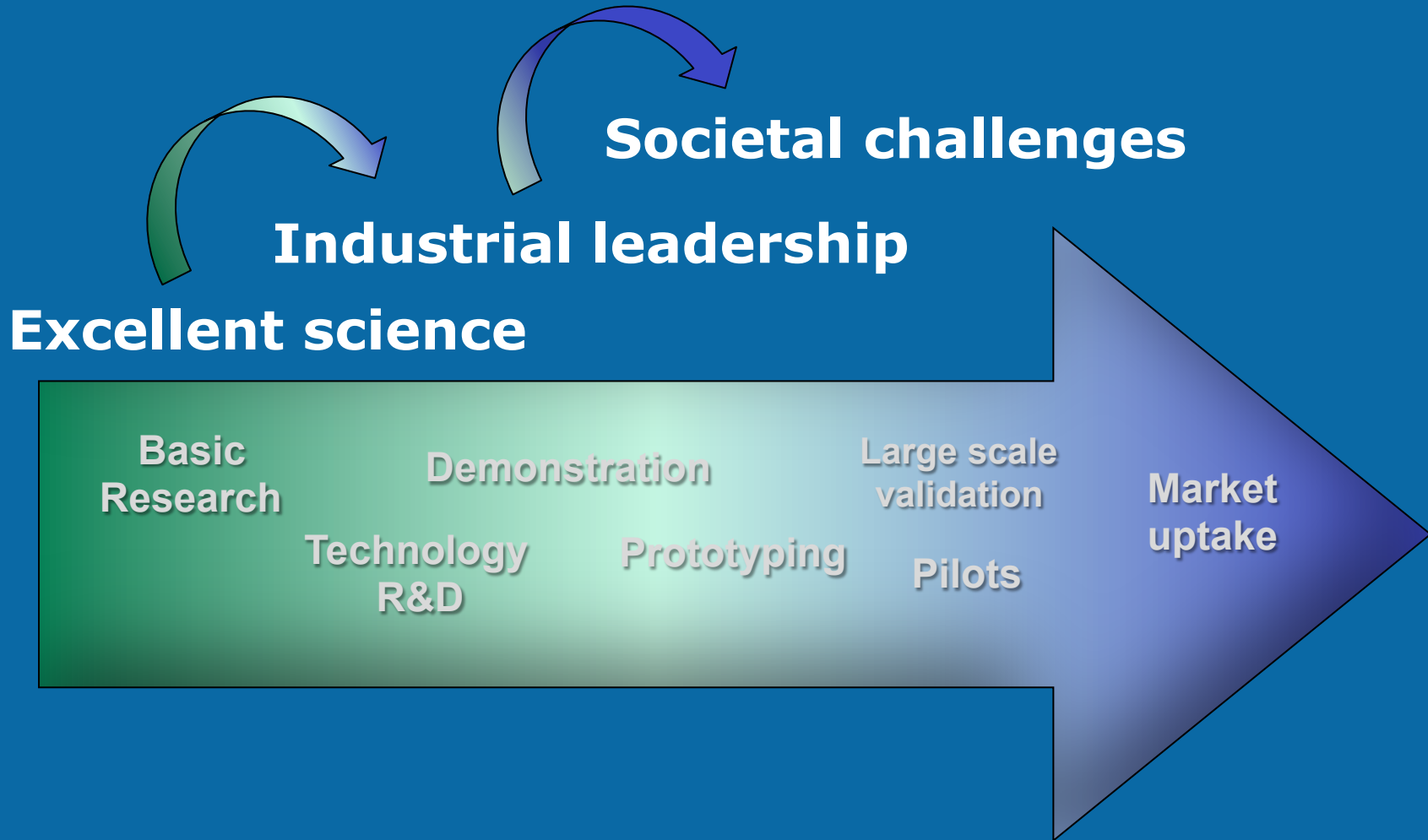
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A few reminders on Horizon 2020...

- **A single programme** bringing together three separate programmes/initiatives*
- **Coupling research to innovation** – from research to retail, all forms of innovation
- **Focus on societal challenges** facing EU society, e.g. health, clean energy and transport
- **Simplified access,** for all companies, universities, institutes in all EU countries and beyond

* The 7th Research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)

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Three priorities

Excellent science

Industrial leadership

Societal challenges

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Coverage of the full innovation chain

Societal challenges

Industrial leadership

Excellent science

Basic Research

Demonstration

Technology R&D

Prototyping

Large scale validation

Pilots

Market uptake

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Lessons learned from 2014-15 calls...
...Changes for 2016-17

- Increased support to **cross-cutting activities**
  - **Focus areas**

- Consolidation and strengthening of the **SME instrument**
  - **Single call** grouping all topics across the WP
  - **Fewer** and **broader** topics, with **higher budget** per topic and overall

- Change of **innovative procurement** instruments (PCP/PPI)
  - Move from co-fund to **standard grants**
  - **Increase of funding rates** (90%/35%)

- Reinforcement of **international cooperation**

- Increased use of **inducement prizes**

- More **precision**, **focus** and **clarity** in the topic descriptions (notably the **expected impacts**)...while keeping up an open and non-prescriptive approach

ICT in Horizon 2020

European Commission

Reminder: ICT in H2020 > LEIT-ICT

Excellent Science

Frontier Research (ERC)

Future and Emerging Technologies (FET) **ICT**

Skills and career development (Marie Skłodowska-Curie)

Research Infrastructures **ICT**

Industrial Leadership

Leadership in enabling

and industrial technologies

  ICT **ICT** **ICT**

  Nanotech., Materials, Manuf. & Processing

  Biotechnology

  Space

Access to risk finance

Innovation in SMEs **ICT**

Societal Challenges

ICT

Health, demographic change and wellbeing

Food security, sustainable agriculture, **ICT**
and the bio-based economy

Secure, clean and efficient energy **ICT**

Smart, green and integrated transport **ICT**

Climate action, resource efficiency, **ICT**
and raw materials

Inclusive, innovative and reflective societies

Secure societies **ICT** **ICT**

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Public Private Partnerships in ICT

Joint Technology Initiative

- **ECSEL** (Electronic Components and Systems for European Leadership)
  - ✓ **1,215 b€ from EU**
  - ✓ **3,6 b€** (out of which 1,2 b€ from Member States) **from industry partners and other sources**

Contractual PPPs

- **5G** –> **700m€** indicatively earmarked in H2020
- **Photonics** –> **700m€**
- **Robotics** –> **700m€**
- **High Performance Computing** –> **700m€**
- **Factories of the Future** (ICT part) –> **450m€**
- **Green Vehicles** (ICT part) –> **80m€**
- **Big Data** -> **500m€**

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ICT in Industrial leadership

Approach to WP2016-17

- Consolidate the **innovation drive** initiated in 2014-15
  - Supporting core ICT industries through **roadmap-based PPPs**
    - **New cPPP: Big Data**
  - Facilitating **disruptive innovation**
    - Strengthening of **ODI**
    - Continuation of **'Fast Track to Innovation'** pilot
  - Introducing new **cross-cutting actions** and reinforcing **large scale piloting** in real world environments
    - **IoT** and **Digital Security focus areas**
    - **IoT** and **Big Data large scale pilots**

- Ensure the supply of **future technological building blocks**
  - Room for more **exploratory research** activities within each area

- Reinforce the **international dimension** of LEIT-ICT
  - Coordinated calls with **Brazil**, **Japan** and **South Korea**

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Industrial Leadership - ICT
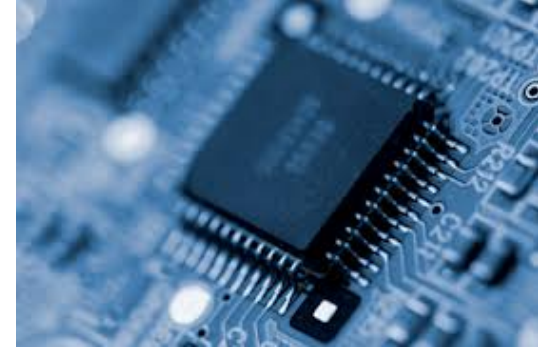
- **A new generation of components and systems:**
  - engineering of advanced embedded and resource efficient components and systems

- **Next generation computing:**
  - advanced and secure computing systems and technologies, including cloud computing

- **Future Internet:**
  - software, hardware, infrastructures, technologies and services

- **Content technologies and information management:**
  - ICT for digital content, cultural and creative industries

  - **Advanced interfaces and robots:**
    - robotics and smart spaces

  - **Micro- and nanoelectronics and photonics:**
    - key enabling technologies

Advanced Computing and Cloud Computing
2016-2017

71 M€

- Reinforce and expand Europe's industrial and technology strengths in **low-power ICT**

- Foster the evolution of **Cloud technology** to increase its uptake

- Complementary to the work in the Excellent Science pillar under Research Infrastructures and FET (on High Performance Computing)

- Organised in two topics:
  - **Customised and low energy computing** (32 M€)
  - **Cloud Computing** (45 M€)

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Future Internet
2016-2017

253 M€

- Integrated response to **technology** challenges and **innovation** needs of the future Internet

- Organised in seven topics:

  5G PPP (148 M€)
  - **5G PPP Research and Validation of critical technologies and systems (103 M€)**
  - **5G PPP Convergent Technologies (45 M€)**
  - **Networking research beyond 5G (18 M€)**
  - **Software Technologies** (31 M€)
  - **Future Internet Experimentation - Building a European experimental Infrastructure (26 M€)**
  - **Collective Awareness Platforms for Sustainability and Social Innovation** (10 M€)
  - **Net Innovation** Initiative (20 M€)

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Content technologies
2016-2017

278 M€

- Improve **access**, **creation**, **management** and **use** of **data** and **content** through advances along the **data, content and knowledge value chains**.

- Organised in eleven topics (+ one prize):

  - **Big data PPP (153 M€)**
    - Cross-sectorial and cross-lingual data integration and experimentation (54 M€)
    - Large scale pilots in sectors best benefitting from data-driven innovation (50 M€)
    - Research addressing main technology challenges of the data economy (31 M€)
    - Support, industrial skills, benchmarking and evaluation (7 M€)
    - Privacy-preserving big data technologies (9 M€)

  - **Media and content convergence (39 M€)**
  - **Tools for smart digital content in the creative industries** (17 M€)
  - Support **technology transfer to the creative industries** (14 M€)

  - Technologies for **Learning and Skills** (31 M€)
  - **Interfaces for accessibility** (14 M€)
  - **Gaming and gamification** (12 M€)

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Robotics and autonomous systems
2016-2017

164 M€

- **Technology-driven** actions to keep EU at the cutting edge of research + **market-driven** actions to accelerate take-up and deployment of robots

- **Roadmap-based approach**
  → Robotics PPP

- Organised in four topics in LEIT-ICT + one topic in SC2:
  - **Advanced robot capabilities research and take-up** (64 M€)
  - **System abilities, development and pilot installations** (42 M€)
  - **System abilities, SME & benchmarking actions, safety certification** (46 M€)
  - **Robotics competition**, coordination and support (5 M€)

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ICT key enabling technologies
2016-2017

181 M€

- Translate Europe's S&T excellence in **photonics** and **micro- and nano-electronics** into strengthened competitiveness and market leadership

- **Address the whole research and innovation value chain in photonics technology**: from materials to manufacturing, products and services, through equipment and devices – from advanced R&D to pilot lines
  → **Photonics PPP (153 M€)**
  → Complemented by activities of LEIT-NMBP and **FoF PPP**

- Cover **generic technology developments on micro- and nano-electronics** focused on exploratory research and lower Technology Readiness Levels (TRLs) (23 M€)

  - Complementary to the JTI Electronic Components and Systems

- Organised in three topics in LEIT-ICT + one in LEIT-NMBP + one in FoF

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ICT for the Factories of the Future 2016-2017

116 M€

- Part of the **'Industry 2020 in the Circular Economy'** cross-cutting focus area

- Focus on **ICT components of innovative production systems in all sectors** (for a more personalised, diversified and mass-produced product portfolio and for rapid and flexible reaction to market changes)

- Implementation of the **FoF PPP**

- Organised in three topics:
  - Digital automation (53 M€)
  - ICT Innovation for Manufacturing SMEs (I4MS) (33 M€)
  - Photonics laser-based production (30 M€)

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Internet of Things
2016-2017

139 M€

- **Cross-cutting focus area**
  - Contributions from **SC1** and **SC2**
- Increased support with the ambition to **foster the take-up of IoT in Europe** and to **enable the emergence of IoT ecosystems** supported by open technologies and platforms

- Organised in three topics:
  - **Large scale pilots** (100 M€)
    - Smart living environment for ageing well
    - Smart farming and food security
    - Wearables for smart ecosystems
    - Reference zones in EU cities
    - Autonomous vehicles in a connected environment
  - IoT Horizontal activities (4 M€)
  - **R&I on IoT integration and platforms** (35 M€)

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Digital Security
2016-2017

118 M€

- **Focus area**
  - Combining contributions from **LEIT-ICT**, **SC1** and **SC7**

- **Grouping the main R&D&I activities in digital security**, from enabling technologies to specific use cases

- Organised in eight topics:
  - **Cryptography** (18,5 M€)
  - **Assurance and Certification** for Trustworthy and Secure ICT systems, services and components (23,5 M€)

  - Addressing **Advanced Cyber Security Threats and Threat Actors** (18 M€)
  - **Privacy, Data Protection, Digital Identities** (18 M€)
  - **Cyber Security for SMEs, local public admin. and individuals** (22 M€)
  - **Economics of Cybersecurity (4 M€)**
  - **EU Cooperation and International Dialogues** in Cybersecurity and Privacy Research and Innovation (3 M€)

  - Increasing **digital security of health related data** on a systemic level (11 M€)

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Innovation and Entrepreneurship support
2016-2017

156+ M€

- Reinforce the **involvement of users** in R&D&I
- Support **digital entrepreneurship**
- Strengthen the **support to start-ups** and **SMEs**
- Facilitate the meeting between **investors** and start-ups
- Increase the **entrepreneurial skills**

- Organised in five topics:
  - **Startup Europe for growth and Innovation Radar** (12 M€)
  - **Innovation procurement networks** (4 M€)
  - **Pre-commercial procurement open** (4 M€)

  - **Open Disruptive Innovation** scheme – SME instrument (**126 M€**)

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Support to new initiatives and Prizes

ICT-40: Internationalisation of European standardisation, 2M

ICT-41: Next generation Internet, 2M

Prizes:

1. Tactile Displays for the visually Impaired, 3M
2. Big data technologies, 2M
3. Online security- Seamless personal authentication, 4M
4. Zero Power Water Infrastructure Monitoring, 2M

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International cooperation

40,8 M€

- **International partnership building in low and middle income countries** (13,8 M€) / Target: **sub-Saharan Africa and ASEAN**

- **Coordinated calls**

  - **EU-Brazil** (7 M€)
    - Cloud computing
    - IoT pilots
  - **EU-Japan** (7 M€)
    - 5G – Next Generation Communication Networks
    - IoT/Cloud/Big Data platforms in social application contexts
    - Experimental testbeds on Information-Centric Networking
  - **EU-South Korea** (6 M€)
    - 5G – Next Generation Communication Networks
    - IoT joint research
    - Federated Cloud resource brokerage for mobile cloud services
  - **Cooperation with Taiwan in 5G PPP topic on Convergent Technologies** (5 M€)

- **Other international cooperation activities**
  - **China**: Collaboration on Future Internet (1 M€)
  - **Mexico**: Collaboration on ICT (with a focus on FIWARE) (1 M€)

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SME Instrument – ICT
2016-2017

- **SME Instrument dedicated call** (739 M€ overall)
  - **Open Disruptive Innovation Scheme** (126 M€)
  - Accelerating the uptake of nanotechnologies advanced materials or advanced manufacturing and processing technologies by SMEs (67 M€)
  - **Accelerating market introduction of ICT solutions for Health, Well-Being and Ageing Well** (30,5 M€)
  - Stimulating the innovation potential of SMEs for a low carbon and efficient energy system (96 M€)
  - Small business innovation research for Transport and Smart Cities Mobility (119 M€)
  - **New business models for inclusive, innovative and reflective societies** (22 M€)
  - **Engaging SMEs in security research and development** (30 M€)

European Commission

Call planning – 2016-2017

LEIT
- **EU-Brazil:** 14 Mar 2017
- **Main ICT call: 8 Dec 2016, 25 April 2017**

Cross-cutting activities
- **ICT for FoF:** 19 Jan 2017
- **IoT:** 25 April 2017
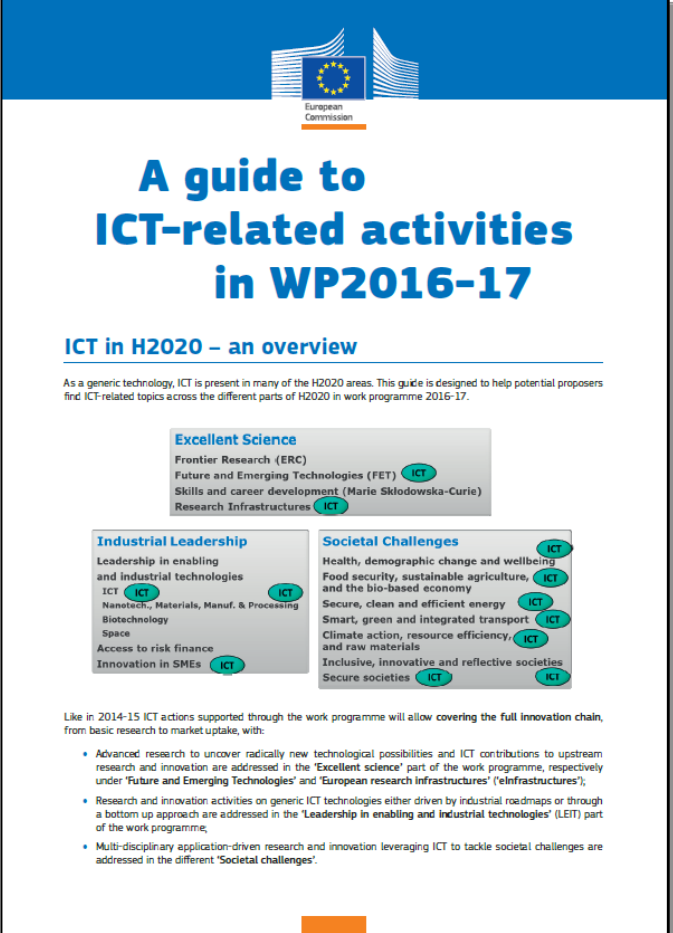
SME instrument
- **Phase 1: 7 Sept**, **9 Nov 2016**, 15 Feb, 3 May, 6 Sep 2
- **Phase 2: 15 Jun**, **13 Oct 2016**, 18 Jan, 6 Apr, 1 Jun,

Guide to ICT-related activities in WP2016-17

- **Comprehensive coverage of the three H2020 pillars**

- **Detailed list of calls and topics**

- **Available on H2020 website**

Successful electronic submission

Each submission overwrites the previous one

Make an early submission to check out the procedure and your proposal

Make your final submission in good time ...

... then look at what you submitted while there is still time to submit a correct version

**Never (ever!)
    plan to submit in the last 30 minutes of the call!**

**If in trouble,
    immediately call the submission service helpdesk**

European Commission

Public stakeholder consultation – interim evaluation of Horizon 2020.

Deadline: 15 January 2017

https://ec.europa.eu/research/consultations/ interim_h2020_2016/consultation_en.htm

# We are looking for more experts, in particular female experts!

Female Participation in ICT calls:

	2014	2015	2016
	28%	38%	45%

Appropriately qualified professionals should apply to work as experts in H2020 evaluations

Application via the Participant Portal

The selection is made per call deadline to ensure a broad rang expertise and avoid conflicts of interest

HOW TO RTICIPATE?

WORK AS AN EXPERT

ACCESS MY PERSONAL AR

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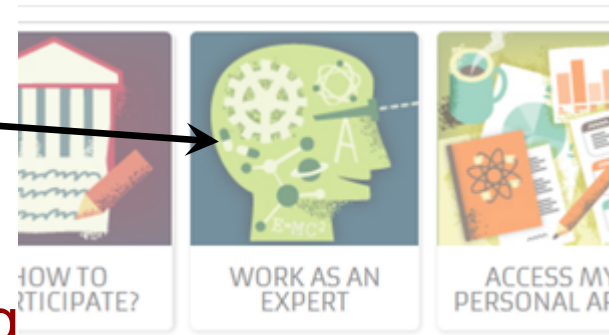
Find out more

- **Horizon2020 web site**
  - ✓ http://ec.europa.eu/programmes/horizon2020

- **Participants portal**
  - ✓ http://ec.europa.eu/research/participants/portal

- **H2020 Helpdesk**, including FAQ
  - ✓ http://ec.europa.eu/research/index.cfm?pg=enquiries

- **National Contact Points**
  - ✓ http://ec.europa.eu/research/participants/portal/desktop/en/support/national_contact_points.html

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