



# Horizon 2020 Funding opportunities

## Workprogramme 2018-20

DG CONNECT  
22<sup>nd</sup> November 2018  
Lisbon, EFCS



# Facts & Figures

- Around **54%** of the Horizon 2020 participants are **newcomers**
- Almost half of them are SMEs
- The **20% target** on the share of funding going to **SMEs** was surpassed
- 115 235 eligible proposals – requested EU financial contribution of EUR 182.4 billion
- **Success rate** of eligible full proposals is **12.6%**



# Facts & Figures



**11 894** publications in peer-reviewed journals, amounting to **52.5%** of all publications  
**9615** open access articles published in peer-reviewed journals



**8414** prototypes, **5534** testing activities, **695** clinical trials  
**408** patent applications, **21** design, **66** trademarks and **3** utility models applications  
**141** patents awarded, **19** design, **50** trademarks and **2** utility models awarded



**664** projects with new innovative products, **329** projects with new innovative processes,  
**321** projects with new innovative methods  
**15.5%** of participating firms introducing innovations new to the market (covering the period of the project plus three years)  
**13.9%** of participating firms introducing innovations new to the company (covering the period of the project plus three years)

# Work Programme 2018-20

## **ICT-01-2019: Computing technologies and engineering methods for cyber-physical systems of systems**

Research and Innovation action, Coordination and support action **38M€ + 2M€**

## **ICT-06-2019: Unconventional Nanoelectronics**

Research and Innovation action **30M€**

- **Opening: 16 Oct 2018**
- **Deadline: 28 Mar 2019**



# Work Programme 2018-20

## DT-ICT-01-2019: Smart Anything Everywhere

Innovation action, Coordination and support action

Cyber-physical and embedded system Customised low  
energy computing powering CPS and the IoT

Flexible and Wearable Electronics

Widening Digital Innovation Hubs

48M€ + 1M€

- **Opening: 16 Oct 2018**
- **Deadline: 02 Apr 2019**





SmartAnythingEverywhere

**Submission deadline:  
2-April-2019**

# DT-ICT-01-2019

## Smart Anything Everywhere

[www.smartanythingeverywhere.eu](http://www.smartanythingeverywhere.eu)

### Challenge

Accelerate design, development and uptake of Digital technologies in products  
Components, software and systems  
Address sectors where digital technologies are underexploited  
Special emphasis on SMEs and Mid-caps

### Scope

Help businesses in further maturing, innovating and validating products  
Focus: Access to design, technology and prototyping which are ready to use  
application experiments driven by concrete user requirements and business cases

### Expected Impact

- Attract a significant number of new users and more innovative technology suppliers in particular SMEs and mid-caps.
- Creation of a sustainable network of Digital Innovation Hubs
  - added value to investments done at national and regional level in Digital Innovation Hubs.
- Availability of Digital Innovation Hub services across Europe

### The Instrument

Innovation Actions (IA)

**48M€ for 4 areas**



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# Work Programme 2018-20

## DT-NMBP-18-2019: Materials, manufacturing processes and devices for organic and large area electronics

- Innovation action
- Material development and improvement, prototyping of advanced OLAE based electronic products **20M€**
  - **Opening: 16 Oct 2018**
  - **Deadline: 22 Jan 2019 (First Stage), 03 Sep 2019 (Second Stage)**
- Co-funded by LEIT-NMBP and LEIT-ICT

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

- Innovation action, Coordination and support action
- The challenge is to fully exploit new concepts and technologies that allow manufacturing companies (especially mid-caps and SMEs) to fulfil the demands from changing supply and value networks **45M€ + 2M€**
  - **Opening: 16 Oct 2018**
  - **Deadline: 02 Apr 2019**



# ICT-06-2019: Unconventional Nanoelectronics

**Specific Challenge:** To maintain Europe's position at the forefront of nanoelectronic technologies

**Scope:** New approaches to computing components. Focus on demonstrating new concepts at transistor or circuit level.

In a controlled environment (laboratory, research line) amenable to transfer to industrial environments (pilot lines, etc.).

Design, processing and integration of devices based on new approaches, e.g. spintronics, neuromorphic, resulting in computing devices and circuits.

## Research & Innovation Actions on

- Energy-efficient computation devices beyond the current CMOS paradigm. These can address steep slope devices, quantum bits implemented in solid-state, spintronic-based devices, single electron devices, nanomechanical switches, etc.
- Energy-efficient computation circuit architectures. Approaches based on neuromorphic computing or other implementation.
- Specific technological developments may include (i) approaches for 3D stacks, and (ii) development of cryogenic (superconducting, quantum computing)
- Design for advanced nanoelectronics technologies. Focus on energy efficiency, high reliability and robustness.



# ICT-06-2019: Unconventional Nanoelectronics

The proposed demonstrations are expected to be validated in laboratory (TRL 4).

Specify the road to industrialisation and establish links to applications.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged, in particular with countries that have substantial research in the area (e.g. Japan, South Korea, Taiwan and the USA).

Proposals requesting a contribution from the EU of between EUR 2 and 4 million

## **Expected Impact:**

☐ Identify applications likely to benefit from the intended approach with indication of key parameters (power, energy-efficiency, size, frequency, and cost) and quantitative targets to be achieved (figures of merit).

☐ Contribute to the mid-term viability of the European Nanoelectronics industry ensuring that new technologies with high potential for computing emerge in time to be taken up by industry.

☐ Sustain the technological integration requirements by focussing on challenging 3D integration issues as well as for electronics at cryogenic temperature.

☐ Contribute to the European industry capability to design advanced circuits for its needs.



**Deadline (2-stage):**  
**22-Jan-2019**  
**and**  
**3-Sept-2019**

## Materials, manufacturing processes and devices for organic and large area electronics

### Challenge

Advance the technology readiness level of Organic / Large area Electronics  
→ to advance its manufacturability

Via: Demonstration of OLAE-enables prototypes in selected applications

Work to cover: materials, manufacturing processes and devices

### Scope

- Material : Electrical performance, Processibility and seamless integration  
Stability, lifetime in operation
- Processes: Seamless integration into traditional/new products  
High speed integration processes on flexible substrates
- Prototyping of advanced products

**Start TRL 3**  
**Achieve TRL 5**

### Expected Impact

- New products in flexible and wearable electronics.
- Improvement in cost competitiveness
- Improved stability, mobility, lifetime, processibility
- Improved business opportunities and value creation in Europe
- Development of manufacturing capabilities in Europe

### The Instrument

### Innovation Actions (IA)

4 - 5 M€

**20 M€\* - 70% funding**



European  
Commission

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*\* Co-funded by ICT (10) and NMBP  
programmes*

## ICT-01-2018: WHAT IS NEW?

- 1) The areas of “**Computing Systems**” and “**Cyber-Physical Systems-of-Systems**” have been merged into 1 call
- 2) The focus is still on **dependable and critical applications** at the edge of the network, but now **autonomous systems** and **AI** are key elements
- 3) For computing, the focus is on **radically new solutions** both for the architecture and for the software stack *(possibly very different from today’s hardware and software)*
- 4) For systems-of-systems, the focus is on supporting **the complete lifecycle** of CPSoS from design to maintenance, evolution and end of life *(you can see this as “extended DevOps” for the CPSoS, supported by the appropriate “digital twin”)*

Call: **ICT-01-2019**

**38M€** for RIA  
**2M€** for CSA

Opening: 16/10/2018  
Deadline:  
**28/03/2018**

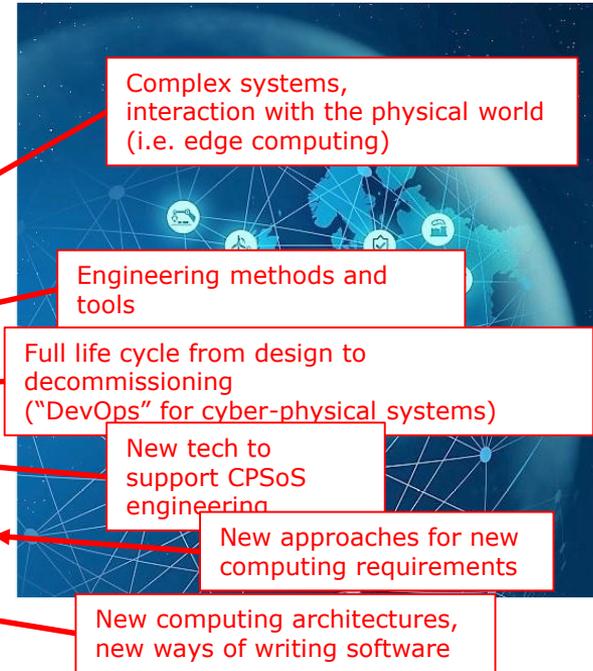


## From the call text

**Cyber-physical Systems of Systems (CPSoS)**, like transport networks or large manufacturing facilities, interact with and are controlled by a considerable number of distributed and networked computing elements and human users. These **complex and physically-entangled systems of systems** are of crucial importance for the quality of life of the citizens and for the European economy.

**At system level** the challenge is to bring a step change to the **engineering techniques** supporting the **design-operation continuum** of dynamic CPSoS and to exploit **emerging technologies** such as augmented reality and artificial intelligence.

**At computing level** the challenge is to develop **radically new solutions** overcoming the intrinsic limitations of today's computing **system architectures and software design** practices.

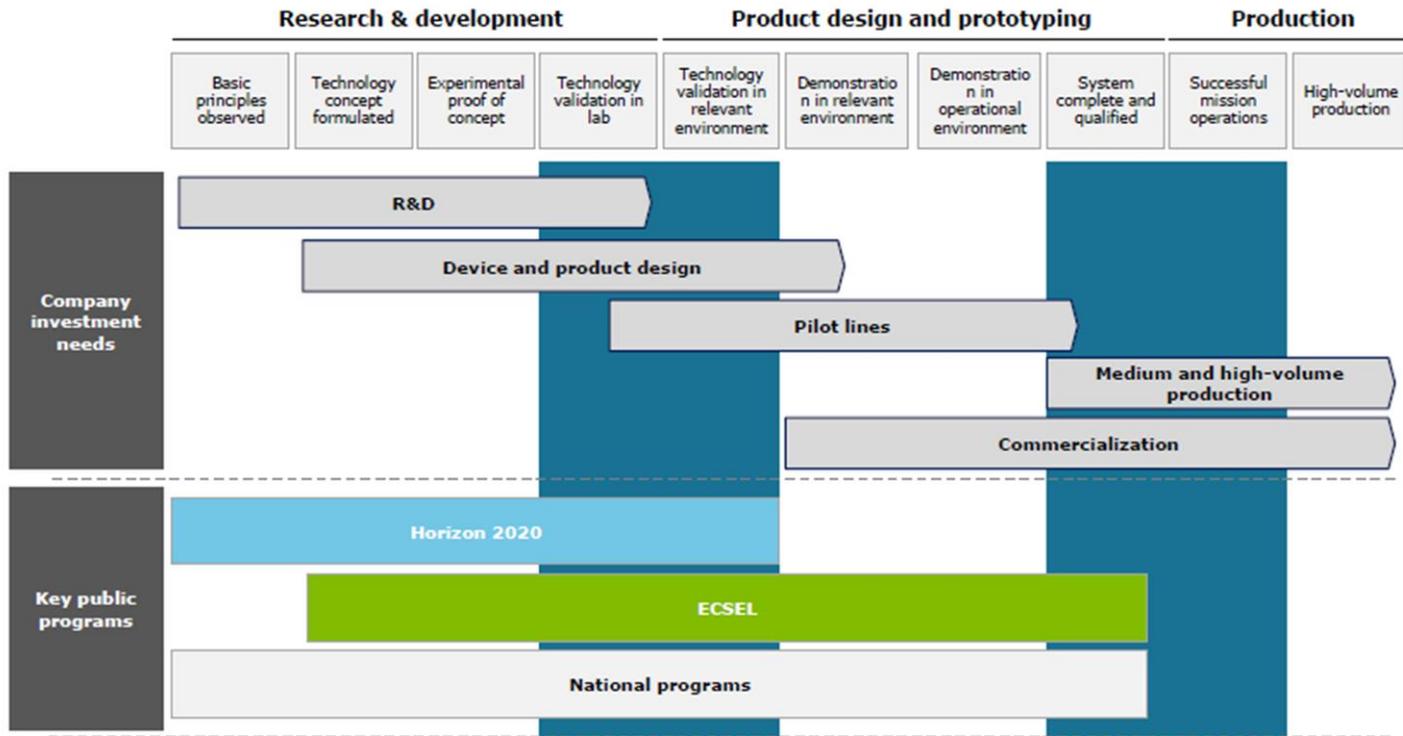


More info:

<https://ec.europa.eu/digital-single-market/events/cf/ict2018/item-display.cfm?id=22784>



# From research to innovation



# F&T Portal - Funding & tender opportunities

Single Electronic Data Interchange Area (SEDIA)

What are calls for proposals? >

What are calls for tenders? >

How to participate in 5 steps >

## Calls for proposals by EU Programme

Feedback



3rd Health Programme

Asylum, Migration and  
Integration Fund

Consumer Programme

Creative Europe

Erasmus+ Programme

European Maritime and  
Fisheries Fund

HERCULE III

Horizon 2020 Framework  
Programme

Internal Security Fund  
Borders and Visa

Internal Security Fund  
Police

Justice Programme

Pilot Projects and  
Preparatory Actions

Programme for the  
Competitiveness of  
Enterprises and small and  
medium-sized enterprises

Promotion of Agricultural  
Products

Research Fund for Coal &  
Steel

Rights, Equality and  
Citizenship Programme

Union Civil Protection  
Mechanism

Previous Framework Programs  
(FP7 - CIP)

Overview of EU funding



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# Useful links

## **H2020 WorkProgramme 2018-20:**

[http://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-leit-ict\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-leit-ict_en.pdf)

<https://ec.europa.eu/programmes/horizon2020/h2020-sections>



## **Funding and Tenders Portal:**

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>

## **ICT/ECS websites:**

<https://ec.europa.eu/digital-single-market/en/electronics>

<https://ec.europa.eu/digital-single-market/en/policies/cyber-physical-systems>

<https://ec.europa.eu/digital-agenda/en/digitising-european-industry>



[henri.rajbenbach@ec.europa.eu](mailto:henri.rajbenbach@ec.europa.eu)  
[sandro.delia@ec.europa.eu](mailto:sandro.delia@ec.europa.eu)  
[francisco.ibanez@ec.europa.eu](mailto:francisco.ibanez@ec.europa.eu)

**Thank you!**