European Commission

ΕΘΝΙΚΟ ΚΕΝΤΡΟ ΤΕΚΜΗΡΙΩΣΗΣ
NATIONAL DOCUMENTATION CENTRE

27 Φεβρουαρίου 2018, Athens

ICT Funding opportunities H2020, 2018-20

Νέες Προκηρύξεις Δράσεων –
Τεχνολογίες Πληροφορίας και Επικοινωνίας 2018-20

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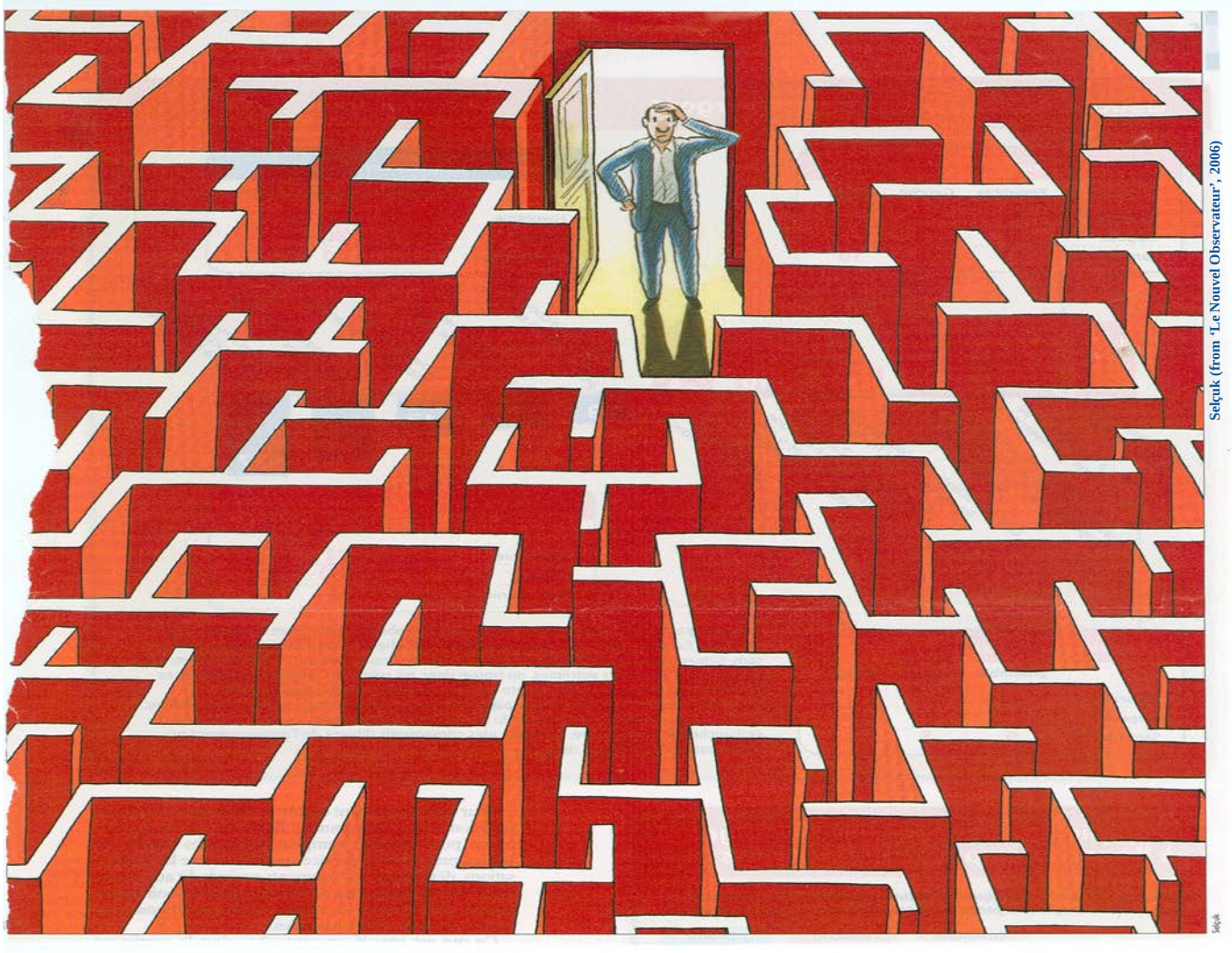
DG CONNECT, Digital Industry, Electronics Competitive Industry

Disclaimer

Not legally binding presentation.

The published work programme is the sole authoritative text.

Please read it carefully !



Selçuk (from 'Le Nouvel Observateur', 2006)

Overview

- Biggest EU Research and Innovation programme
- €80 billion of funding available over 7 years (2014 to 2020)
- Emphasis on **excellent science**, **industrial leadership** and tackling **societal challenges**
- Taking great ideas from the **lab** to the **market**

Work Programme 2018-20
Focus Areas

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

Digitising and transforming European industry and services

Covers the main actions of the work programme addressing the priorities of the **Digital Single Market Strategy** of the EC and helping **seizing the opportunities offered by digital technologies.**

Aims to contribute to:

- **enabling** all sectors to adapt, transform and benefit from digitisation;
- **developing** new business models;
- **connecting** to MS and regions,
- **removing** barriers for innovation enabled by digitisation.

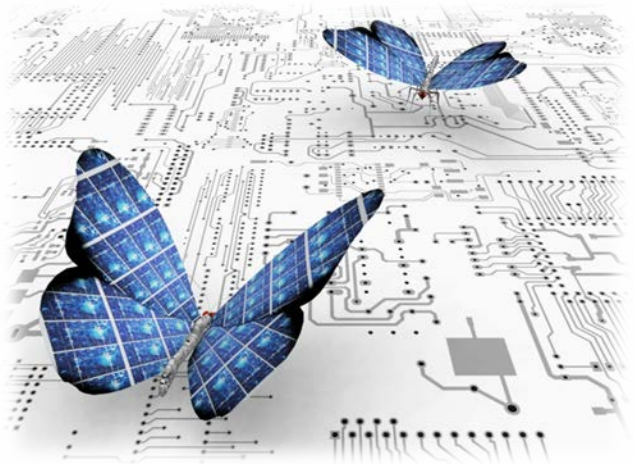
Integrates R&I related to major **technological** trends with **application-driven** initiatives through a **multidisciplinary** approach.

Total indicative budget (2018-2020):
EUR 1 689 million

Work Programme 2018-20

- Information and Communication Technologies
  - Technologies for Digitising European Industry
  - European Data Infrastructure

    High-Performance Computing, Big Data, Cloud
  - 5G
  - Next Generation Internet
- DIH and platforms
  - Digital Innovation Hubs
  - Platforms and Pilots
- Cybersecurity
- International calls



ICT Work Programme 2018-20

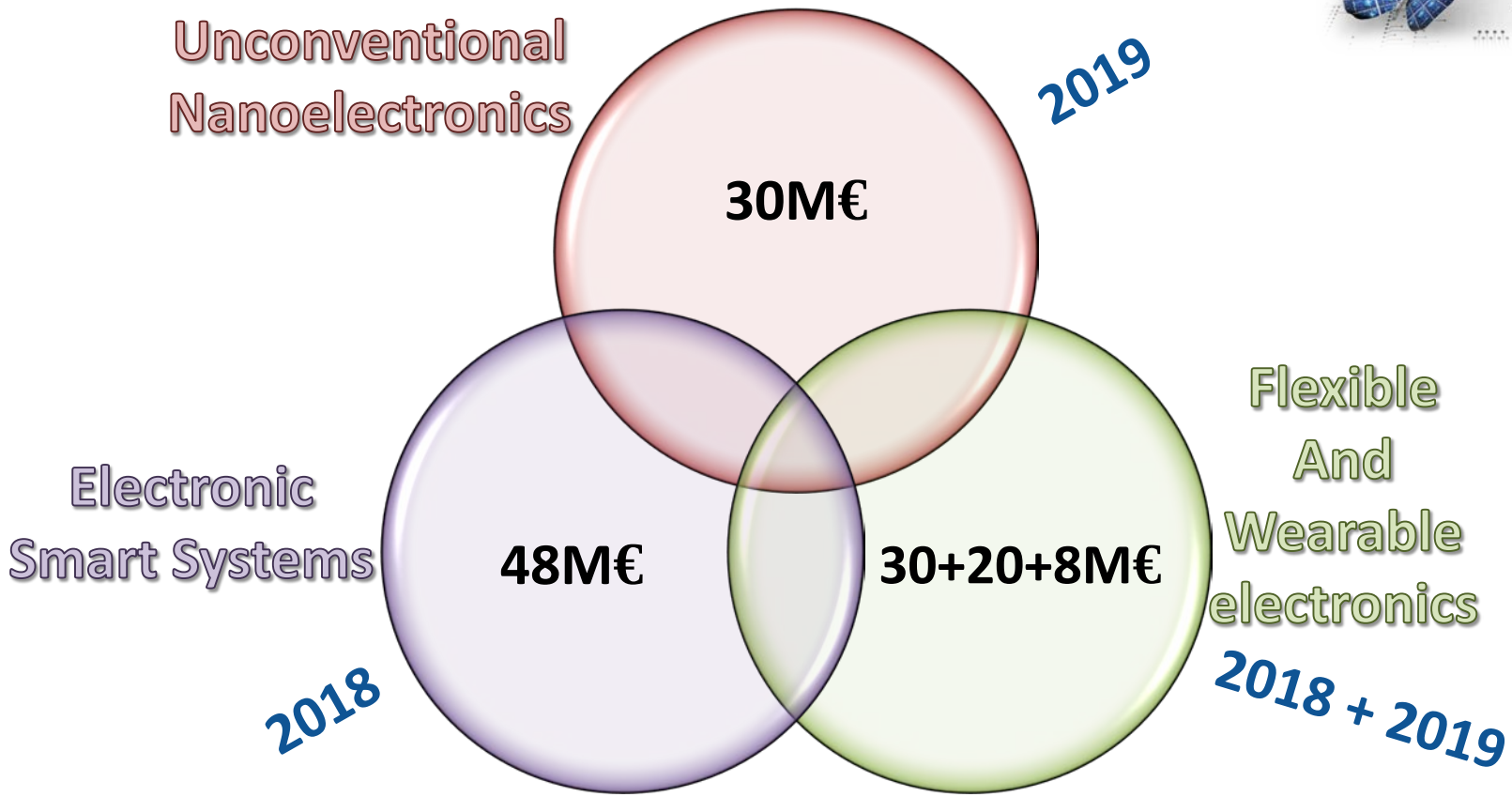
- Technologies for Digitising European Industry
  - Electronic Smart Systems (ESS)
  - Flexible and Wearable Electronics
  - Unconventional Nanoelectronics
  - Photonics Manufacturing Pilot Lines for Photonic Components and Devices
  - Photonics based manufacturing, access to photonics, datacom photonics and connected lighting
  - Application driven Photonics components
  - Robotics Digital Innovation Hubs

The Near Future
2018-2019

Towards the Horizon

Electronic components and systems

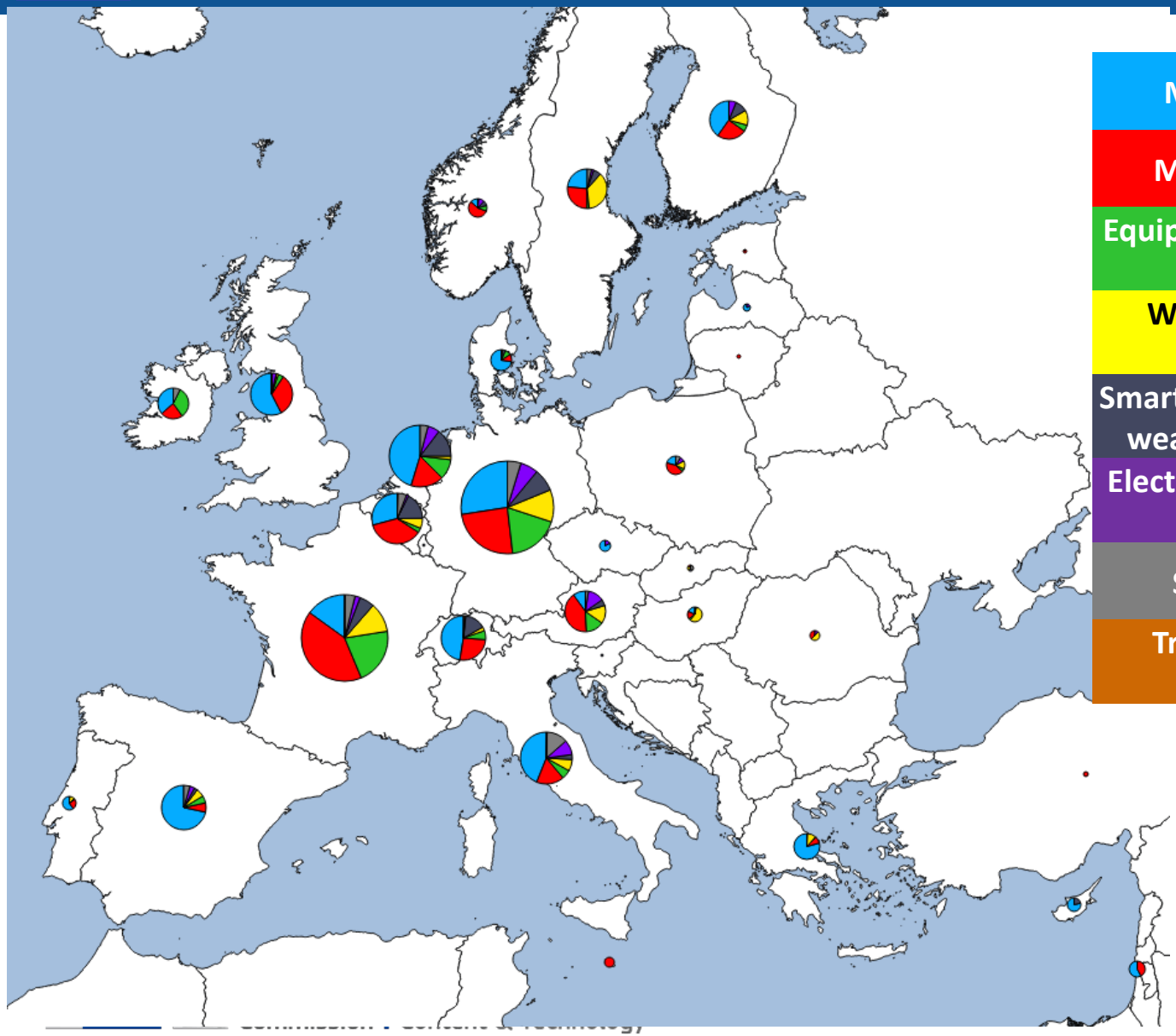
Reinforcing the Electronics sector in Europe



ICT-07-2018
Electronic Smart Systems

Electronic Smart Systems

- Where ? -



- MNBS & health
- MEMS & sensors
- Equipment, processes & integration
- Wireless & power electronics
- Smart textiles, flexible & wearable electronics
- Electric vehicle & smart grids
- System design
- Training & access services

Electronic Smart Systems – H2020 Application sectors -

Medical	Water	Food	Telecom	Thermic in SSI	Energy (management /harvesting)

Application specific SSI

PROTEUS
(Water quality monitoring)

SNIFFPHONE
(Health screening from exhaled breath)

MEDILIGHT
(Smart textile and wearable electronics)

SocketMaster
(Sockets for amputees)

BIOCDx
(Photonics diagnostic platform for reliable cancer diagnosis)

LoveFood2Market
(pathogens in food – Ultra-fast detection

PhasmaFOOD
(photonic miniaturised on-the-spot food quality sensing

Liqbiopsens
biopsy-on-chip -colorectal cancer detection

SMARTDIAGNOS
(sepsis diagnosis)

MADIA
magneto-resistive sensors for diagnostic device)

TIPS
(Thermal management in photonic devices)

TOP HIT
(Micro-transfer printing)

smart-MEMPHIS
(MEMS energy harvester)

M3TERA
(Micromachined TeraHz systems)

Nanonets2Sense
(biosensors, functionalised

STREAMS
(µfluidic active cooling integration)

48M€

ICT-07-2018
Electronic Smart Systems

Open: October 2017
Close: 17 April 2018

The Challenge

- **Develop & validate a new generation of multi-functional ESS technologies**

  Hardware integration of Sensing, actuating, processing, wireless transmission

- **Validation of ESS technologies, via application demonstrators**

The Instruments and €

- Research and Innovation Actions (RIA)	**39 M€ - 100% funding**
- Innovation Actions (IA)	**8 M€ - 70% funding**
- Coordination and Support Actions (CSA)	**1 M€ - 100% funding**

48M€

ICT-07-2018
Electronic Smart Systems

The Scope (RIA)

Open: October 2017
Close: 17 April 2018

- Research and Innovation Actions (RIA)

a - **Technological breakthroughs**:

miniaturisation
functionalities
power consumption, autonomy
reliability
secure operation

TRL 4

Industrial exploitation
Application perspectives

b – **Bio-electronics Smart Systems**:

Cost effective miniaturisation, manufacturing and demonstration:

specificity/sensitivity
time to results
reliability
manufacturability

TRL 5

User needs
Market/business case

39 M€ - 100% funding

48M€

ICT-07-2018
Electronic Smart Systems

The Scope (IA and CSA)

Open: October 2017
Close: 17 April 2018

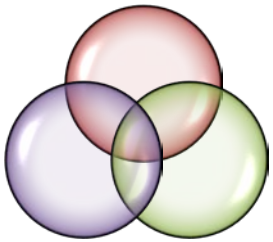
- **Innovation Actions (IA)**

Access to Nanoelectronics and Electronic Smart Systems

- Access to advance design and manufacturing (academia, research institutes, SMEs)
- Rapid prototyping production for SMEs and market deployment
- Technical support and training

8 M€ - 70% funding

- **Coordination and Support Actions (CSA)**



- Collaboration between projects/experts in
  Nanoelectronics + Electronic Smart Systems + Flexible /wearable electronics
- Increase outreach
- International cooperation
- Technology/development monitoring
- Roadmapping

1 M€ - 100% funding

European Commission | Communications Networks, Content & Technology

submission: 17 April 2018

48M€

ICT-07-2018
Electronic Smart Systems

The expected Impact

Open: October 2017
Close: 17 April 2018

Technology / R&D

- **Build a European Leadership for system performances**
- **Improved ESS manufacturing capabilities in Europe**
- **Increase cooperation – Promote multi-disciplinary initiatives**

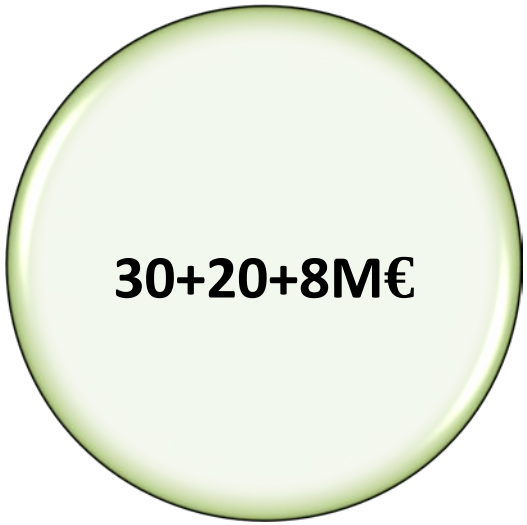
New opportunities (sector, product)

- **New opportunities for digitising in traditional sectors**
- **New users in industry (SMEs, mid-caps) and academia**

Economy/Finances

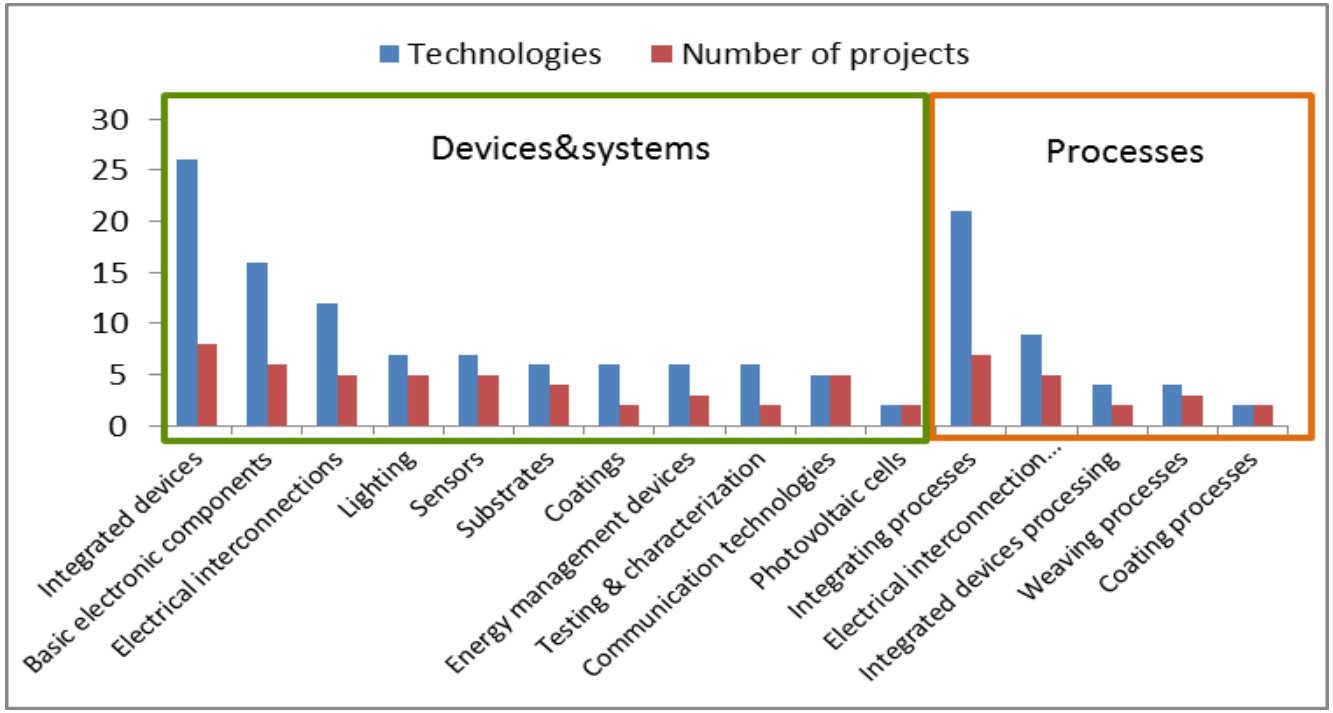
- **More industrial investments**
- **Increased market penetration for ESS and bio-electronics systems**
- **Increased long-term industrial involvement in R&I**

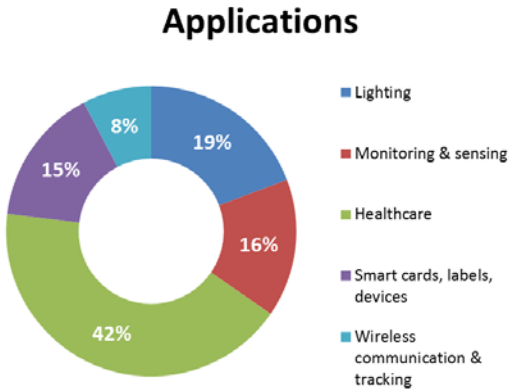
ICT-02-2018
Flexible and Wearable Electronics



Smart textiles, Flexible & Wearable Electronics

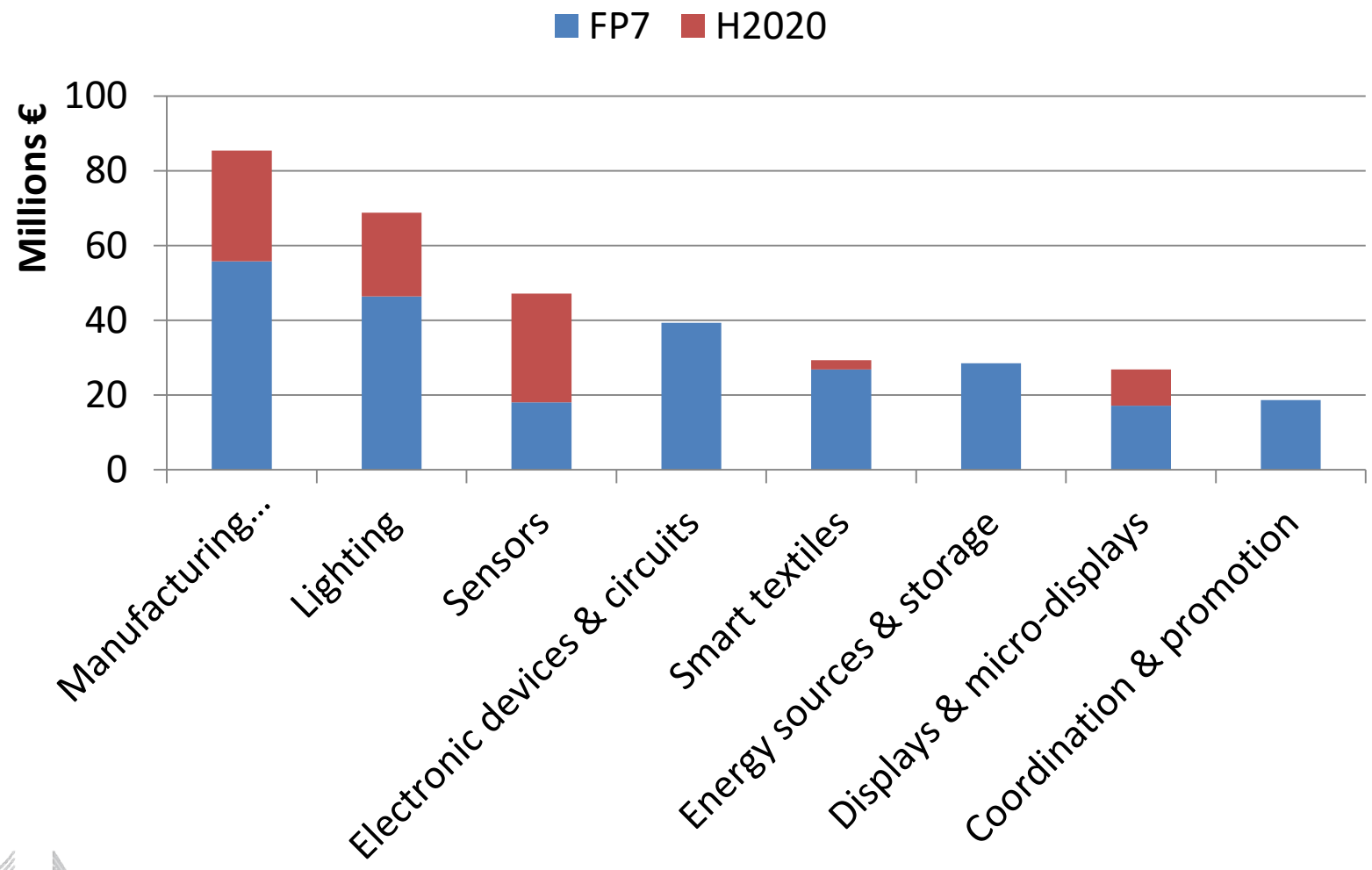
- FP7 Cluster: 10 projects, 43,5 M€
- Wide variety of devices and systems developed
- Great effort related to fabrication processes





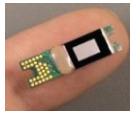
30+20+
8M€

ICT-02-2018
Flexible and Wearable Electronics



30+20
+8M€

ICT-02-2018
Flexible and Wearable Electronics


Displays


Lighting


Sensors

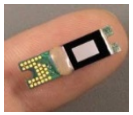

Automotive


Medical


Entertainment


Smart home


manufacturing



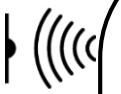
LOMID - flexible OLED-CMOS large microdisplays
Wafer thinning – 200 mm wafers

Optintegral - LED displays for advertisement
In-mould hybrid integration

10 M€

PHEBE
Efficient blue emitters for white OLEDs

LEO
Low cost energy efficient OLEDs for lighting



HAPPINESS
Haptic interface for automotive dashboards – with EAP – Electo Active Polymers - Printed

LUMENTILE
Lighting and sensing tiles

66 M€

LORIX
Large area organic X-Ray Flat-Panel detectors
Printed Organic Photo Diode (OPD) + Thin Film Transistors active matrices (TFT),

SOLEDLIGHT
Solution processed OLEDs for lighting

FLEXOLIGHTING
Flexible OLEDs for lighting

PING
Flexible NFC techno embedded in paper
Game cards and Packaging

18,3 M€

TransFlexTeg
large area distributed sensors
transparent thin film thermoelectric devices and sensors
Smart windows

ALABO - Laser scribing OPV

7.7 M€

ROLL-OUT - Roll-to-Roll – automotive, packaging, textile

RIA
IA

30+20+
8M€

ICT-02-2018
Flexible and Wearable Electronics

Scope

Open: October 2017
Close: 17 April 2018

- Enhancing manufacturability

TRL 4

Combine Organic/printed electronics and large area deposition technologies

→Multi-functional components

→ Equipment and processes for:
Large scale fabrication, Mass-customisation, Characterisation

- Integration technologies

New concepts for the Integration of: Transducers, Energy storage, Data storage, Logic, Displays, Light sources, Interconnect

TRL 4-5

- Device demonstration

Prototype validation in specific applications

- Integration of electronic devices in wearables /portable setting (Textiles, flexible/streatchable substrates
- Compatibility with low-cost manufacturing, Efficient energy scavenging and storage
- Functional performance, Durability and reliability
- Privacy, Security, Liability and free flow of data, Recyclability, waste management

TRL 4-5

30+20+
8M€

ICT-02-2018
Flexible and Wearable Electronics

Open: October 2017
Close: 17 April 2018

Expected Impact

Tech-R&D

- **Technology leaps in performance:**
  - **Functionalities, autonomy, reliability, manufacturability, cost**

    → **European leadership in Large Area, flexible and wearable electronics**
- **Increased R&D cooperation in technology device development and related manufacturing process**

New Opportunities (products-sectors)

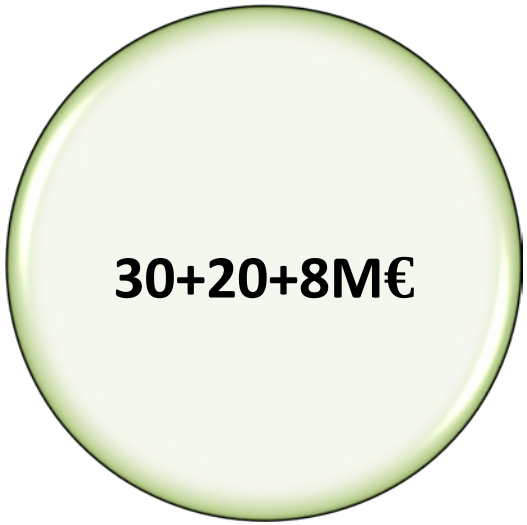
- **Emergence of new products (combining printed and large area processed electronics)**
- **New opportunities in new sectors, for new actors (eg designers, artists..)**

Economy-Finances

- **More manufacturing capabilities in Europe**
- **More industrial investments in flexible and wearable electronics**

Instrument Research and Innovation Actions (RIA) **30 M€ - 100% funding**

Additional opportunities in Large area electronics



30+20+
8M€

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

Deadline (2-step):
22-jan-2019
and
5-Sept-2019

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)

20 M€* - 70% funding

European Commission | Communications Networks, Content & Technology

** Co-funded by ICT and NMBP programmes*

DT-ICT-01-2019
Smart Anything Everywhere

SmartAnythingEverywhere

www.smartanythingeverywhere.eu

Submission deadline: 2-April-2018

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

Area 3: Flexible an Wearable Electronics

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)

Up to 8M€
(part of 48 € for 4 areas)

European Commission | Communications Networks, Content & Technology

ICT-03-2018-2019 Photonics Manufacturing Pilot Lines for Photonic Components and Devices

Overall context: Technologies for Digitising European Industry

ICT 03 Innovation Actions

30 M€

DDL: 17 APR 2018, @ 17:00

Manufacturing Pilot Lines for:

2018

- Indium Phosphide (IA)
- Silicon Photonics (IA)

2019

30 M€

- Next Generation Free-Form Optics
- Advanced optical medical device technologies for medical devices

Providing open access to photonics integrated circuits based on Indium Phosphide/Silicon Photonics, going beyond multi-project wafers and offering generic solutions for a wide class of applications.

Indicative budget for all proposals: 8-15 M€

Photonics PPP ICT 03 – 2018-2019

i. Manufacturing Pilot Lines

The specific challenge:

- to accelerate the design, development and uptake of photonics technology
- by a wide range of industrial players
- by providing low-barrier access to volume production of advanced photonics components available to a wide range of industrial players in particular SMEs which would otherwise not have easy access.

Photonics in Horizon 2020

LEIT ICT WP 2018

ICT-04 2018

Contact: Dimitrios.Axiotis@ec.europa.eu, Christoph.Helmrath@ec.europa.eu

Photonics Unit

DG CONNECT - European Commission

Photonics PPP - ICT 04 – 2018
Photonics based manufacturing, access to photonics, datacom photonics and connected lighting

Overall context: Technologies for Digitising European Industry

ICT 04.a Innovation Actions

25 M€

70 % / 100 % funding

i. Access to advanced photonics for researchers

ii. Enabling automated mass-manufacturing of datacom photonics products

iii. Connected Lighting

DDL: 17 APR 2018, @ 17:00

ICT 04.b Reasearch and Innovation Actions

30 M€

100 % funding

i. Highly productive Ultra-Short Laser Systems for Fast Materials Processing

ii. Tailored Laser Beams for Laser-based Manufacturing

Indicative EU contribution for all proposals: 3-6 M€

Photonics in Horizon 2020

LEIT ICT WP 2019

ICT-05-2019

Contact: Eddy.Corthals@ec.europa.eu, Photonics Unit
DG CONNECT - European Commission

ICT 05 – 2019: Application driven Photonics Components

An Overview of the Actions called: 76.5 M€

ICT05.a Innovation Actions

30 M€

- Photonics devices to support monitoring therapeutic progress
- Sensor-Based Optimization of Production Processes

LEIT ICT Call
OP: 16 OCT 2018

ICT05.b Research and Innovation Actions

- Photonics System on Chip/ System in Package for optical interconnect applications

45 M€

- Photonics systems for advanced imaging to support diagnostics driven therapy

ICT05.c Coordination and Support actions

- Fostering careers in photonics

1.5 M€

LEIT ICT Call
DDL: 28 MAR 2019

ICT 05 – 2019
Application driven Photonics Components
ICT 05.a Innovation Actions

i. Photonics devices to support monitoring therapeutic progress

Objective: develop reliable (high sensitivity, specificity and accuracy), safe to operate, cost-effective and fast photonics enabled devices to support assessing the effects of treatments of major diseases like cancer (**excluding skin cancer**), infectious, degenerative and cardiovascular diseases, including determining individual dispositions (eg methods to assess drug resistance) and monitoring of therapy progress.

30M€

Requirements:

- ✓ the proposed approach should already have been validated in clinical settings
- ✓ A medical equipment manufacturer should drive the action
- ✓ physicians/clinicians/surgeons must be closely involved
- ✓ Small scale clinical studies should be included, but clinical trials are excluded

Expected Impact → **Strengthened Europe industrial competitiveness in the biophotonics related market**

actions 3-6 M€, 70 - 100 % funding

ICT 05 – 2019
Application driven Photonics Components
ICT 05.b Research & Innovation Actions

ii. Photonics systems for advanced imaging to support diagnostics driven therapy

Objective: Actions should research ground-breaking, reliable (high sensitivity, specificity and accuracy), safe to operate, cost-effective and fast photonics enabled imaging systems to support diagnostics during intervention and treatments of major diseases like cancer (excluding skin cancer), infectious, degenerative and cardiovascular diseases.

Requirements:

45M€

- Physicians/clinicians/surgeons and a medical equipment manufacturer must be closely involved from requirement specifications to validation in clinical settings.
- Validation should take gender specificities into account.
- Clinical trials are excluded.

Expected Impact → **Increased European competiveness in the biophotonic areas and more effective medical interventions and treatments**

actions 3-6 M€, 100 % funding

ROBOTICS
in H2020 - ICT-2018-2020

DT-ICT-02-2018: Robotics Digital Innovation Hubs

ICT-09-2019-2020: Robotics in Application Areas

ICT-10-2019-2020: Robotics Core Technology

DT-ICT-12-2020: The smart hospital of the future

Contact: Cecile.Huet@ec.europa.eu
Robotics & AI

DT-ICT-02-2018
Robotics – Digital Innovation Hubs

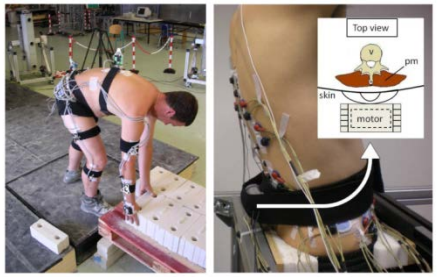
Challenge

Facilitate and accelerate a broad uptake and integration of robotic technologies

64 M€

A network of Digital Innovation Hubs in the following 4 areas:

- *Healthcare*
- *Infrastructure Inspection and Maintenance*
- *Agri-Food*
- *Agile Production*

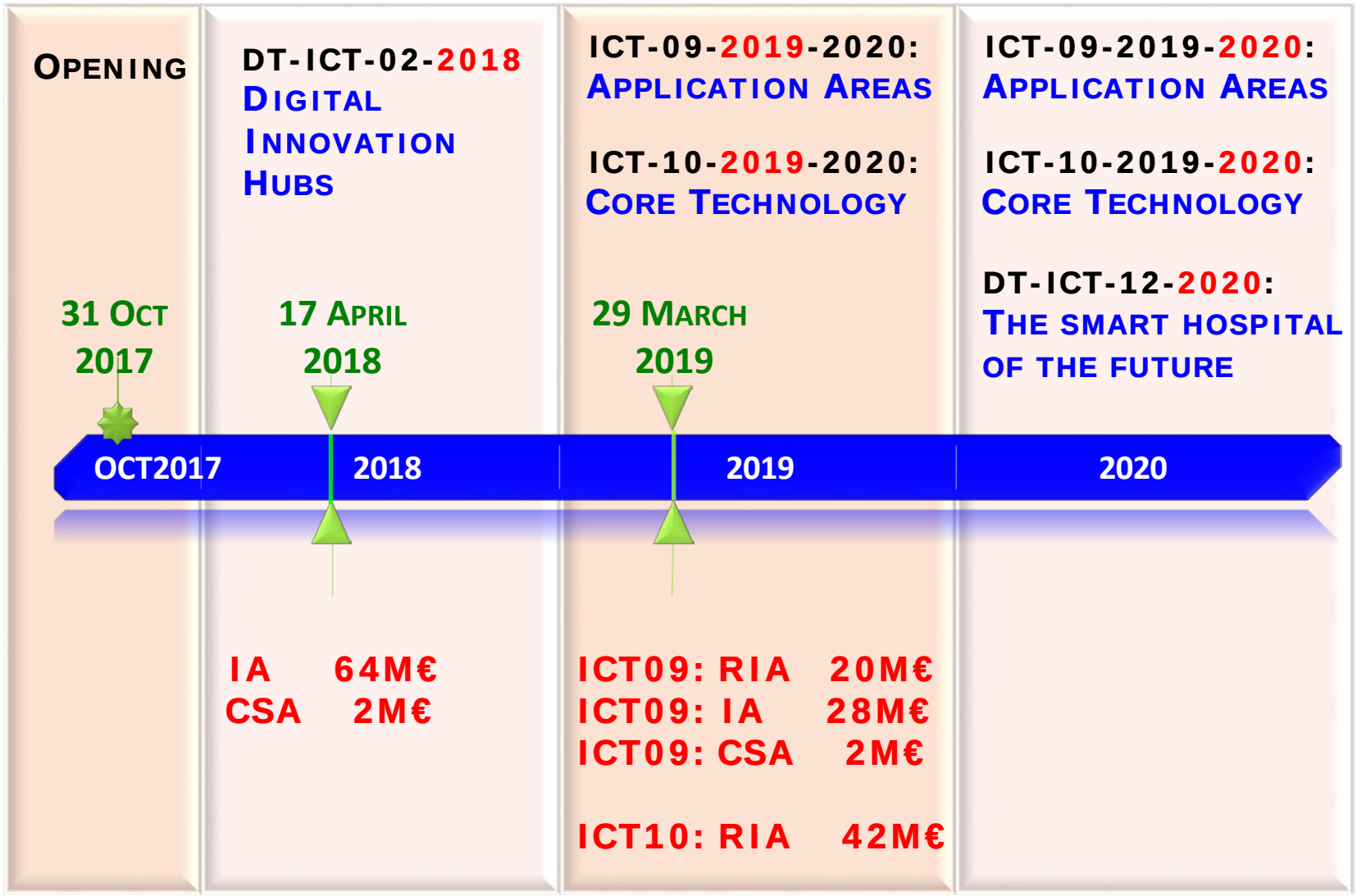


The Instrument

Innovation Actions (IA)

Up to 16M€

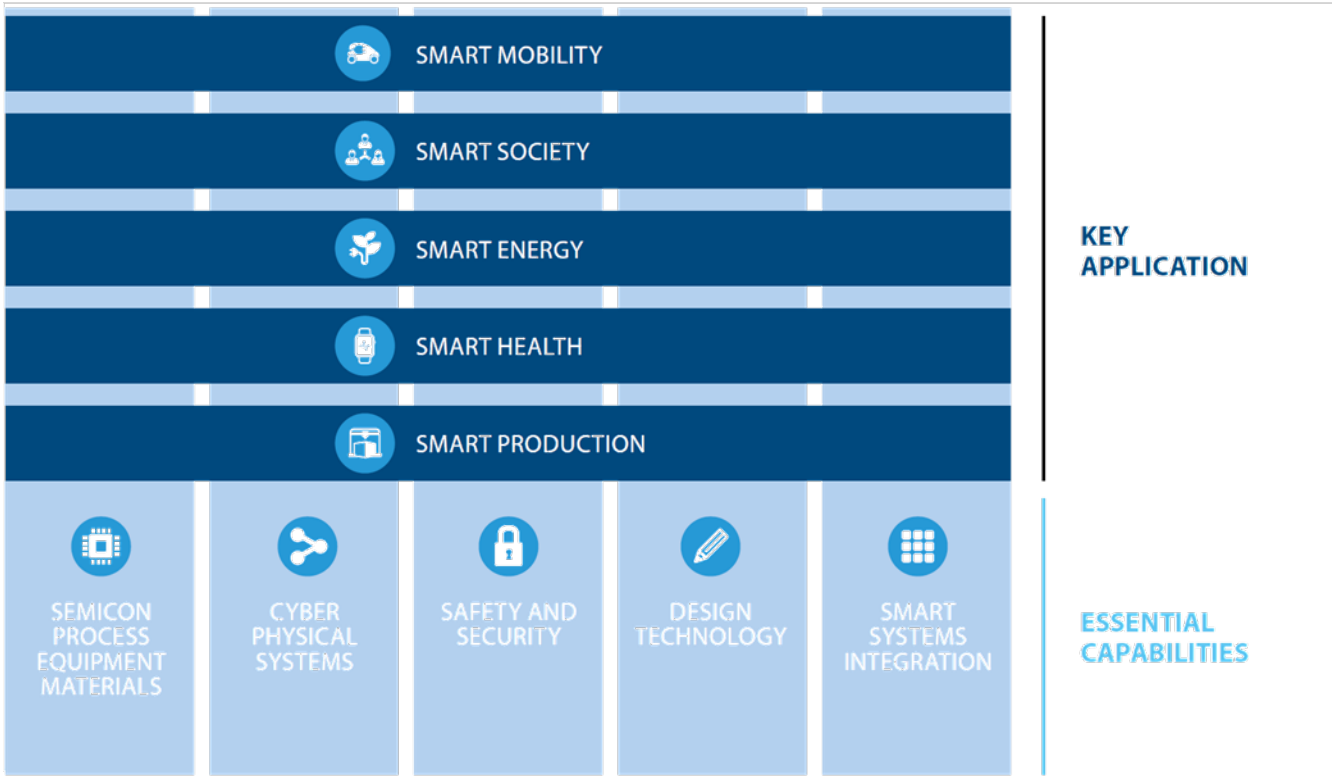
TIMELINE


OPENING
DT-ICT-02-2018
DIGITAL INNOVATION HUBS
ICT-09-2019-2020:
APPLICATION AREAS
ICT-10-2019-2020:
CORE TECHNOLOGY
ICT-09-2019-2020:
APPLICATION AREAS
ICT-10-2019-2020:
CORE TECHNOLOGY
DT-ICT-12-2020:
THE SMART HOSPITAL OF THE FUTURE
31 OCT 2017
17 APRIL 2018
29 MARCH 2019
OCT2017
2018
2019
2020
IA 64M€
CSA 2M€
ICT09: RIA 20M€
ICT09: IA 28M€
ICT09: CSA 2M€
ICT10: RIA 42M€

Additional calls of interest

ECSEL 2018 Calls for proposals:

- ECSEL Call 2018-1 for Innovation Actions (IA)
- ECSEL Call 2018-2 for Research and Innovation Actions (RIA)



https://www.ecsel.eu/calls/calls-2018, DDL 26/4 & 20/9/2018

Thank you!

https://ec.europa.eu/programmes/horizon2020/h2020-sections
http://ec.europa.eu/research/participants/portal/desktop/en/home.html
https://ec.europa.eu/digital-agenda/en/digitising-european-industry
http://ec.europa.eu/digital-agenda/en/about-components-systems
ECSEL http://www.ecsel-ju.eu/web/index.php

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