

LAS TIC EN HORIZONTE 2020

LIDERAZGO INDUSTRIAL

PROGRAMA DE TRABAJO 2014-15

Fernando Martín Galende
fernando.martin@cdti.es

CDTI

Granada, 28 de octubre de 2014

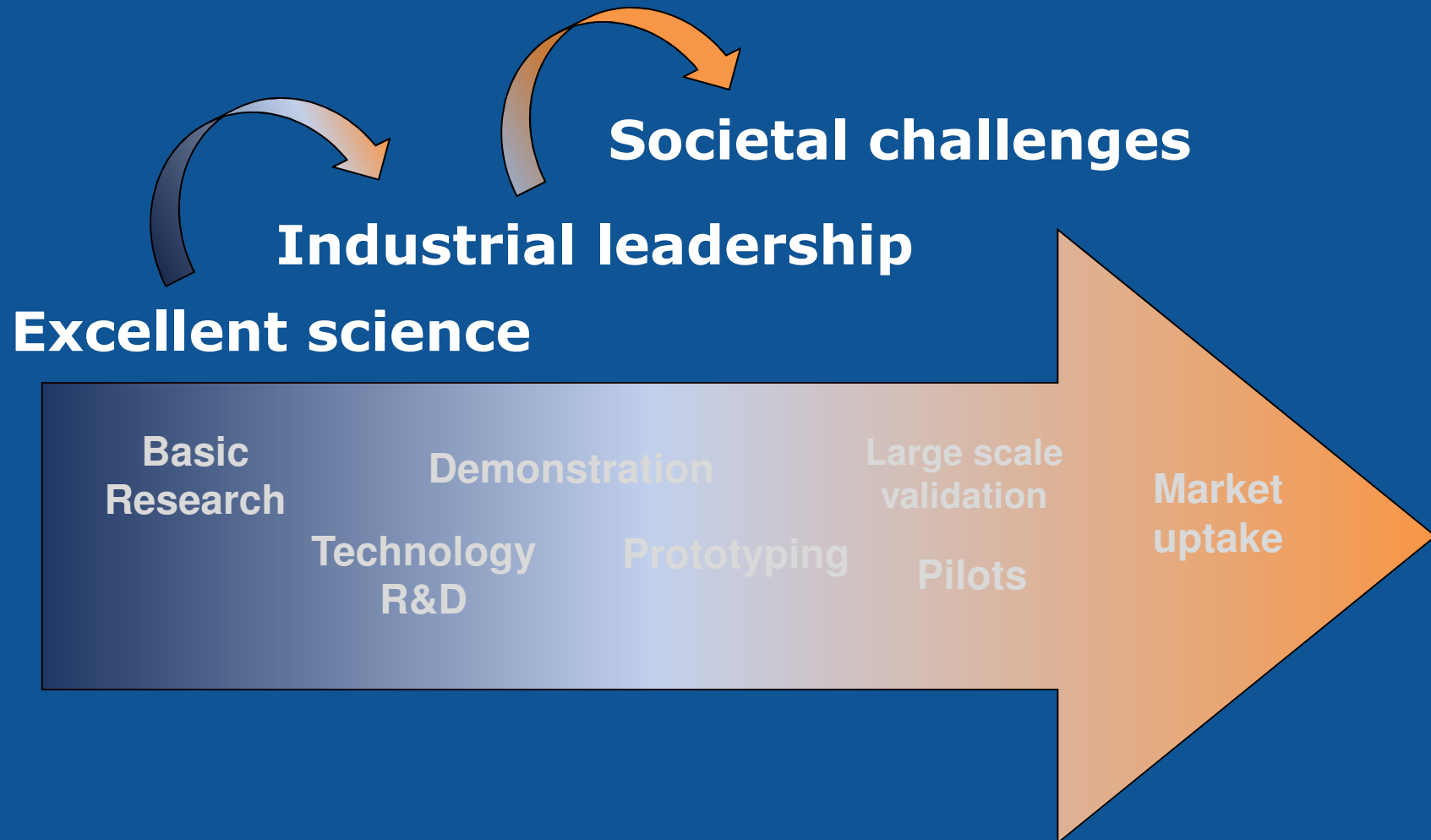
Índice

1. ICT: Del VII PM a H2020
2. ICT en los Tres Pilares
3. Cambios de contenido en el Programa ICT
4. Líneas Temáticas ICT para 2014-15
5. Próximas Convocatorias
6. Puntos de Contacto

Three priorities



Coverage of the full innovation chain



Three priorities for ICT



ICT in Excellent science



Excellent Science - ICT

2500
M€*



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

- **FET Open**: fostering novel ideas
- **FET Proactive**: nurturing emerging themes and communities
- **FET Flagships**: pursuing grand interdisciplinary science and technology challenges
 - **Graphene**
 - **Human Brain Project**

* Including budget for other areas than ICT covered in FET

- **Research infrastructures**

- Developing the European research infrastructure for 2020 and beyond

862 M€

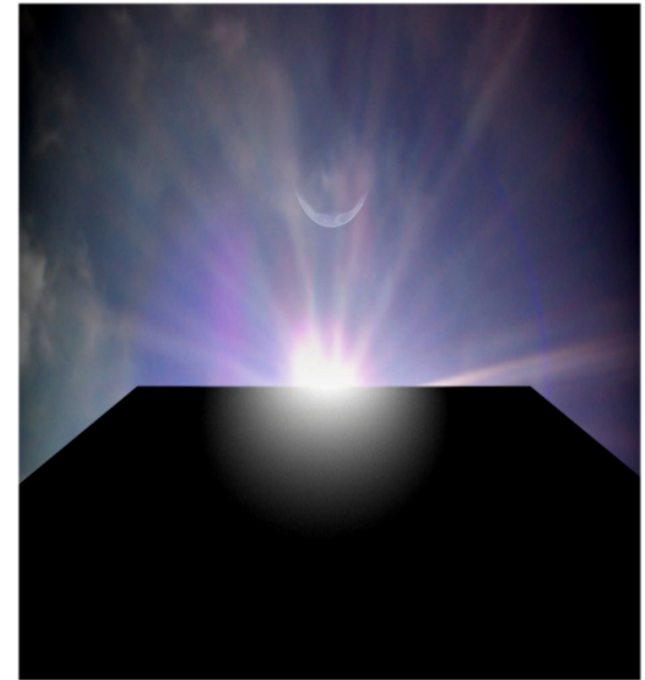
- **Development, deployment and operation of ICT-based e-infrastructures**

- **ICT infrastructure resources and services for Research**
- **Access to and management of scientific data**
- **High Performance Computing**

Future Emerging Technologies (FET) / 2014-2015

472 M€

- **FET Open** (160 m€)
 - **All technologies, no topical scope**
 - **Light and fast scheme**
 - Several cut-off dates per year, one-step submission of ~15 pages
 - One stage evaluation
- **FET Proactive** (132,4 m€)
 - **Global Systems Science (GSS)** (10 M€)
 - Improve the way in which scientific knowledge can stimulate, guide, and help evaluate policy and societal responses to global challenges
 - **Knowing, doing, being: cognition beyond problem solving** (15 M€)
 - New approaches to cognitive systems
 - **Quantum simulation** (10 M€)
 - Quantum technologies to ultimately address real world problems
 - **Towards exascale high performance computing** (97,4 M€)
 - »→ **HPC PPP**: To be coordinated with complementary work in LEIT and RI
- **FET Flagships** (179,6 m€)
 - **Graphene**
 - **Human Brain Project**



eInfrastructures / 2014-2015

177 M€

- **ICT infrastructure resources and services for Research (48 M€)**

- Provision of core services across e-infrastructures
- Research and Education Networking – GEANT
- eInfrastructures for virtual research environments

- **Access to and management of scientific data (72 M€)**

- Managing, preserving and computing with big research data
- Towards global data e-infrastructures – Research Data Alliance
- eInfrastructure for Open Access

- **High Performance Computing (57 M€)**

- Pan-European High Performance Computing infrastructure and services
- Centres of Excellence for computing applications
- Network of HPC competence centres for SMEs

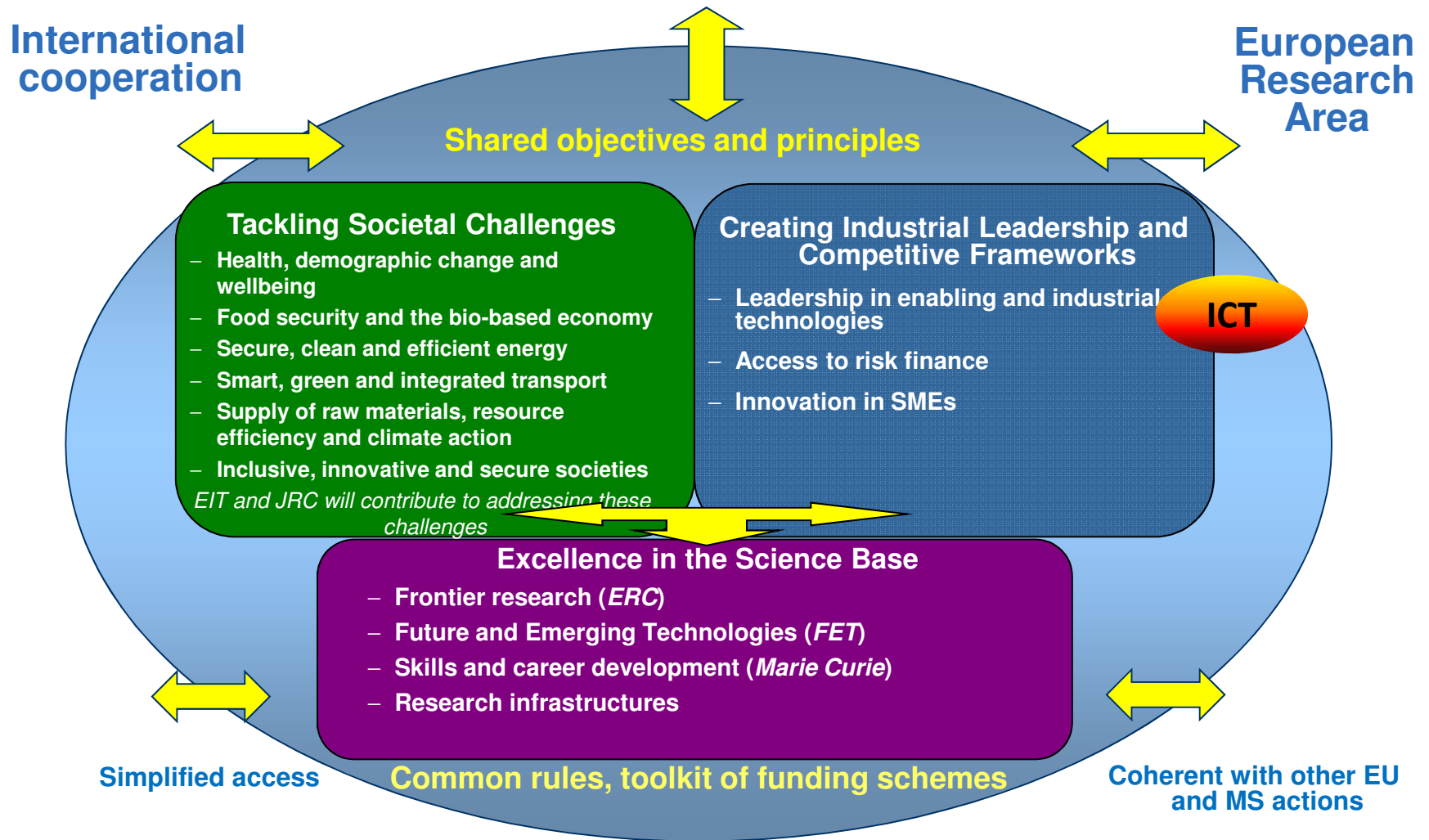


ICT in Industrial leadership



H2020: Objetivos y Estructura

Europe 2020 priorities



Repetimos...



Creating **Industrial Leadership** and
Competitive Frameworks



Leadership in Enabling and **Industrial**
Technologies



ICT

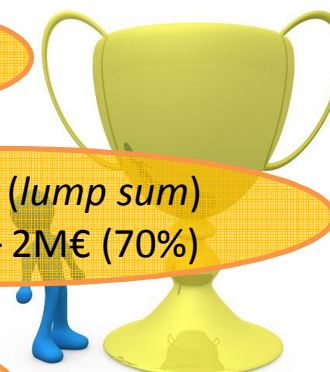
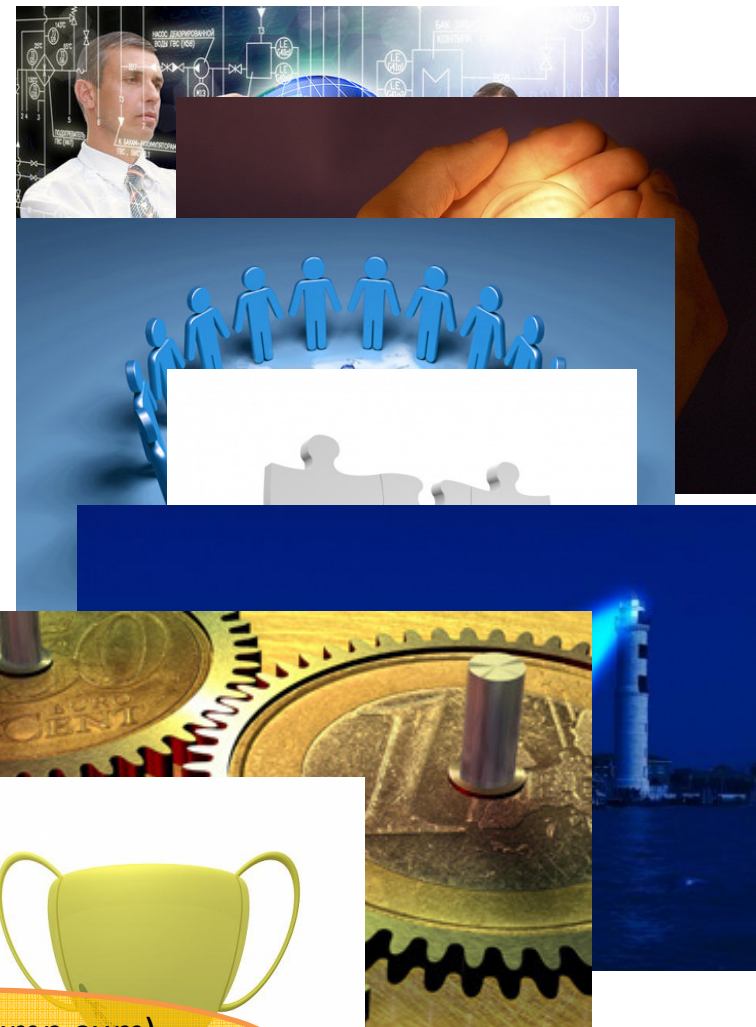
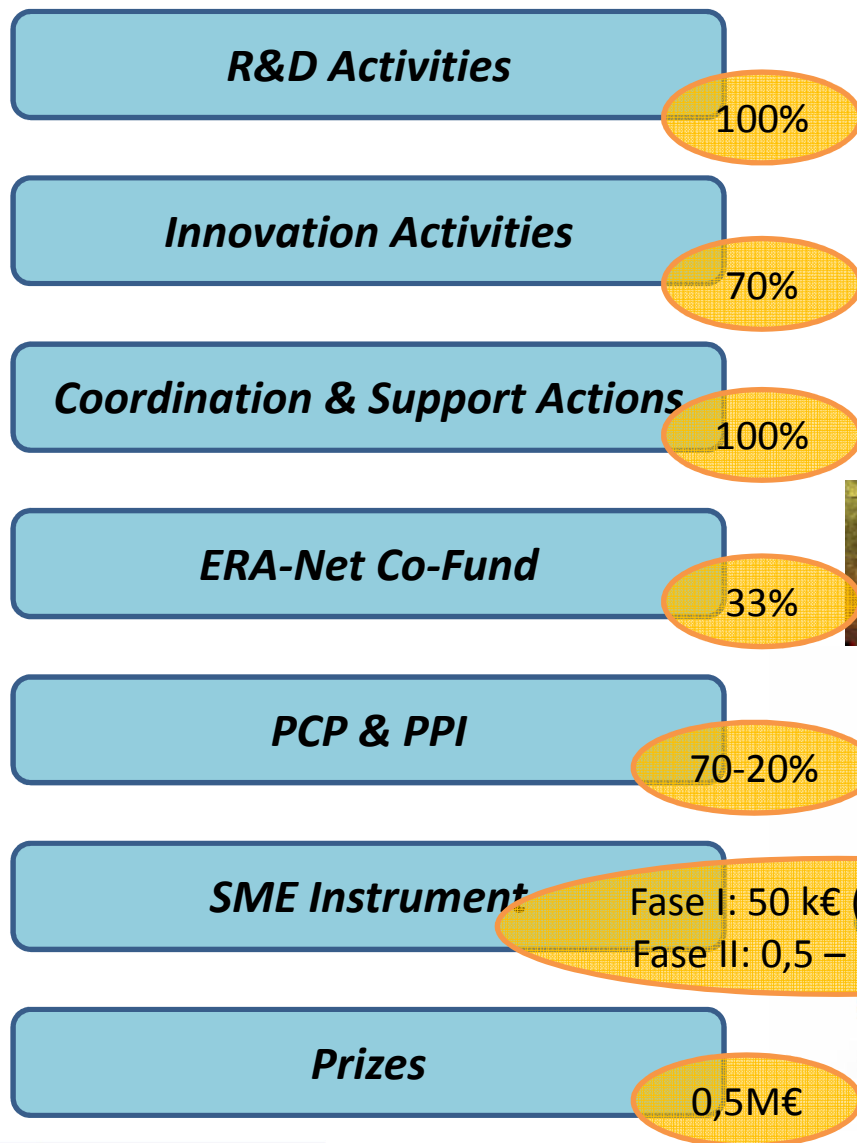
Objetivo:



Superar el Valle de la Muerte

- **More “topic-free”. More “objective-oriented”**
- **Industry-driven. Commitment towards industrialization.**
- **Application/Industry Validation**
 - Health, Food, Security, Manufacturing, Inclusion...
- **Bigger focus on innovation**
 - Business opportunities
 - Business cases/plans
 - Exploitation plans
 - User requirements/validation
 - Standardisation
- **Innovation Management**
 - Open Calls
 - Mini-proposals
- **Link with many other parts of H2020**

Instrumentos:



En general:
Small contribution: 2 – 4 M€
Large contribution: 5 – 8 M€

Cambios en los contenidos:



What's
IN



Cambios en los contenidos:

What's

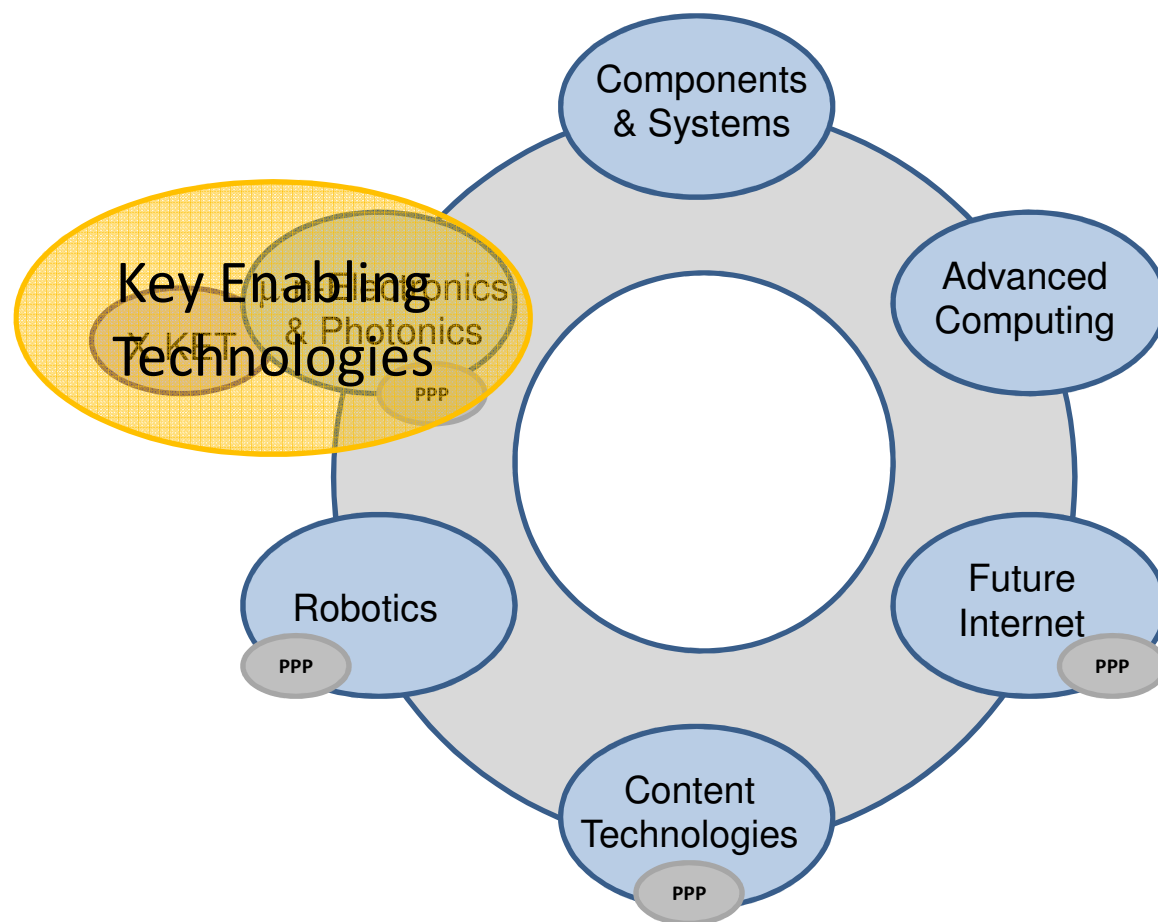
OUT

ICT Applications go to the
Societal Challenges
*(EeB and FoF center of gravity in NMBP)

ALL?

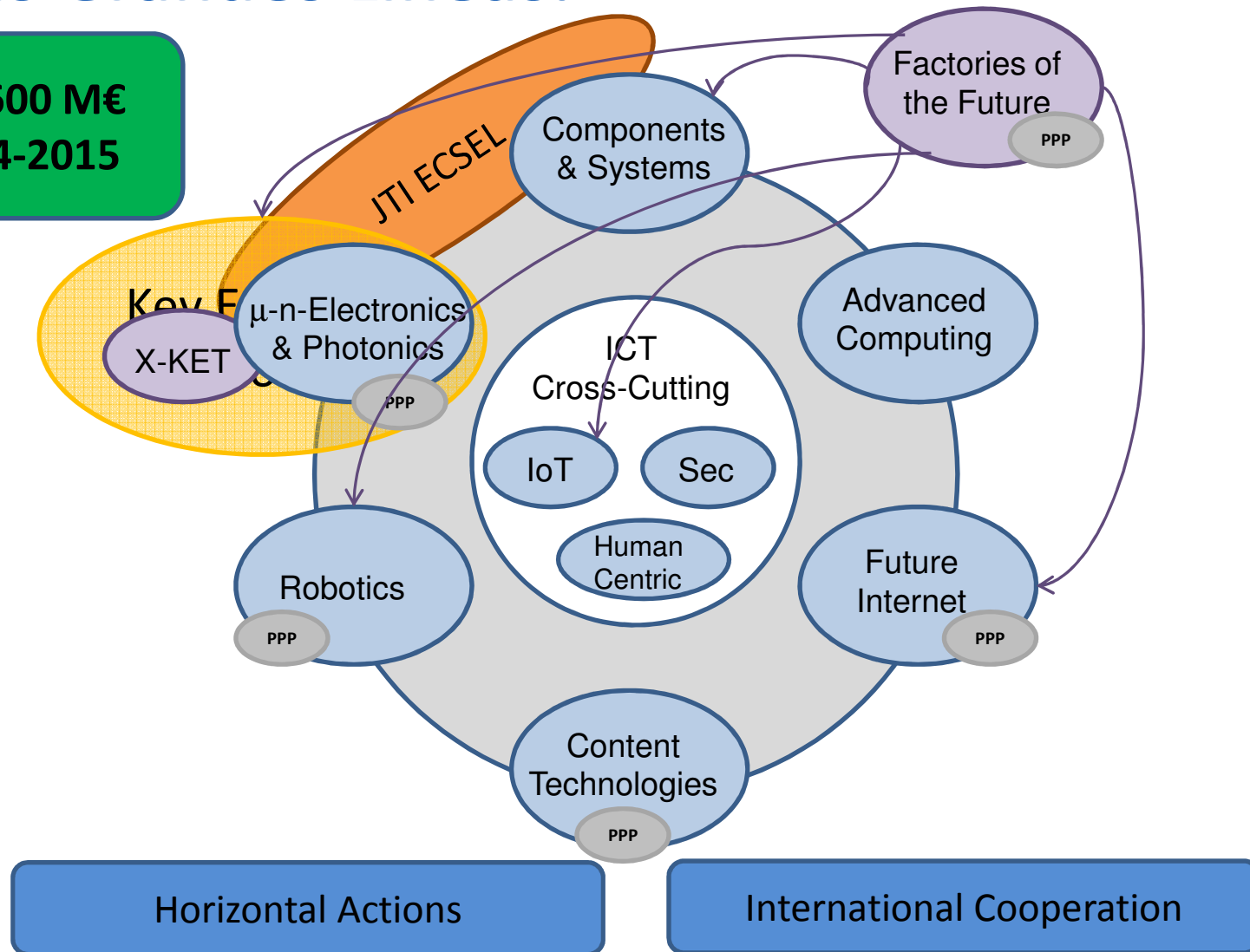
All FET Activities
go to Excellent
Science
Future & Emerging
Technologies

Seis Grandes Líneas:



Seis Grandes Líneas:

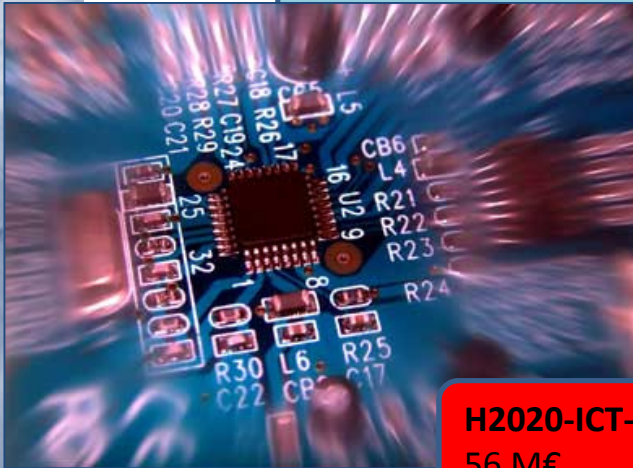
~ 1.600 M€
2014-2015



Programa ICT: Líneas temáticas en H2020 (I)

JTI ECSEL
1.200 M€

A new generation of components and systems: Engineering of advanced, embedded and energy and resource efficient components and systems.



H2020-ICT-2014
56 M€

Smart Cyber-Physical Systems (CPS)

H2020-ICT-2014
48 M€

Smart Systems Integration

H2020-ICT-2014
54 M€

Advanced Thin, Organic and Large Area Electronics

Programa ICT: Líneas temáticas en H2020 (II)

Advanced computing: Next generation and secure computing systems and technologies.



H2020-ICT-2015
57 M€

Customised and Low Power Computing

Programa ICT: Líneas temáticas en H2020 (III)

Future Internet: software, hardware, infrastructures, technologies and services.



H2020-ICT-2014
23 M€

Smart Networks and novel Internet Architectures

H2020-ICT-2014
32 M€

Smart Optical and Wireless Network Technologies

H2020-ICT-2014
73 M€

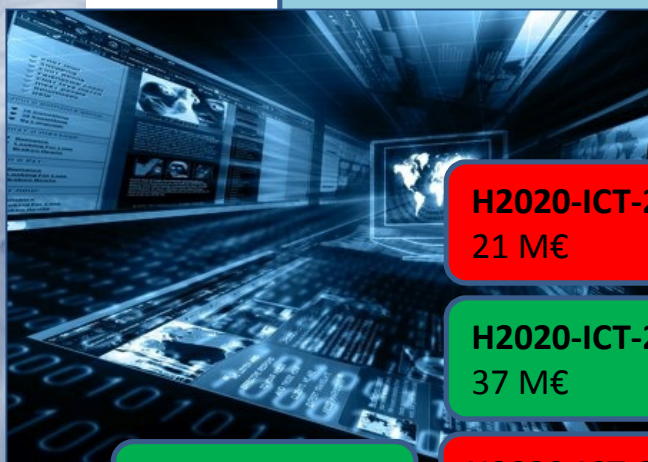
Advanced Cloud Infrastructures and Services

H2020-ICT-2015
22 M€

Public Sector Productivity/Innovation through
Cloud Computing Services

Programa ICT: Líneas temáticas en H2020 (III)

Future Internet: software, hardware, infrastructures, technologies and services.



H2020-ICT-2014
21 M€

Tools and Methods for Software Development

H2020-ICT-2015
37 M€

Collective Awareness Platforms for Sustainability and Social Innovation

H2020-ICT-2015
18 M€

H2020-ICT-2014
31,5 M€

Future Internet Research & Experimentation

H2020-ICT-2014
10 M€

Web Entrepreneurship

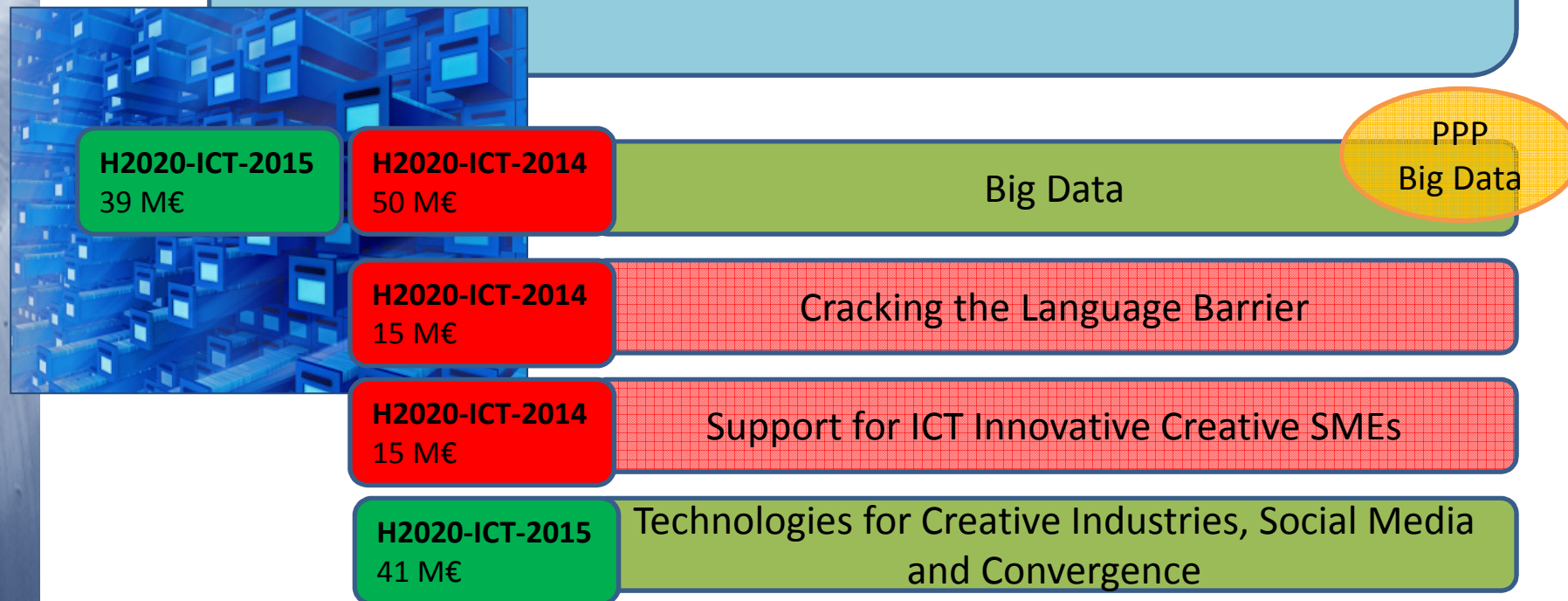
H2020-ICT-2014
125 M€

Advanced 5G Network Infrastructure for the PPP
Future Internet

5G

Programa ICT: Líneas temáticas en H2020 (IV)

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



Programa ICT: Líneas temáticas en H2020 (IV)

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



H2020-ICT-2015
52 M€

Technologies for better Human Learning and Teaching

H2020-ICT-2014
17 M€

Digital Gaming/Gamification Technologies

H2020-ICT-2014
31 M€

Multimodal and Natural Computer Interaction

Programa ICT: Líneas temáticas en H2020 (V)

PPP
Robótica

Robotics: Advanced interfaces, robotics and smart spaces.

<http://www.eurobotics-project.eu/robotics-ppp/>



H2020-ICT-2014
74 M€

Robotics 2014

Markets: Manufacturing, commercial, civil, agriculture

Technology Transfer: Robotics use cases

H2020-ICT-2015
83 M€

Robotics 2015

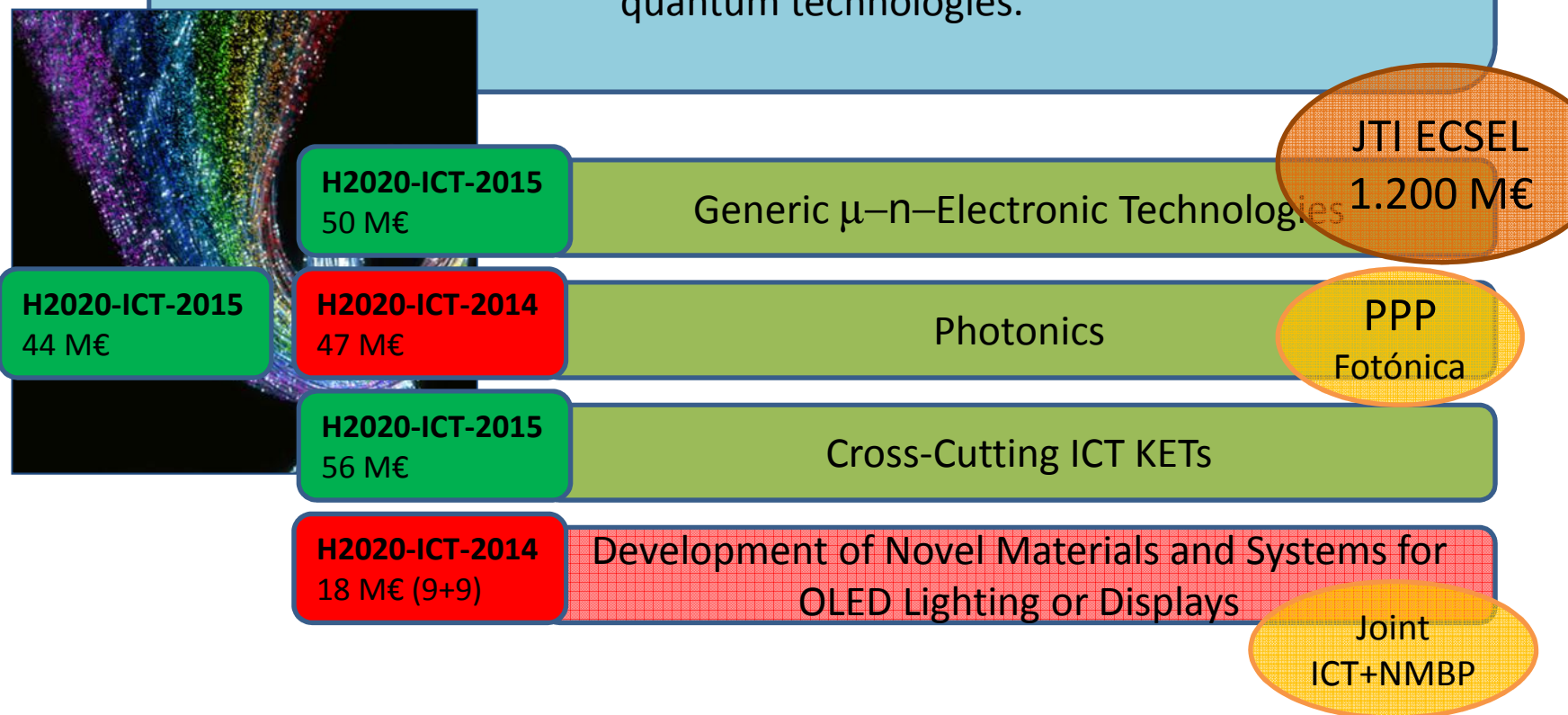
Markets: Healthcare, consumer, transport

Industry-Academia cross-fertilization

Technology Transfer: Robotics use cases

Programa ICT: Líneas temáticas en H2020 (VI)

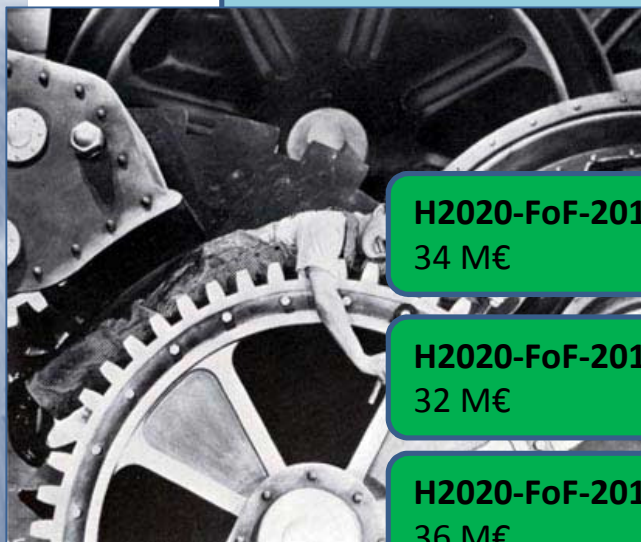
Micro- and nanoelectronics and photonics: Key Enabling Technologies related to micro- and nanoelectronics and to photonics covering also quantum technologies.



Programa ICT: Líneas temáticas en H2020 (VII)

PPP
FoF

Factories of the Future: Modernising Europe's Manufacturing Capabilities.



H2020-FoF-2014
34 M€

Process Optimisation of Manufacturing Assets

H2020-FoF-2015
32 M€

ICT-enabled Modelling, Simulation, Analytics and Forecasting Technologies

H2020-FoF-2015
36 M€

ICT Innovation for Manufacturing SMEs (I4MS)

H2020-FoF-2014
9 M€

Development of Novel Materials and Systems for OLED Lighting or Displays

Programa ICT: Líneas temáticas en H2020 (VIII)

ICT Cross-Cutting Activities: Basic and generic ICT technologies of use for the development of products, services and technologies in the six main lines and beyond.

H2020-ICT-2015
51 M€

Internet of Things and Platforms for Connected Smart Objects

H2020-ICT-2014
7 M€

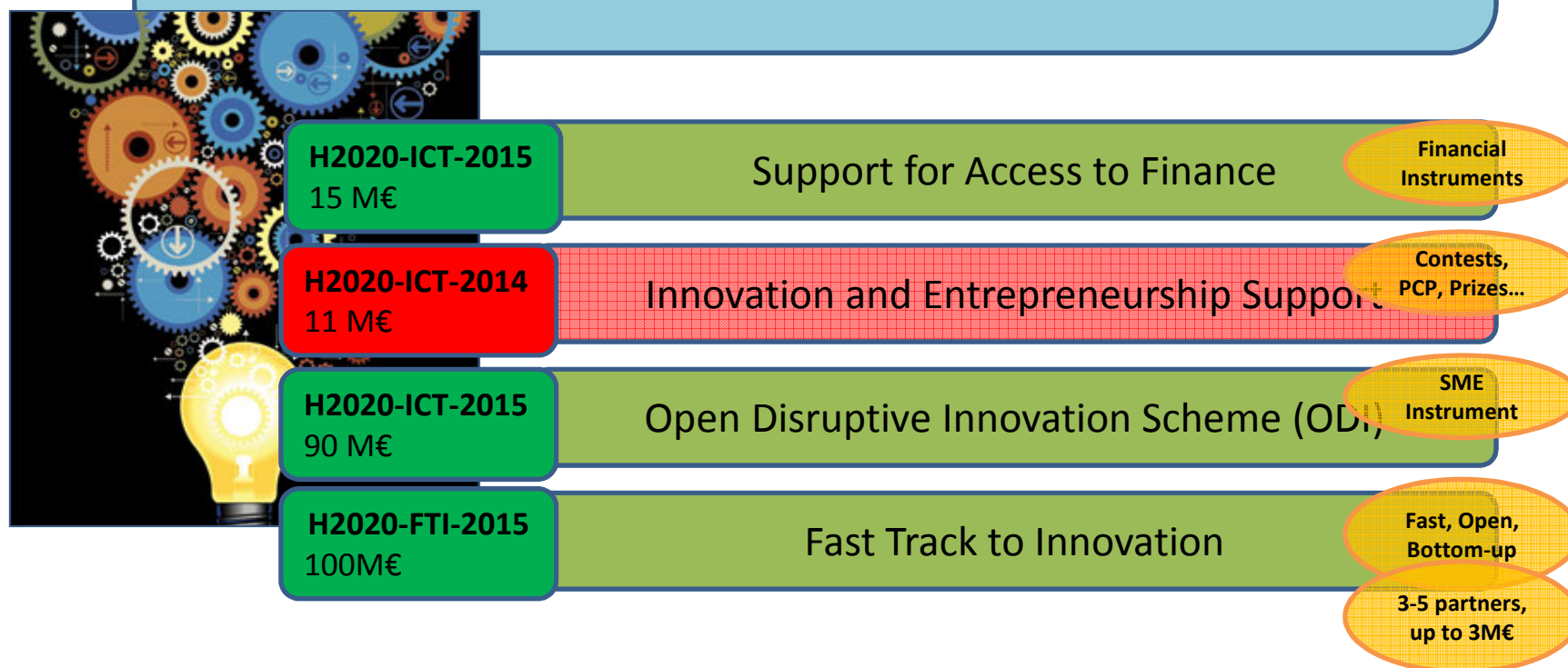
Human-centric Digital Age

H2020-ICT-2014
38 M€

Cybersecurity, Trustworthy ICT

Programa ICT: Líneas temáticas en H2020 (IX)

Horizontal ICT Innovation Actions: Ensure best leverage of innovation actions across the challenges and ICT R&D in H2020 delivers the intended impact on growth and competitiveness.



Programa ICT: Líneas temáticas en H2020 (X)

International Cooperation: International partnership building and support to dialogues with potential partners beyond Europe.



H2020-ICT-2015
3 M€

High Income Countries

CSA Actions

North America

East Asia / Oceania



H2020-ICT-2015
11 M€

Low and Middle Income Countries

R&D Actions

Sub-Saharan Africa

Programa ICT: Líneas temáticas en H2020 (X)

International Cooperation: EU-Brazil Research and Development Cooperation in Advanced Cyber Infrastructure.



H2020-EUB-2015
6 M€

Cloud Computing, including Security aspects

High Performance Computing

Experimental Platforms

Próximas Convocatorias:

Las fechas, contenidos, presupuestos y documentación relativa a todas las convocatorias podría aún sufrir leves cambios.



H2020-ICT-2015: 15/10/2014 – 21/04/2015

H2020-FoF-2014/2015: 11/12/2013 – 9/12/2014
(convocatoria específica coordinada con NMPB)

H2020-EUB-2015: 15/10/2014 – 21/04/2015

Open Disruptive Innovation: SME Instrument ->

Fast Track to Innovation : 6/01/2015 -> 22/04,
25/08 y 24/11

ICT in Societal challenges



Societal Challenges - ICT

636 M€
(2014-15)



- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, and forestry, marine, maritime and inland water research, and the bioeconomy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, environment, 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**

Key principles for ICT R&I in the Societal Challenges



- **Interoperability**
- **Re-use and economies of scale**
- **Breakthroughs leveraging the transformative power of ICT**
- **Preparation for market deployment**
- **+**
- **Information for future digital policy**

Societal Challenges - ICT

Proposed funding (M€, 2014-2015)

Challenge	Total	ICT	%
Health, demographic change and wellbeing	1 804	269	15%
Food security, sustainable agriculture, marine and maritime research & the Bioeconomy	687		
Secure, clean and efficient energy	1 447	72	5%
Smart, green and integrated transport	1 542	92	6%
Climate action, environment, resource efficiency and raw materials	745	26	3,5%
Innovative, inclusive and reflective societies	310	77	25%
Secure societies	393	100	25%

Health, demographic change and wellbeing

269 M€



- **Advancing active and healthy ageing with ICT**

- **Service robotics** within assisted living environments
- ICT solutions for **independent living with cognitive impairments**
- ICT solutions enabling **early risk detection and intervention**

- **Integrated, sustainable, citizen-centred care**

- ICT-based approaches for **integrated care** (beyond current state-of-art in tele-health and tele-care)
- **Self-management of health and disease**
- Public-procurement of innovative eHealth services

- **Improving health information and data exploitation**

- Digital representation of **health data** to improve diagnosis and treatment
- **eHealth interoperability**



Secure, clean and efficient energy

72 M€

- **Energy efficiency / buildings and consumers**
 - Public procurement of **green data centres**
 - New ICT-based solutions for **energy efficiency through citizens' behavioural change**
- **Competitive low-carbon energy / modernising the single European electricity grid**
 - Distribution grid and retail market
 - Next generation ICT infrastructure for **smart metering and smart grids**
- **Smart cities and communities**
 - Integration of **energy, transport and ICT** through **lighthouse projects** (large scale demonstration)



Smart, green and integrated transport

92 M€

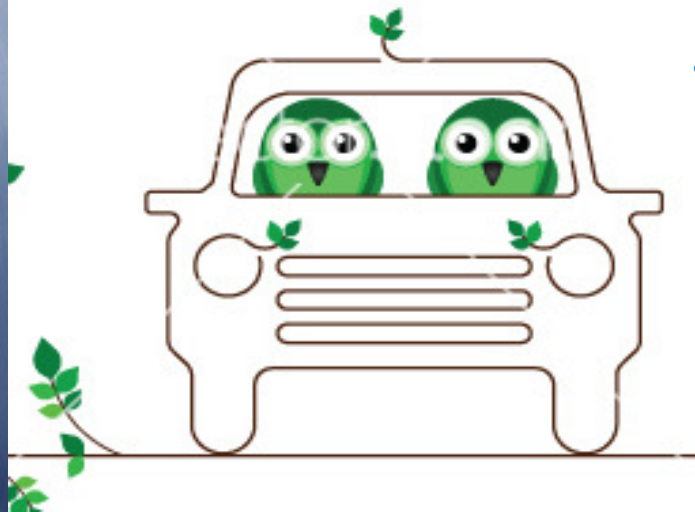
- **Road**

- **Cooperative Intelligent Transport Systems**

- Connecting people, vehicles, infrastructures and businesses
 - Safe and connected **automation in road transport**

- **Green vehicles**

- **Electric vehicles'** enhanced performance and **integration into the transport system and the electricity grid**



- **Smart cities and communities**

- Integration of **energy, transport and ICT** through **lighthouse projects** (large scale demonstration)

Climate action, environment, resource efficiency and raw materials

26 M€

- **Waste management**

- ICT solutions for waste traceability, waste material flow management

- **Water management**

- Development and deployment of advanced ICT solutions for water resources management in agriculture and urban areas



Europe in a changing world – inclusive, innovative and reflective societies

77 M€

- **Reflective societies – Cultural Heritage**
 - **Innovative ecosystems of digital cultural assets**
 - **Advanced 3D modelling for accessing and understanding European cultural assets**
- **New forms of innovation**
 - **Innovation in the public sector** by using emerging ICT technologies
 - ICT-enabled **open government**
 - Personalised public services
 - M-government
 - Open participation
 - Transparency
 - ICT for **learning and inclusion**



Secure societies – protecting freedom and security of Europe and its citizens

100 M€

- **Digital security: cybersecurity, privacy and trust**
 - Protecting our society by providing sustained **trust in the usage of ICT** and in securing the ICT underlying our digital society
 - **Preventing cyber-attacks** on any component of the digital society
 - **Ensuring freedom and privacy in the digital society**, protecting the fundamental values of our society and democratic rights of our citizens in cyberspace
 - Protect the weak in our society from abuses over the internet and **giving the user control over his private data**
 - Demonstrating the viability and maturity of state-of-the-art security solutions in **large scale demonstrators**, involving end users

Aspectos a tener en cuenta:

- **Aspectos de Innovación:**
 - **Impacto (criterio principal en Acciones de Innovación e Instrumento PYME)**
 - **Identificar SIEMPRE primero el impacto descrito en el WP para ese objetivo/topic!**
 - **Compromiso Industrial**
 - **Plan de Explotación**
 - **Gestión de los DPI:** <https://www.iprhelpdesk.eu/>
 - **Contribución a Standards:** <http://ec.europa.eu/digital-agenda/events/cf/ict2013/item-display.cfm?id=11541>
 - **Posibles Patentes (ojo a cuándo se desvela la documentación técnica)**
 - **Aspectos de Open Access y Data Management Plan:** <https://ec.europa.eu/digital-agenda/en/news/open-access-eu-project-results-go-public>
- **Evaluación remota y en una única fase (salvo excepciones). Multi-step?**
- **Plazos previstos de 5+3 meses: Apenas habrá tiempo para negociaciones. Las propuestas seguirán la estructura de la DoW del Grant Agreement.**
- **Comprobar SIEMPRE la viabilidad financiera de los coordinadores y el estatus de PYME; es posible que no haya tiempo para cambios después:**
<https://ec.europa.eu/research/participants/urf/lfvSimulation.do>

Aspectos a tener en cuenta:

- ***Ojo a las posibles limitaciones de páginas: warn & watermark:***
 - SME instrument:
 - 10 pages for phase 1
 - 30 pages for phase 2
 - Support actions: 50 pages
 - 'Innovation' / 'Research & Innovation' actions: 70p
 - PCP / PPI proposals: 90 pages
- **Darse de alta en la base de datos de evaluadores/revisores de la Comisión para H2020:**
<http://ec.europa.eu/research/participants/portal/page/experts>
- **Documentación Convocatoria 2014:**
<http://www.cdti.es/index.asp?MP=9&MS=31&MN=2&TR=A&IDR=7&xlor=RSS-4&id=584>

Personas de Contacto en CDTI:



Leadership in Enabling and Industrial Technologies: ICT



Esther Casado Moya: Content Technologies & Information Management. SME Instrument.
esther.casado@cdti.es

Paloma Dorado Aguilar: Components & Systems. μ -n-electronics. ECSEL JTI.
paloma.dorado@cdti.es

Fernando Martín Galende: Advanced Computing. Robotics. Photonics. Factories of the Future. EU-Brazil Actions.
fernando.martin@cdti.es

Fernando Rico Ríos: Future Internet. ICT Cross-cutting Activities. Access to finance, Innovation and Entrepreneurship. EU-Japan Actions.
fernando.rico@cdti.es

Personas de Contacto en CDTI:



Societal Challenges: ICT Applications



Health: eHealth, Ageing, AAL, etc.

marta.gomez@cdti.es

carolina.carrasco@cdti.es

Energy: ICT for Energy Efficiency, Smart Cities, ICT for Smart Grids, Energy Efficient Buildings, etc.

guillermo.alvarez@cdti.es

luisa.revilla@cdti.es

Transport: Intelligent Transport Systems, Green Cars, Urban Mobility, Logistics, etc.

julio.dolado@cdti.es

Climate: ICT for Environment, Water Management, Waste Management, etc.

carolina.rodriguez@cdti.es

lydia.gonzalez@cdti.es

Personas de Contacto en CDTI:



Societal Challenges: ICT Applications *LEIT: Public Private Partnerships*



Security: Privacy, Access Control, Secure Information Sharing, Trust eServices, Critical Infrastructures Protection, etc.

maite.bovero@cdti.es

Food: Food Chain Data Standardisation, etc.

josemanuel.gonzalez@cdti.es
marta.conde@cdti.es

NMP: PPP of Factories of the Future and Energy Efficient Buildings.

lucia.iñigo@cdti.es

MUCHAS GRACIAS

