



ICT in the Societal Challenges of HORIZON 2020

The New EU Framework Programme for
Research and Innovation
Workprogramme 2014-2015

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HORIZON 2020

Three priorities



Priority 3. Societal challenges

Why:

- Concerns of citizens and society/EU policy objectives (climate, environment, energy, transport, etc.) cannot be achieved without innovation
- Breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities
- Promising solutions need to be tested, demonstrated and scaled up

Societal Challenges - ICT



- **SC1: Health, demographic change and wellbeing**
- SC2: Food security, sustainable agriculture, and forestry, marine, maritime and inland water research, and the bio-economy
- **SC3: Secure, clean and efficient energy**
- **SC4: Smart, green and integrated transport**
- **SC5: Climate action, environment, resource efficiency and raw materials**
- **SC6: Europe in a changing world – inclusive, innovative and reflective societies**
- **SC7: Secure societies – protecting freedom and security of Europe and its citizens**

SC1: Health, demographic change and wellbeing / 2014-2015 (indicative basis)

Draft – Pending
Commission Decision

• Advancing active and healthy ageing with ICT

– **PHC 19 – 2014: Service robotics** within assisted living environments – **24.6 M€**

Call DDL: 15 April 14

– **PHC 20 – 2014: ICT solutions for independent living with cognitive impairments** – **10 M€**

– **PHC 21 – 2015: ICT solutions enabling early risk detection and intervention** – **21 M€**

DG CNECT Contact Point for PHC 19, 20 : Unit H2

CNECT-ICT4ageing@ec.europa.eu

• Integrated, sustainable, citizen-centred care

– **PHC 25 – 2015: Advanced ICT systems and services for Integrated Care** – **21 M€**

– **PHC 26 – 2014: Self-management of health and disease: citizen engagement and mHealth** – **59.6 M€**

Call DDL: 15 April

– **PHC 27 – 2015: Self-management of health and disease and patient empowerment supported by ICT (PCP instr)** – **15 M€**

– **PHC 28 – 2015: Self-management of health and disease and decision support systems based on predictive computer modelling used by the patient him or herself** – **20 M€**

– **PHC 29 – 2015: Public-procurement of innovative eHealth services (PPI instrument)** – **10 M€**

DG CNECT Contact Point for PHC 26 : Unit H1

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SC1: Health, demographic change and wellbeing / 2014-2015 (indicative basis)

Draft – Pending
Commission Decision

• Improving health information and data exploitation

- **PHC 30 – 2015:** Digital representation of health data to improve disease diagnosis and treatment – 20 M€
- **PHC 34 – 2014: eHealth interoperability – 4 M€**

Call DDL: 15 April 14

• Coordination and Support Actions and Other Actions

- **HCO 1 – 2014:** Innovation Partnership: Support for the European Innovation Partnership on Active and Healthy Ageing – 2 M€
- **HCO 2 – 2014:** Joint Programming: Coordination Action for the Joint Programming Initiative (JPI) "More Years, Better Lives - the Challenges and Opportunities of Demographic Change" – 2 M€
- **HOA7 – 2015:** eHealth Sectoral Inducement Prize – 2 M€

Call DDL
15 April 2014

- **EU support to the Active and Assisted Living (AAL) Programme – 50 M€** (25 M€ in 2014 and 25 M€ in 2015)

DG CNECT Contact Point for PHC 34 : Unit H1
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SC1 Health, demographic change and wellbeing / 2014-2015

PHC 19 – 2014: Service robotics within assisted living environments

PHC 20 – 2014: ICT solutions for independent living with cognitive impairments

Draft – Pending
Commission Decision

PHC 19: 24.6 M€

Research and Innovation actions

Breakthroughs developments on *service robotics in assisted living environments* which can help an ageing population to remain active and independent for longer
→ Applicability in real settings, safety & acceptability

100% funding
Small projects (3-4 M€)

PHC 20: 10 M€

2-3 M€ projects
70% funding

a. Innovation actions

Deployment of user led ICT pilot projects in support of independent living

- Pilots building on common, flexible and open ICT solutions which can be adapted to specific users' needs, allowing them to live independently for longer while experiencing *cognitive impairment*
- Viable business and financial models, and standardisation and interoperability work on required ICT platforms, services and data sources
- Every pilot should have min 4 pilot sites in 4 countries

single-stage proposal submission
Call DDL: 15 April 2014

HORIZON 2020

EC Contact Point: Unit H2
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SC1 Health, demographic change and wellbeing / 2014-2015

PHC 26 – 2014: Self-management of health and disease: citizen engagement and mHealth

PHC 34 – 2014: e-health interoperability

Draft – Pending
Commission Decision

PHC 26: 59.6 M€

PHC 34: 4 M€

a. Research and Innovation actions

Empowering citizens to manage their own health and disease – Focus is on:

i. citizen engagement in health, wellbeing and prevention of diseases

→ enable individuals to become co-managers of their health and wellbeing with the help of ICT, tools and personalised services

ii. mHealth applications for disease management

→ Focus is on research on application development for disease management

3-5 M€ projects
100% funding

Coordination and Support Actions

- i. Explore **co-existence of competing / overlapping (clinical) reference standards** in a common eHealth European interoperability framework and contribute to the implementation of the EU-US MoU and roadmap
- ii. Explore combining existing or developing a new European or international standard for cross border **ePrescription**
- iii. Analysing the use of SNOMED CT as a core terminology to solve semantic interoperability issues for cross border and national / regional eHealth deployments in the EU
- iv. CEF supports deployment of cross border eHealth Services → Demonstrate cost-effectiveness of interoperability benefits for healthcare providers to encourage them to invest in interoperable eHealth systems

100% funding
1 CSA per topic

single-stage proposal submission
Call DDL: 15 April 2014

HORIZON 2020

DG CNECT Contact Point: Unit H1
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SC3 Secure, clean and efficient energy / 2014-2015 (indicative basis)

Draft – Pending
Commission Decision

• Energy efficiency / buildings and consumers

- **EE 8 – 2014:** Public procurement of innovative sustainable energy solutions
→ scope includes the support to public authorities in procuring fast-evolving ICTs such as Green Data Centres → CSA action, 1.5 M€ **Call DDL: 05 June 14**
- **EE 11 – 2014/15: New ICT-based solutions for energy efficiency – 8.5 M€ (2014) and 8.5 M€ (2015)** **Call DDL: 20 March 14**

• Competitive low-carbon energy / modernising the single European electricity grid

- **LCE 7 – 2014: Distribution grid and retail market**
→ the scope takes into account the contribution of ICT infrastructure to smart grids and smart metering – **60 M€ (2014)** **Call DDL: 07 May 14**

• Smart cities and communities

- **SCC 1 – 2014/2015: Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse (large scale demonstration - first of the kind) projects – 93 M€ (2014) and 88 M€ (2015)** **Call DDL: 07 May 14**

SC3 Secure, clean and efficient energy / 2014-2015

EE 11 – 2014/15: New ICT-based solutions for energy efficiency

EE 11: 8.5 M€ (2014) & 8.5 M€ (2015)

**Draft – Pending
Commission Decision**

Research and Innovation actions

Aim: To motivate and support citizen's behavioural change to achieve greater energy efficiency taking advantage of ICT (in particular ***gaming and social networking***)

Scope: Create innovative IT ecosystems that would develop services and applications making use of information generated by energy consumers (e.g. through social networks) or captured from sensors (e.g. smart meters, smart plugs).

→ Applications range from apps for smart phones and tablets to serious games to stimulate consumers' participation in the market.

→ Deploy and validate in real life conditions & Include detailed plans for sustainability and large-scale uptake beyond the project's life time

**1.5 – 2 M€ projects
100% funding**

**single-stage proposal submission
Call DDL: 20 March 2014**

**DG CNECT Contact Point: Unit H5
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SC3 Secure, clean and efficient energy / 2014-2015

LCE 7 - 2014: Distribution grid and retail market

Draft – Pending
Commission Decision

LCE 7: 60 M€ (2014)

Innovation actions

Aim: Cost-effective ICT infrastructure support for smart grids and smart metering

- Integrating and validating solutions to grid challenges focusing on field demonstration of system integration and supporting R&D
- Preparing first replication of the solutions in different contexts and/or cities integrating retail markets, demand response, new business models, advanced ICT. Demo priorities are:
 1. Validation of demand response systems offering services to all actors in the retail markets
 2. Demo of advanced solutions to improve low voltage network monitoring and control
 3. Deployment of a flexible architecture for smart metering systems decoupling metrology from user functionalities and allowing plug and play addition of smart grid functionalities

For 1 and 3: 21 M€,
with projects of 2.5 to 3 M€
For 2: 38 M€ with projects of 20 –25 M€
70% funding

Coordination and Support Actions

Cost benefit analysis of deployment options for smart grids ICT infrastructure in the context of the present energy and telecom regulatory frameworks

1 M€
100% funding

single-stage proposal submission
Call DDL: 07 May 2014

DG CNECT Contact Point: Unit H5
Merce.Griera-i-Fisa@ec.europa.eu

SC3 Secure, clean and efficient energy / 2014-2015

SCC 1 – 2014-15: Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse projects

Draft – Pending
Commission Decision

SCC 1: 89.32 M€ (2014) and 107.18 M€ (2015)

Projects of 18 to 25 M€
70% funding

Innovation actions

Aim: To identify, develop and deploy replicable, balanced and integrated solutions in the energy, transport, and ICT actions through partnerships between municipalities and industries

→ Lighthouse projects: large scale demonstration actions of replicable concepts (TRL ≥ 7)

Areas to address:

- 1. (Nearly zero) or low energy districts:** through the integration and management of: i) the supply of energy by exploiting local resources (waste heat, renewables, storage); ii) retrofitting of buildings (use of sustainable materials) iii) the x-cutting ICT solutions for the design and overall management of energy/ transport systems
- 2. Integrated Infrastructures:** through the integration of physical infrastructures such as core networks, street scenes, lighting, etc. leading to quantifiable benefits

3. Sustainable urban mobility: through the integration of energy/ fuelling infrastructure with vehicle fleets powered by alternative energy carriers + assess implications on energy management and of the impact on the electricity grid (electromobility)

- Include industry, city planning authorities
- Co-involve 2 - 3 follower cities (willing to replicate solutions at the end of the project)
- All activities must be part of ambitious urban plans
- Secure funding for other parts of the programme from other sources (regional funds, etc.)
- demonstrate and validate attractive business plans based on already existing city planning

single-stage proposal submission

Call DDL: 07 May 2014

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SC4 Smart, green and integrated transport / 2014-2015 (indicative basis)

Draft – Pending
Commission Decision

- **Road Transport: two dedicated ICT topics**

- **MG 3.5 – 2014: Cooperative ITS for safe, congestion-free and sustainable mobility – 20 M€**

- Connecting people, vehicles, infrastructures and businesses

Two-stage proposal submission
DDL Stage 1: 18 March 14
DDL Stage 2: 28 Aug 14

- **MG.3.6 – 2015: Safe and connected automation in road transport – 23 M€**

- **Urban mobility** → ICT can play a role in the following topic:

- **MG 5.3 – 2014: Tackling urban road congestion – 46 M€**

Two-stage proposal submission
DDL Stage 1: 18 March 14
DDL Stage 2: 28 Aug 14

- **Logistics** → ICT can play a role in the following topic:

- **MG.6.3 – 2015: Common communication and navigation platforms for pan-European logistics applications – 18 M€**

- **Green vehicles**

- **GV.8 – 2015: Electric vehicles' enhanced performance and integration into the transport system and the grid (addresses the integration of the overall cycle of electric vehicles' (EV) energy management into a comprehensive EV battery and ICT-based re-charging system management) – 20 M€**

SC4 Smart, green and integrated transport / 2014-2015

MG 3.5 – 2014: Cooperative ITS for safe, congestion-free and sustainable mobility

Draft – Pending
Commission Decision

MG 3.5: 20 M€

a. Research and Innovation actions

Interconnect People, vehicles, infrastructure and businesses into 1 cooperative ecosystem for their enhanced cooperation

- **Open in-vehicle platform architecture for real-time ITS services & mechanisms** (seamless connectivity, interoperability and secure flow of information across stakeholders)
- **Improved positioning technology** (EU GNSS) with standard interfaces and flexible charging concepts
- **Highly accurate, dynamic maps for transport applications** (GNSS and cloud computing)
- **Innovative solutions for cooperative network management**, multimodal transport services, safety applications and hazard warnings
- **Solutions for heavy goods vehicles**

19 M€, 100% funding
5-10 M€ projects



1 M€, 100% funding

Coordination and Support Actions

Support the take-up & deployment of cross-systems/cross-border services & global reach-out (by ITS standardisation in the EU & beyond and by raising awareness for C-ITS)

2-stage proposal submission
1st stage DDL: 18 March 2014
2nd stage DDL: 28 August 2014

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SC5 Climate action, environment, resource efficiency and raw materials / 2014-2015 (indicative basis)

Draft – Pending
Commission Decision

- **Waste management** → ICT solutions are part of the scope of four topics:
 - WASTE-1-2014: Moving towards a circular economy through industrial symbiosis – 45 M€ (ICT solutions for waste traceability and waste material flow management)
 - WASTE-2-2014: A systems approach for the reduction, recycling and reuse of food waste – 9 M€
 - WASTE-3-2014: Recycling of raw materials from products and buildings – 15 M€
 - WASTE-4-2014/2015: Towards near-zero waste at European and global level – 9.5 M€
- **Water management** → ICT contribution is expected in the following topic:
 - WATER-1-2014/2015: Bridging the gap: from innovative water solutions to market replication → 40 M€ (2014) + 45 M€ (2015) (ICT solutions for water resources management)

WASTE 1, 2 & WATER-1: 2-stage proposal submission

1st stage DDL: 08 April 2014

2nd stage DDL: 16 September 2014

WASTE 3: 1 stage, DDL 08 April 14

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SC6 Europe in a changing world – inclusive, innovative and reflective societies / 2014-2015

Draft – Pending
Commission Decision

• Reflective societies, cultural heritage and European identities

→ Use of ICT for the access to and the exploitation of cultural assets in:

- REFLECTIVE 6 – 2015: Innovation ecosystems of digital cultural assets – 10 M€
- REFLECTIVE 7 – 2014: Advanced 3D modelling for accessing and understanding European cultural assets – 14 M€

Call DDL: 30 Sep. 14

EC Contact Point for REFLECTIVE: Unit G2
CNECT-G2@ec.europa.eu

• New forms of innovation

→ three topics address the role of ICT in modernising the public sector and one CSA action

- INSO 1 – 2014/2015: ICT-enabled open government – 21.5 M€ (2014: 12.3 M€ & 2015: 9.2 M€)
- INSO 9 – 2014: Innovative mobile e-government applications by SMEs (SME Instrument) – 4 M€
- INSO 6 - 2014: Platform for ICT for Learning and Inclusion (CSA Action) – 1 M€

Call DDL: 29 April 14

Call DDL: 29 April 14

SC6 Europe in a changing world – inclusive, innovative and reflective societies / 2014-2015

REFLECTIVE 7 – 2014: Advanced 3D modelling for accessing and understanding European cultural assets

Draft – Pending
Commission Decision

REFLECTIVE 7: 14 M€

a. Research and Innovation actions

Technologies for the digital representation of the shape, appearance and conservation condition of an object → need for the generation of high quality 3D models + improved 3D scanning, modelling and reconstruction technologies

•Research on cost-effective technologies for advanced 3D modelling to enhance the understanding of cultural heritage

developing new methods and tools for automated 3D modelling and analysis of physical cultural resources and assets (e.g. cultural heritage sites, monuments, sculptures, archaeological sites...)

12 M€, 2-4 M€ projects
100% funding

2 M€, 100% funding

Coordination and Support Actions

Devise standard formats for the semantic-aware 3D modelling of Europe's cultural heritage for researchers and practitioners

**Single stage proposal submission
DDL: 30 September 2014**

DG CNECT Contact Point: Unit G2
CNECT-G2@ec.europa.eu

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SC6 Europe in a changing world – inclusive, innovative and reflective societies / 2014-2015

INSO 1 – 2014/2015: ICT-enabled open government

Draft – Pending
Commission Decision

INSO 1: 21.5 M€ (12.3 M€ in 2014 and 9.2 M€ in 2015)

a. Innovation actions

Open Government = Personalised public services, m-government services, open participation, open processes and open engagement, transparency

i. Pilots on personalised and mobile public services

(use large volumes of open data for mobile public services; enabling actors to create or co-produce new public services; develop citizen-centric service applications + adapt to user behavioural changes in accessing and using such services)

ii. Pilots on transparency (pilot tools to increase the transparency impact of ICT-based technology platforms)

20.9 M€, 1-3 M€ projects
70% funding

2015, 0.6 M€ projects
100% funding

Coordination and Support Actions

Networking of stakeholders and teams and supporting constituency building: identifying applications for implementation in the public sector + awareness raising of end-users

Single stage proposal submission
DDL: 29 April 2014

DG CNECT Contact Point: Unit H3
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SC7 Secure societies – protecting freedom and security of Europe and its citizens / 2014-2015 (indicative basis)

Draft – Pending Committee Opinion and Commission Decision

- **Digital security: cybersecurity, privacy and trust**

- **DS1 – 2014: Privacy – 19.04 M€**
- **DS 2 – 2014: Access Control – 18 M€**
- **DS 3 – 2015: The role of ICT in Critical Infrastructure Protection – 17.5 M€**
- **DS 4 – 2015: Secure Information Sharing – 15.31 M€**
- **DS 5 – 2015: Trust eServices – 17.5 M€**
- **DS 6 – 2014: Risk management and assurance models – 10 M€**

Call DDL: 13 May 14

Call DDL: 13 May 14

SC7 Europe in a changing world – inclusive, innovative and reflective societies / 2014-2015

DS1 – 2014: Privacy

Draft – Pending Committee Opinion and Commission Decision

DS1: 19.04 M€

a. Innovation actions

Ensuring freedom and privacy in the digital society:

Demonstrating **solutions to protect individuals' privacy by default** while empowering the users to set the desired level of privacy, giving them control over how their data will be used by service providers and making it easier for them to verify both whether their online rights are respected and if they get a reasonable bargain

➔ Systems will either have to detect the privacy settings automatically, or the data will have its privacy settings permanently set by the user

2-5 M€ projects
70% funding

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Single stage proposal submission
DDL: 13 May 2014

DG CNECT Contact Point: Unit H4
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SC7 Europe in a changing world – inclusive, innovative and reflective societies / 2014-2015

DS 2 – 2014: Access Control

Draft – Pending Committee Opinion and Commission Decision

DS2: 18 M€

a. Innovation actions

Developing and testing usable, economic and ***privacy preserving access control platforms*** based on the use of ***biometrics, smart cards, or other devices***.

- Test the solutions in a broad band network
- Include the management of the access rights in particular for the service providers, ensure the security and privacy of the databases, facilitate a timely breach notification and remediation to the user, and reduce the insider threat.
- Guarantee interoperability and portability between systems and services

3-8 M€ projects
70% funding

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Single stage proposal submission
DDL: 13 May 2014

DG CNECT Contact Point: Unit H4
CNECT-H4@ec.europa.eu

SC7 Europe in a changing world – inclusive, innovative and reflective societies / 2014-2015

DS6 – 2014: Risk management and assurance models

Draft – Pending Committee Opinion and Commission Decision

DS6: 10 M€

a. Innovation actions

*Pilots demonstrating the **viability and scalability** of **risk management frameworks** and assessing and mitigating the (cyber-security) risks in real time*

→ Develop tools for evaluating the risks and their impact on business, and for preventive assessment of risk and trustworthiness of customers and providers, and for detecting social engineering attacks

2-5 M€ projects
70% funding

Single stage proposal submission
DDL: 13 May 2014

DG CNECT Contact Point: Unit H4
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Guide to the presence of ICT in H2020

- Comprehensive coverage of all three H2020 pillars
- Detailed list of calls and topics
- Detailed budget allocation and call deadlines not provided yet

Find out more:

- http://ec.europa.eu/research/horizon2020/index_en.cfm
- **A guide to ICT-related activities in WP2014-15:**
http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=3511
- **The ICT LEIT WP 2014-15 can be found at:**
<https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/H2020%20LEIT-ICT%20WP%202014-15%20-%2031%2010%202013.pdf>
- **The Participant Portal to be revamped soon:**
<https://ec.europa.eu/research/participants/portal>

European Commission

A guide to ICT-related activities in WP2014-15

ICT in H2020 – an Overview

As a generic technology, ICT is present in many of the H2020 areas. This guide is designed to help potential proposers find ICT-related topics across the different parts of H2020.

In work programme 2014-15, ICT-related topics are covered as follows:

- Advanced research to uncover radically new technological possibilities and ICT contributions to research and innovation are addressed in the 'Excellent science' part of the work programme, respectively under 'Future and Emerging Technologies' and 'European research infrastructures' ('infrastructures').
- Research and innovation activities on generic technologies either driven by industrial roadmaps or through a bottom-up approach are addressed in the 'Leadership in enabling and industrial technologies' (LEIT) part of the work programme, under 'Information and communication technologies'.
- Multi-disciplinary application-driven research and innovation leveraging ICT to tackle societal challenges are addressed in the different 'Societal challenges'.

The figures above and below provide synthetic overviews of the presence of ICT in Horizon 2020:

Horizon 2020



HORIZON 2020

Thanks for your attention!

For more information:
www.ec.europa/research/horizon2020