

ICT - Information and Communication Technologies
A brief overview of Horizon 2020

UK ICT NCP 19 October 2015

Collaborative Research enables organisations to develop the knowledge underpinning future products and services. It brings access to skills from a wider compass than may be available to the individual organisation. At the same time it enables a wider outlet for their own skills and knowledge. It delivers enhanced business networks, enables a broader world view and access to a greater marketplace.

Horizon 2020 Structure

The European Commission seeks to encourage collaborative research and innovation for the benefit of the population and the competitiveness of European Industry. It does this by launching objective driven calls for proposals addressing particular technological challenges. The Commission's Horizon 2020 programme plans to commit 77 Billion Euros supporting the resulting projects over the seven years 2014-2020.



The Three Pillars of H2020

The scheme has three priorities: *generating excellent science*, *creating industrial leadership* and *tackling societal challenges* by the application of technology.

The various research and innovation areas or themes to be addressed within these pillars are defined in **The H2020 Workprogramme** text which is published by The Commission.

Individual themes amongst the Three Pillars

Societal Challenges

1. Health, demographic change and wellbeing
2. Food security, sustainable agriculture and the bio-based economy
3. Secure, clean and efficient energy
4. Smart, green and integrated transport
5. Climate action, resource efficiency and raw materials
6. Inclusive, innovative and reflective societies
7. Secure Societies

Industrial Leadership

Leadership in enabling and industrial technologies

- ICT
- Nanotech., Materials, Manuf. and Processing
- Biotechnology
- Space

Access to risk finance
Innovation in SMEs

Excellence in the Science Base

Frontier research (ERC)
Future and Emerging Technologies (FET)
Skills and career development (Marie Curie)
Research infrastructures

Information and Communications Technologies

Basic ICT areas are found in the **Industrial Leadership Pillar** in an area addressing *Leadership in enabling and industrial technologies* (LEIT). The ICT area of the 2016-17 workprogramme has the following topic sections.

Topic Title	Topic sum	wp page
A new generation of components and systems	84	7
Advanced Computing and Cloud Computing	71	16
Future Internet	253.2	21
Content	276	39
Robotics and Autonomous Systems	157	57
ICT Key Enabling Technologies	176	71
Innovation and Entrepreneurship support	20	83
Responsibility and Creativity	15	89
International Cooperation Activities	15.8	94
SME Instrument - ODI		99
Fast Track to Innovation - pilot		105
EU-Japan Joint Call	7	107
EU-Brazil Joint Call	7	115
EU-South Korea Joint Call	6	121
Other actions	53.35	128
Budget		131

ICT is however **pervasive** and therefore research and innovation activities in the other pillars may well include ICT related objectives. This interdisciplinarity is addressed in the new section 17 of the workprogramme, and in an associated guide "[A guide to ICT-related activities in WP2016-17](#)"

Information: The Participant Portal

The Commission operates a number of websites through the **Participant Portal** at <https://ec.europa.eu/research/participants/portal/desktop/en/home.html>

The portal site is source for much documentation including the current H2020 Workprogramme which details the research and Innovation activities to be supported. Sections for the **individual themes** are easily accessible from [here](#)

Projects:

Key Features:

- **Innovative Projects**
- **Grants of up to 125% of eligible direct costs**
- **In most cases involving at least 3 independent partners from different European Countries.**
- **In topics identified by The Commission's Workprogramme**
- **In response to specific Calls for Proposals**
- **By means of a Grant Agreement with The European Commission**

The Commission defines a number of different project types (referred to as instruments) including:

Research and Innovation Actions (RIA)	include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment
Innovation Actions (IA)	Include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication...
Coordination and Support Actions (CSA)	dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies.....
SME (see below)	Phase 1 verifying the viability of an innovation idea/concept Phase 2 .demonstrate high potential, competitiveness & growth underpinned by a strategic business plan
For definitions of these and other instruments see:	Workprogramme General Annexes see section D

These project types enable actions which can cover a range of activities along the route from idea to successful deployment. This range can be described with reference to **Technology Readiness Levels** which the Commission defines for H2020 in annexe G of the workprogramme, running from:

- 1: where the basic principles are observed to
- 9: with the system proven in the real environment



Diagrammatic view of projects and TRLs

Innovation in SMEs:

Horizon 2020 has introduced a specific opportunity addressing the needs of innovative SMEs. It provides funding for the first two phases of the three phase approach to product/service launch. The principal beneficiaries have to be SMEs. Further detail together with links to the SME National Contact point are given here. Short proposals for Phase 1 may be submitted at any time, it is important however to note that this instrument attracts huge oversubscription.

Proposals



Proposals (based upon published templates) are submitted in response to a Commission call for proposals. These must (SME and some CSA proposals exempted) include at least **three independent** participants from **different** member states or associated countries.

Proposals are submitted electronically to a deadline, this specifies a date and specific Brussels time. Submitted proposals are evaluated against published criteria by Independent evaluators in the following five months. Those achieving highest scores subsequently enter a three month period leading to a grant agreement with the Commission.

Successful proposals result from understanding, excellence and a high degree of commitment in their writing, as calls are commonly heavily oversubscribed.

After Evaluation

Successful proposers in their **consortia** whose rules of action are defined by their **consortium agreement**. receive an initial payment from the Commission within weeks of the start of the project.

[Commission help document on Consortium agreements.

http://ec.europa.eu/research/participants/data/ref/h2020/other/gm/h2020-guide-cons-a_en.pdf]

Funding:

Broadly: eligible project costs incurred by the partners where direct costs, with a 25% uplift towards indirect costs are met. In Research & Innovation actions this sum is paid in full. In other action types the support rate may be less (e.g. in Innovation actions 'for profit' organisations receive only 70% of this figure). [Further details in General Annexe D]

Calls for proposals

Call	Descriptor	Open	Close	Apx M€ Budget
ICT	International	20-10-2015	19-1-2016	2.8
ICT	Main 2016	20-10-2015	12-4-2016	460.7
ICT	"Comms"	10-5-2016	8-11-2016	229.5
ICT	Main 2017	8-12-2016	25-4-2017	375
Joint EUJ	Japan	20-10-2015	19-1-2016	7
Joint EUB	Brazil	8-11-2016	14-3-2017	7
Joint EUSK	South Korea	20-10-2015	19-1-2016	6

ICT WORKPROGRAMME 2016-17

year	Head	Title	No	Topic	close	M €	wp page	
		Introduction					5	
		Information and Communication Technologies Call (all parts 2016-17)						7
		A new generation of components and systems					7	
16	01		ICT-01-2016:	Smart Cyber-Physical Systems	12/04/16	20	8	
16	02		ICT-02-2016:	Thin, Organic and Large Area Electronics	12/04/16	20	9	
16	03		ICT-03-2016:	SSI - Smart System Integration	12/04/16	18.5	11	
17	04		ICT-04-2017:	Smart Anything Everywhere Initiative	08/11/16	25.5	13	
		Advanced Computing and Cloud Computing					16	
17	05		ICT-05-2017:	Customised and low energy computing	25/04/17	26	17	
16	06		ICT-06-2016:	Cloud Computing	12/04/16	45	18	
		Future Internet					21	
17	07		ICT-07-2017:	5G PPP Research and Validation of critical technologies and systems	08/11/16	103	21	
17	08		ICT-08-2017:	5G PPP Convergent Technologies	08/11/16	45	27	
17	09		ICT-09-2017:	Networking research beyond 5G	08/11/16	18	29	
16	10		ICT-10-2016:	Software Technologies	12/04/16	31	31	
17	11		ICT-11-2017:	Collective Awareness Platforms for Sustainability and Social Innovation	25/04/17	10	32	
16	12		ICT-12-2016:	Net Innovation Initiative	12/04/16	20.2	34	
16	13		ICT-13-2016:	Future Internet Experimentation - Building a European experimental Infrastructure	12/04/16	26	37	
		Content					39	
16	14		ICT-14-16,17:	Big Data PPP: cross-sectorial and cross-lingual data integration and experimentation	12/04/16	27	40	
17	14		ICT-14-16,17:	Big Data PPP: cross-sectorial and cross-lingual data integration and experimentation	25/04/17	27	40	

year	Head	Title	No	Topic	close	M €	wp page	
		Content (cont'd)						39
16	15		ICT-15-16,17:	Big Data PPP: Large Scale Pilot actions in sectors best benefitting from data-driven innovation	12/04/16	25	42	
17	15		ICT-15-16,17:	Big Data PPP: Large Scale Pilot actions in sectors best benefitting from data-driven innovation	25/04/17	25	42	
17	16		ICT-16-2017:	Big data PPP: research addressing main technology challenges of the data economy	25/04/17	31	43	
16	17		ICT-17-16,17:	Big data PPP: Support, industrial skills, benchmarking and evaluation	12/04/16	5	45	
17	17		ICT-17-16,17:	Big data PPP: Support, industrial skills, benchmarking and evaluation	25/04/17	2	45	
16	18		ICT-18-2016:	Big data PPP: privacy-preserving big data technologies	12/04/16	9	47	
17	19		ICT-19-2017:	Media and content convergence	08/11/16	39	48	
17	20		ICT-20-2017:	Tools for smart digital content in the creative industries	25/04/17	17	50	
16	21		ICT-21-2016:	Support technology transfer to the creative industries	12/04/16	14	52	
16	22		ICT-22-2016:	Technologies for Learning and Skills	12/04/16	31	53	
17	23		ICT-23-2017:	Interfaces for accessibility	25/04/17	12	55	
16	24		ICT-24-2016:	Gaming and gamification	12/04/16	12	56	
		Robotics and Autonomous Systems						57
16	25		ICT-25-16,17:	Advanced robot capabilities research and take-up	12/04/16	30	58	
17	25		ICT-25-16,17:	Advanced robot capabilities research and take-up	25/04/17	34	58	
16	26		ICT-26-2016:	System abilities, development and pilot installations	12/04/16	42	60	

year	Head	Title	No	Topic	close	M €	wp page	
		Robotics and Autonomous Systems (cont'd)						57
17	27		ICT-27-2017:	System abilities, SME & benchmarking actions, safety certification	25/04/17	46	64	
17	28		ICT-28-2017:	Robotics Competition, coordination and support	25/04/17	5	68	
		ICT Key Enabling Technologies						71
16	29		ICT-29-2016:	Photonics KET 2016	12/04/16	66	72	
17	30		ICT-30-2017:	Photonics KET 2017	25/04/17	87	76	
17	31		ICT-31-2017:	Micro- and nanoelectronics technologies	25/04/17	23	81	
		Innovation and Entrepreneurship support						83
17	32		ICT-32-2017:	Startup Europe for Growth and Innovation Radar	25/04/17	12	83	
17	33		ICT-33-2017:	Innovation procurement networks	25/04/17	4	86	
16	34		ICT-34-2016:	Pre-Commercial Procurement open	12/04/16	4	88	
		Responsibility and Creativity						89
16	35		ICT-35-2016:	Enabling responsible ICT-related research and innovation	12/04/16	7	89	
16	36		ICT-36-2016:	Boost synergies between artists, creative people and technologists	12/04/16	8	91	
		International Cooperation Activities						94
16	37		ICT-37-2016:	CHINA: Collaboration on Future Internet	19/01/16	1	94	
16	38		ICT-38-2016:	MEXICO: Collaboration on ICT	19/01/16	1	95	
16	39		ICT-39-16,17:	International partnership building in low and middle income countries	19/01/16	0.8	96	
17	39		ICT-39-16,17:	International partnership building in low and middle income countries	25/04/17	13	96	
		Conditions for the Information and Communication Technologies Call call						99

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		SME Instrument - ODI					99
		Fast Track to Innovation - pilot					105
16		EU-Japan Joint Call					107
16			EUI-01-2016:	5 G – Next Generation Communication Networks	19/01/16	3	107
16			EUI-02-2016:	IoT/Cloud/Big Data platforms in social application contexts	19/01/16	2.7	108
16			EUI-03-2016:	Experimental testbeds on Information-Centric Networking	19/01/16	1.3	109
		Conditions for the EU-Japan Joint Call call					112
17		EU-Brazil Joint Call					115
17			EUB-01-2017:	Cloud Computing	14/03/17	2.5	115
17			EUB-02-2017:	IoT Pilots	14/03/17	4.5	116
		Conditions for the EU-Brazil Joint Call call					119
16		EU-South Korea Joint Call					121
16			EUK-01-2016:	5 G – Next Generation Communication Networks	19/01/16	3	121
16			EUK-02-2016:	IoT joint research	19/01/16	1.5	122
16			EUK-03-2016:	Federated Cloud resource brokerage for mobile cloud services	19/01/16	1.5	123
		Conditions for the EU-South Korea Joint Call call					125

ICT in other parts of the Workprogramme.

As mentioned above the Commission has published a guide to ICT-related activities in WP2016-17. This may be accessed [here](#). The annex to the guide shows the huge complexity which the ubiquity of ICT amongst the other H2020 themes engenders.

Questions and answers:

Contact ICT National Contact Point NCP-ICT-FET@innovateuk.gov.uk