

FP7-Information and Communications Technologies
Extract from Work Programme 2013¹

Future and Emerging Technologies (FET)

Future and Emerging Technologies (FET) fosters exploratory research to open up new avenues across the full breadth of future information and communication technologies. It supports new and alternative ideas, concepts or paradigms of risky or nonconventional nature. FET aims to go beyond the conventional boundaries of ICT and ventures into uncharted areas, often inspired by and in close collaboration with other scientific disciplines.

Radical breakthroughs in ICT increasingly rely on deep synergies with other disciplines (for instance, biology, chemistry, nanoscience, neuro- and cognitive science, ethology, social science, economics) and with the arts and humanities. This requires new attitudes and novel collaborations between a broad diversity of actors in research. In this respect, FET is the home for transformative research that can lead not only to a range of exceptional and unprecedented outcomes in science and technology, but can also create new practices, paradigms and reshape disciplines.

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¹ Proposers are reminded that they should consult the full text of the ICT Work Programme 2013 available at http://ec.europa.eu/research/participants/portalplus/static/docs/calls/fp7/common/32767-annex_6_to_the_decision_ict_for_cap_en.pdf

Introduction

FET Open scheme: challenging current thinking and attracting future potential

FET-Open is a **light, topic-agnostic and deadline free** scheme specifically designed to be open and continuously responsive to novel and fragile ideas that challenge current thinking, whenever they arise and wherever they come from. It aims at foundational breakthroughs that can open radically new directions for information and communication technologies in the future. FET-Open also aims to increase the role of young researchers and high-tech research intensive SMEs in its cooperative research to further enhance their disruptive innovation potential and to unlock longer-term scientific and industrial leadership.

Because of its foundational nature, FET research is especially well placed for **global collaboration**. This Work Programme provides opportunities to extend on-going FET projects² through new collaboration components (top up) involving the best researchers worldwide, so as to create global interest and raise the level of ambition around research avenues incepted within FET.

FET Proactive scheme: tackling targeted transformative research

FET Proactive supports **foundational, high-risk research**, supporting the design and development of **emerging research avenues** with the aim of **creating novel areas and themes** and bringing together emerging communities. In each of these high-risk and high-potential, innovative themes a number of projects are supported, in combination with community building actions that foster activities such as joint events, development of new curricula and research roadmaps. Such clusters of projects spearhead transformative research and enhance Europe's innovation potential around a number of fundamental long-term challenges in ICT, building towards new topics for industrial research agendas.

FET Flagships

FET Flagships are **visionary, science-driven, goal-oriented, large-scale, multidisciplinary research initiatives** nucleated from research on ICT future and emerging technologies. They are envisioned to be long term programmes on a scale much beyond existing initiatives. Activities in this Work Programme build on earlier actions and will enable the selection of two such initiatives in 2013.

² Ongoing projects selected under any of the FET objectives of the FP7 ICT Work programmes.

FET OPEN scheme

Radically new ideas can come anytime, from anybody and from anywhere. FET-Open is specifically designed to be open and responsive to such fresh thinking. It aims to give promising but still fragile ideas the opportunity to mature into a credible and well-founded new direction of research.

What is common to all objectives under FET-Open is that they seek *proposals on radically new concepts and visions of the nature and use of information and information technologies, grounded in scientifically plausible and often interdisciplinary ideas on how to achieve them*. In spite of the high risk of failure, FET-Open projects can be the first step on the way towards future European scientific and industrial leadership in areas that today simply do not exist yet.

In this Work Programme, the FET-Open scheme features the following objectives:

- Objective ICT-2013.9.1: Challenging Current Thinking
- Objective ICT-2013.9.2: High-Tech Research Intensive SMEs in FET research
- Objective ICT-2013.9.3: FET Young Explorers
- Objective ICT-2013.9.4: International cooperation on FET research
- Objective ICT-2013.9.5: FET-Open Xtrack

All these objectives are continuously open for submission. The FET-Open Objective ICT-2013.9.5 trials a new and lighter submission process, aims at a faster evaluation and a simpler project implementation. This pilot bridges to the implementation of the FET Open Scheme in Horizon2020, from 2014 onwards.

All FET-Open objectives call for STREPs³, but with eligibility criteria that are specific to each objective. CSAs are accepted only under objective 2013.9.1. They are submitted directly as full proposals and are evaluated in one step.

³ With the exception of Objective ICT-2013.9.4 on International cooperation on FET research.

Objective ICT-2013.9.1 Challenging Current Thinking

Target outcome

This objective supports the exploration of new and alternative ideas that, because of their risky or non-conventional nature, would not be supported elsewhere in the ICT Work Programme. It seeks:

- foundational breakthroughs as crucial steps towards radically new forms and uses of information and information technologies within a clear long-term vision that is far beyond the state of the art;
- ambitious proof-of-concept and its supporting scientific foundation, where novelty comes from new, high-risk ideas rather than from the refinement of current ICT approaches;
- new inter-disciplinary collaborations, possibly with prominent and internationally recognised non-EU research teams where these can provide a significant added value.

This objective also supports Coordination and Support Actions for creating the best conditions within which FET research can flourish and achieve the transformative impacts that it aspires to. These activities may be, for example:

- actions, including networking and dissemination activities, aiming at the emergence of new research communities or collaborations involving a broad diversity of disciplines and actors into FET research;
- actions towards the increased active involvement of high-tech research intensive SMEs in exploratory research directions relevant to future ICT markets;
- actions that stimulate excellence and future leadership of pioneering teams of young researchers along new, exploratory research directions relevant to future ICT;
- actions aiming to strengthen the international dimension of FET.

Expected impact

For STREP projects:

- opening new avenues of research towards future ICT that may be radically different from present day ICT;
- strengthening the future potential for high-risk / high-impact research and innovation;
- new research alliances in transformative research, exploiting synergies in the global science and technology scene for increased impact and excellence.

For CSA actions:

- catalyse transformative effects on the communities and practices for high-risk and high-impact research and on the mechanisms to support the global nature of such research;
- new, engaged and risk-taking research communities prepared to develop new and non-conventional approaches for addressing future challenges in science and society.

Funding schemes

STREP, CSA

Indicative budget distribution

EUR 34 million⁴, out of which a maximum of EUR 3 million for CSA.

Call

FP7-ICT-2013-C⁵

Proposals are continuously receivable until 11 September 2012 (Short STREP) and 12 March 2013 (CSA). This objective applies a two-stage submission scheme and FET-Open specific eligibility and evaluation criteria (see pages 18-23 of this document or Appendix 5 of the Work Programme 2013).

⁴ Indicative budget which is expected to be committed for successful proposals from the cut-off dates 25/09/2012 up to and including 12/03/2013 (batch 14 and batch 15).

⁵ Note that a FET-Open Xtrack Call (STREPS only) opens right after the FET-Open continuous call closes. It uses a new and lighter submission process and aims at faster evaluation. See FET-Open Xtrack Objective ICT-2013.9.5 (see page 8 of this document).

Objective ICT-2013.9.2 High-Tech Research Intensive SMEs in FET research

Target outcomes

This objective fosters the driving participation of high-tech, research intensive SMEs in collaborative research projects targeting visionary, multi-disciplinary research. This will:

- link novel ideas, results or paradigms from science on the one hand, and marketable ideas on the other, that can lead to new, visionary and non-mainstream business opportunities and create future markets;
- generate a new scientific and technological asset base on which the SMEs can establish themselves firmly as future innovation players in areas with a high potential for future commercial or societal impact.

This objective does not seek short term commercial outcomes. It will therefore not support, for example, the incremental improvement of state-of-the-art technology, mainstream research aimed at short term product or service development, the incremental improvement of existing lines of business activity, research aimed to catch-up with the competition, developing foresights or market studies, or the mere development of new business models or business plans.

The consortium will contain at least one research intensive high-tech SME⁶ with an established and proven in-house research capacity and that will play a driving role in setting and executing the research agenda of the project. This objective is expected to be addressed by small STREPs proposals, each requesting a grant in the order of EUR 1 million, where the largest shares of the resources are allocated to the participating SME(s).

Expected impact

- opening of new avenues of research towards future ICT that may be radically different from present day ICT;
- secured and broadened in-house research capacity and research eco-system of the SMEs leading to sustainable future innovation potential;
- high-tech, research-intensive SMEs recognised as first-class players in FET research;
- increased visibility, exposure and impact of FET research.

Funding scheme

STREP

Indicative budget distribution

EUR 6 million⁷

Call

FP7-ICT-2013-C

Proposals are continuously receivable until 11 September 2012. This objective applies a two-stage submission scheme and FET-Open specific eligibility and evaluation criteria (see pages 18-23 of this document or Appendix 5 of the Work Programme 2013).

⁶ An SME is an enterprise which has fewer than 250 employees, has an annual turnover not exceeding EUR 50 million, and/or has an annual balance-sheet total not exceeding 43 million EUR. Possible relationships with other enterprises must be taken into account when calculating these data of the enterprise. Research centres, research institutes, contract research organisations or consultancy firms are not eligible SMEs for the purpose of the Co-operative and Collective schemes.

⁷ Indicative budget which is expected to be committed for successful proposals from the cut-off dates 25/09/2012 up to and including 12/03/2013 (batch 14 and batch 15).

Objective ICT-2013.9.3 FET Young Explorers

Target outcomes

This objective aims at capturing the creative potential of young researchers by fostering their leadership and participation in collaborative research projects targeting first-ever and exploratory, multi-disciplinary research.

This exploration should be grounded in scientifically plausible ideas that can provide a novel basis for the development of radically new concepts and visions that extend the conventional boundaries of ICT. New multi-disciplinary approaches and unconventional methodologies are encouraged.

This objective is expected to be addressed by small STREP proposals, each requesting a grant in the order of EUR 1 million. A project must be led by a young researcher, and the leadership by young researchers of all work packages is also required. No more than six years should have elapsed between the award of a Ph.D. (or equivalent) for each such young researcher and the date of submission of the short proposal.⁸

Expected impact

- opening of new avenues of research towards future ICT that may be radically different from present day ICT;
- empowered next generation of European science and technology leaders through their increased leadership of collaborative ICT research;
- contribution to early independence of young high potential researchers.

Funding scheme

STREP

Indicative budget

EUR 8 million⁹

Call

FP7-ICT-2013-C

Proposals are continuously receivable until 11 September 2012. This objective applies a two-stage submission scheme and FET-Open specific eligibility and evaluation criteria (see pages 18-23 of this document or Appendix 5 of the Work Programme 2013).

⁸ Proof must be submitted at step 2 of the evaluation, together with the full proposal. Extensions of this period may be allowed only in case of eligible career breaks which must be properly documented: maternity (18 months per child born after the PhD award) & paternity leave (accumulation of actual time off for children born after the PhD award) and leave taken for long-term illness, national service.

⁹ Indicative budget which is expected to be committed for successful proposals from the cut-off dates 25/09/2012 up to and including 12/03/2013 (batch 14 and batch 15).

Objective ICT-2013.9.4 International cooperation on FET research

Target outcomes

This objective aims to increase and accelerate the impact of FET research projects by cooperating with non-EU partners of excellent global standing. It targets the extension of ongoing FET¹⁰ projects with complementary research activities in which collaboration with non-EU research partners brings significant added value.

The research content is expected to focus on new activities that expand the research challenges and reinforce the impact of the ongoing project. The outcome of that research is expected to be made freely and openly available for the benefit of the research community.

Funding can be requested by the partners from the ongoing FET project and by the new non-EU research participant(s) to cover the coordination and joint research activities necessary to complement the ongoing project. At least 50% of the requested funding should be allocated to the new non-EU research participant(s)¹¹.

Expected impact

- enhanced outcomes, global reach and impact of ongoing FET research projects through research collaboration with non-EU participants with complementary expertise;
- reinforced research cooperation between world-class EU and non-EU researcher teams facilitating the emergence of global alliances.

Funding scheme

Additional funding to existing grant for on-going FET¹⁰ IP and STREP projects ending at least 18 months after the submission date of the proposal.

Indicative budget distribution

EUR 2 million¹²

Call

FP7-ICT-2013-C

Proposals are continuously receivable until 12 March 2013. This objective applies a one-stage submission scheme and specific eligibility and evaluation criteria (see pages 18-23 of this document or Appendix 5 of the Work Programme 2013).

¹⁰ Ongoing projects selected under any of the FET objectives of the FP7 ICT Work Programmes.

¹¹ This restriction is obligatory for proposals submitted in batch 15.

¹² Indicative budget which is expected to be committed for successful proposals from the cut-off dates 25/09/2012 up to and including 12/03/2013 (batch 14 and batch 15).

Objective ICT-2013.9.5 FET-Open Xtrack

Target outcome

This objective supports the exploration of new and alternative ideas that, because of their risky or non-conventional nature, would not be supported elsewhere in the ICT Work Programme. It seeks:

- foundational breakthroughs as crucial steps towards radically new forms and uses of information and information technologies within a clear long-term vision that is far beyond the state-of-the-art;
- ambitious proof-of-concept and its supporting scientific foundation, where novelty comes from new, high-risk ideas rather than from the refinement of current ICT approaches;
- new inter-disciplinary collaborations, possibly with prominent and internationally recognised non-EU research teams where these can provide a significant added value.

Expected impact

- opening new avenues of research towards future ICT that may be radically different from present day ICT.

Funding schemes

STREP

Indicative budget distribution

EUR 15 million

Call

FP7-ICT-2013-X

This objective trials a new and lighter submission process, aims at a faster evaluation and a simpler project implementation. It applies a one-stage submission scheme and specific eligibility and evaluation criteria (see pages 18-23 of this document or Appendix 5 of the Work Programme 2013).

FET PROACTIVE scheme

FET Proactive provides support to promising domains where critical mass needs to be built up in to achieve impacts on science, technology, economy and society. This Work Programme sets out two Proactive Initiatives in key areas in which FET aims to spearhead transformative research, using living organisms and physical phenomena at the atomic scale as inspirations for new ICT.

Long term FET-like research on “Symbiosis between humans and computers” and “Creative ICT” will be addressed under Objective ICT-2013.2.1 (see entry c) and Objective ICT-2013.8.1 (see entry c) (see pages 15-16 of this document).

FET Proactive Initiatives apply specific eligibility and evaluation criteria (see pages 18-23 of this document or Appendix 5 of the Work Programme 2013).

Objective ICT-2013.9.6 FET Proactive: Evolving Living Technologies (EVLIT)

Computational and self-adapting properties of living organisms are superior to recent ICT technology in many ways. Being composed of physically and chemically embodied entities, where function is associated to physical structure, they show properties such as scalability, self-reproduction, self-construction, evolvability, self-organisation, adaptability and robustness. Learning to build future ICT along these lines offers a promising way to address important issues such as design complexity of ICT systems, difficulty and specificity of manufacturing, energy management, etc.

The objective is to create living technologies using the principles of biological evolution that co-organise information and matter in systems of physical entities. This includes the full range of possible methodologies, such as using living technologies built up with nano-mechatronics, biological information encoding principles, bio-inspired artificial systems or bio-hybrid systems.

Target outcomes

- Empirical, theoretical and synthetic approaches that define the key bio-inspired principles that can drive future living technologies and the environment to use them in a controlled way;
- Significant steps towards embodying these key principles and showing their usefulness in a technological context.

Expected impact

- Foundations, approaches and proofs of concept for a radically new type of living technology;
- Possible contributions beyond the area of ICT (manufacturing, chemistry, biology, agriculture).

Funding schemes

STREP

Indicative budget distribution

EUR 16 million

Call

FP7-ICT-2013-10

Objective ICT-2013.9.7 FET Proactive: Atomic and Molecular Scale Devices and Systems

The research targets the physical access and greater understanding of the behaviour of a single atom or molecule, or small ensembles thereof, as elementary functional resources for future ICT systems. Aspects such as new forms of atomic scale constructs and fabrication processes, control, sensing and picometer interconnection precision of components are addressed in this objective.

Target outcome

- a) Investigation, Design, and Demonstration of ICT functionality, at the atomic and molecular scale, through various physical implementations. Working components and systems relying on robust atomic scale fabrication technologies should be targeted.
- b) Investigation, Design, and Development of metrology and control systems at the atomic scale for molecular references or precision sensors or procedures to preserve operation integrity.
- c) Design and Development of simulation and hierarchical modelling tools (from ab initio to large atomic scale systems, and single device to circuit and system level), taking account time dependencies to explore the response time of the proposed architecture.
- d) Investigation, Design and Demonstration of the embedding and interfacing of atomic and molecular scale components with a mesoscopic technological and material environment, considering charge and non-charge transport, physical nano-connectivity and atomic-scale mechanical response.

Integrated Projects should cover at least topics a), c), and d). STREPs should cover at least two of the above topics.

Expected impact

- Opening of disruptive avenues and exploration of new possibilities for components and technologies at the atomic and molecular scale;
- Experimental demonstration of principle, tangible realization, and feasibility of such components and systems;
- New perspectives on potential applications with concrete advantages (e.g. energy consumption, data and operation integrity, clock frequency, ...).

Funding schemes

IP, STREP

Indicative budget distribution

EUR 16 million

Call

FP7-ICT-2013-10

Objective ICT-2013.9.8 Coordinating communities, identifying new research topics for FET Proactive initiatives and fostering interdisciplinary dialogue

Target outcome

- a) Short duration actions (typically 6-12 Months) to organise consultations of multidisciplinary communities to formulate novel FET research topics, focussing on new emerging research areas for H2020 related to ICT and beyond. The main objective should be to identify new research avenues from a global perspective, the associated fundamental challenges, and to analyse the expected impact on science, technology and society.
- b) Actions supporting the coordination and cooperation of the targeted research communities, fostering the consolidation of research agendas, assessing the impact and proposing measures to increase the visibility of specific topics to the scientific community, to targeted industries and to the public at large.
- c) Actions supporting and promoting cooperation with non-EU research teams in foundational research on FET topics, with a balanced participation from partners in the EU and from target countries.
- d) Actions to organise conferences and workshops which should foster dialogue between science, policy and society on the role and challenges of interdisciplinary long-term research, increasing Europe's creativity and innovation base and bridging diverse European research communities and disciplines.

Expected impact

- Novel, widely supported research topics to be considered as inputs for future FET work programmes;
- Reinforced coordination of research projects in FET Proactive Initiatives in current or previous calls;
- Strengthened research excellence and co-operation with partners from outside Europe;
- Early identification and increased awareness of new trends emerging on a global scale in support of future proactive initiatives;
- Increased visibility of the FET community and links between European research communities.

Funding Scheme

CSA

Indicative budget distribution

EUR 3 million

Call

FP7-ICT-2013-10

FET FLAGSHIPS

FET Flagships are science-driven, large-scale, multidisciplinary research initiatives oriented towards a unifying goal, with a transformational impact on science and technology and substantial benefits for European competitiveness and society. The goals of such initiatives should be visionary and highly ambitious in terms of scientific challenges, resources required and coordinated efforts. They require cooperation among a range of disciplines, communities and programmes, extending over a long period (in the order of 10 years duration). FET Flagships are based on partnerships that enable effective coordination of efforts.

An earlier call in 2010 (FP7-ICT-FET-F) has identified six potential flagship topics which have been elaborated in a preparatory phase by a number of EU-funded coordination actions, referred to as «FET-Flagships Preparatory Actions». As a next step, the ramp-up phase, this Work programme calls for proposals to initiate and build up two FET Flagships.

Objective ICT-2013.9.9 FET Flagships

Proposals should address a grand scientific challenge and need to provide a common research roadmap with well-defined goals and ambitious but realistic milestones. Proposals should be justified in terms of expected scientific advance, potential technological breakthroughs and socio-economic impact. Proposals should describe how the relevant disciplines, stakeholders and resources will be brought together and be efficiently coordinated under strong scientific leadership.

Target outcome

Two FET Flagships, each one addressing a topic in line with the FET Flagship Preparatory Actions. These actions organised extensive consultations with the relevant scientific communities and identified relevant national/regional initiatives and programmes that could be part of such a common European effort:

The topics of the Preparatory Actions are:

- understanding and managing complex, global, socially interactive systems, with a focus on sustainability and resilience - stemming from the work of FuturICT;
- exploiting properties of graphene and related two-dimensional materials for the emergence of a graphene-based translational technology and innovative applications - stemming from the work of GRAPHENE;
- smart, energy-efficient devices for personal assistance based on zero-power sensing, computation and communication technologies - stemming from the work of Guardian Angels;
- building a European facility to simulate the working of the human brain by developing and using supercomputers and neuromorphic hardware, and involving the collection and integration of large amounts of medical and neurophysiological information - stemming from the work of HBP;
- building individual computational models of the biological processes that occur in every human for personalised healthcare - stemming from the work of ITFOM;
- unveiling the secrets underlying the embodied perception, cognition, and emotion of natural sentient systems and using this knowledge to build robot companions based on simplicity, morphological computation and sentience - stemming from the work of RoboCom.

Recognising that FET Flagships are large endeavours that require a common European effort at multiple levels, this Work programme calls for:

- a) Proposals for CP-CSA with a duration of 30 months. They should describe core research tasks, based on the common research roadmap, as well as establishing a contractual framework for collaboration with other projects and initiatives that address research priorities within the same roadmap. This framework needs to ensure a proper coordination and integration of all the research activities that contribute to the FET Flagship both within the CP-CSA project and within other research activities. The governance to be put into place needs to ensure broad participation and effective opportunities for new partners to join.

Proposals should reserve a substantial part of the budget (e.g. 20%) for future partners, foreseeing an enlargement of the consortium in order to create flexibility and openness, and to ensure dynamic responses to unforeseen challenges.

CP-CSA projects will undergo a review after 18 months to assess their contribution to FET-Flagship strategic objectives and their implementation progress.

- b) An ERA-NET between national and/or regional funding agencies aiming at supporting the FET Flagships¹³. Proposals for an ERA-NET should describe how they will coordinate national and/or regional efforts with the common research roadmap.

Expected impact

a) Expected impact of CP-CSA:

- transformational impact on science and technology and substantial benefits for the European economy and society;
- European leadership in key scientific areas;
- strengthening of the interfaces between ICT and other disciplines;
- progress towards the realisation of the fully operational phase of the FET Flagship, following the ramp-up phase.

b) Expected impact of ERANET:

- enhanced complementarities and synergies of regional, national, European and international research programmes and initiatives;
- networking between national funding agencies and creation of a discussion forum for matters of interest related to the two FET Flagships;
- identification of areas that could complement the CP-CSA and that may be subject of future joint calls;
- reduction of the fragmentation of the European Research Area (ERA).

Funding schemes

a) CP-CSA

b) CSA

Indicative budget distribution

- CP-CSA: EUR 108 million
- ERANET: EUR 2 million

Calls

a) FP7-ICT-2013-FET-F

b) FP7-ICT-2013-11

¹³ The closing date for the ERA-NET Call is deferred in time as compared to the CP-CSA Call.

Special Initiatives

The initiative on “Symbiosis between humans and computers” aims at a deeper understanding of human behaviour during interaction with ICT, going beyond conventional approaches. It is coordinated as part of the “Robotics” activity, in Objective ICT-2013.2.1 target c)¹⁴. The work on symbiotic human-machine relations is not restricted to robotics.

Objective ICT-2013.2.1 Robotics, Cognitive Systems & Smart Spaces, Symbiotic Interaction

Target outcomes

RTD targets systems that can operate autonomously in the real world through e.g. scene and context understanding, anticipation and reaction / adaptation to changes, manipulation and navigation, as well as symbiotic human-machine relations.

- RTD will help to achieve breakthroughs in the introduction of robotics technology in diverse physical environments and in smart spaces (with energy efficiency improvements). Complementary RTD strands in the target outcomes listed below may be combined as appropriate, including through demonstration as well as methodological validation approaches and measures of progress (e.g. through suitable benchmarks).
- Foundational research will address cognitive systems and symbiotic human machine interactions.

Target c) Symbiotic human-machine interaction

Foundational research on symbiotic relations between humans and machines will aim at the design of new interactive technologies based on new theories and models of human cognition and emotion, non-rational decision-making, social behaviour and spatial and temporal perception and processing. RTD will also investigate the influence of such technologies on human behaviour and methods to promote positive co-evolution and co-adaptation of symbiotic systems.

Expected impact

The overall impact expected is to contribute to an appropriate mix of the following:

- help increase Europe’s market share in industrial and service robots to reach one third of market share by 2020, and improve the competitiveness of Europe in manufacturing sector;
- create a substantial upsurge in the involvement of key industry players, including SMEs and mid caps, in EU-level collaborative research, strengthening their links with academia;
- achieve scientific and technical excellence in terms of e.g. improved systems functionality, quality, performance and sustainability and degree of successful integration of such results into real-world scenarios;
- develop innovative concepts and prototypes of co-evolving technologies based on new theories and models and deeper understanding of human behaviour.
- achieve high levels of scientific publication as well as new PhDs and open source software releases or patents.

Funding Schemes

IP, STREP

Indicative budget distribution

EUR 67 million, of which minimum EUR 52 million for target a) and b), and minimum EUR 10 million for target c). Within these constraints, a minimum of 40% of the objective budget to IPs and 25% of the objective budget to STREPS.

Call

FP7-ICT-2013-10

¹⁴ For more information about targets a) Intelligent robotics systems, and b) Cognitive systems and smart spaces, proposers are reminded that they should consult the full text of the ICT Work Programme 2013 available at http://ec.europa.eu/research/participants/portalplus/static/docs/calls/fp7/common/32767-annex_6_to_the_decision_ict_for_cap_en.pdf

The initiative on “Creative ICT” is coordinated as part of the “Creativity” activity, in Objective ICT-2013.8.1 target c)¹⁵.

Objective ICT-2013.8.1 Technologies and scientific foundations in the field of creativity

Target outcomes

Research under this objective will address creativity and the tools and environments in which it takes place. Research activities will contribute to equipping different industries with more effective creative tools, expand the potential of technology in the human creative processes and advance the scientific understanding of creativity, thus providing the basis for future innovative technologies. This will be complemented by support activities that promote ways of closer interaction and networking within and between different segments of creative industries.

Target c) Progress towards formal understanding of creativity with a view to advancing the measurable capability of computers to produce results assessed by humans as useful, original and surprising. Proposals should contribute to technological and theoretical insights on creativity, incorporating progress in relevant areas such as AI, psychology, sociology, neuroscience and cognitive science. Proposals should demonstrate how the theoretical insights gained in the project will contribute to the understanding of human creativity. Technological advances should be validated as proofs of concept in innovative autonomous creative systems aiming to rise above the level of pastiche (mimicry).

Expected Impact

- Deeper scientific understanding of creativity, fostering the synergy between understanding and enhancing human creativity, and new technologies for autonomous creative systems.

Funding Schemes

STREP (target c)

Indicative budget distribution

EUR 10 million (target c)

Call

FP7-ICT-2013-10

¹⁵ For more information about targets a) Creative experience tools, and b) Intelligent computational environments stimulating and enhancing human creativity, proposers are reminded that they should consult the full text of the ICT Work Programme 2013 available at http://ec.europa.eu/research/participants/portalplus/static/docs/calls/fp7/common/32767-annex_6_to_the_decision_ict_for_cap_en.pdf

Indicative Timetable

Objective	Submission Scheme	Indicative launch of the Call ¹⁶ & Submission deadline ¹⁷
ICT-2013.9.1 FET Open: Challenging Current Thinking	STREP: two-step CSA: one-step	Continuously receivable until 11 September 2012 for short proposals, and until 12 March 2013 for full proposals and CSA.
ICT-2013.9.2 High-Tech Research Intensive SMEs in FET research	STREP: two-step	Continuously receivable until 11 September 2012 for short proposals, and until 12 March 2013 for full proposals.
ICT-2013.9.3 FET Young Explorers	STREP: two-step	Continuously receivable until 11 September 2012 for short proposals, and until 12 March 2013 for full proposals.
ICT-2013.9.4 International cooperation on FET research FET Open and FET Proactive	IP/STREP: one-step	Continuously receivable until 12 March 2013.
ICT-2013.9.5 FET-Open Xtrack	STREP: one-step	Call open: 12 September 2012 Deadline: 29 January 2013
ICT-2013.9.6 FET Proactive: Evolving Living Technologies (EVLIT)	STREP: one-step	CALL 10 Call open: 10 July 2012 Deadline: 15 January 2013
ICT-2013.9.7 FET Proactive: Atomic and Molecular Scale Devices and Systems	IP/STREP: one-step	CALL 10 Call open: 10 July 2012 Deadline: 15 January 2013
ICT-2013.9.8 Coordinating communities, identifying new research topics for FET Proactive initiatives and fostering interdisciplinary dialogue	CSA: one-step	CALL 10 Call open: 10 July 2012 Deadline: 15 January 2013
ICT-2013.9.9 FET Flagships	CP-CSA: one-step	Call open: 10 July 2012 Deadline: 23 October 2012
ICT-2013.9.9 FET Flagships ERANET	CSA: one-step	CALL 11 Call open: 18 September 2012 Deadline: 16 April 2013

Funding schemes

- CSA Coordination and Support Action
- IP Large-scale Integrating Project
- STREP Small or medium scale focused research action
- CP-CSA Combination of collaborative projects and coordination and support actions

FET Open, FET Proactive and FET Flagship schemes apply specific eligibility and evaluation criteria. Proposers are asked to familiarise themselves with the provisions of Appendix 5 of the Work Programme 2013 before submitting proposals to these schemes (see pages 18-23 of this document).

¹⁶ The Director-General responsible for the call may publish it up to one month prior to or after the envisaged date of publication.

¹⁷ The Director-General responsible may delay this deadline by up to two months.

Extract from Cooperation Work Programme 2013 General Annexes

Appendix 5: FET Eligibility and Evaluation criteria

Additional eligibility criteria applicable to FET-Open Objectives ICT-2013.9.1, ICT-2013.9.2, ICT-2013.9.3 and ICT-2013.9.4

In addition to the eligibility criteria set out in Annex 2 to the Work Programme 2013, all FET-Open short proposals are subject to the following eligibility criteria:

- 1) Part B should not exceed 5 A4 pages, excluding a single title page with acronym, title and abstract of the proposal;
- 2) Part B of a short STREP proposal should be fully anonymous, meaning that it may not include the name of any organisation or its staff involved in the consortium or any other information which could identify an applicant. Furthermore, strictly no bibliographic references or any other link to additional information are permitted.

Proposals (short and full) submitted to FET-Open Objective ICT-2013.9.2: High-Tech Research Intensive SMEs in FET research are subject to the following additional eligibility criteria:

- 3) The consortium must contain at least one SME.¹⁸

Proposals (short and full) submitted to FET-Open Objective ICT-2013.9.3: FET Young Explorers are subject to the following additional eligibility criteria:

- 4) A project must be led by a young researcher, and the leadership by young researchers of all work packages is also required. No more than six years should have elapsed between the award of a Ph.D. (or equivalent) for each such young researcher and the date of submission of the short proposal.¹⁹

Proposals submitted to FET-Open Objective ICT-2013.9.4: International cooperation on FET research are subject to the following additional eligibility criteria:

- 5) Proposals must be presented by the coordinator of an on-going FET²⁰ IP or STREP project ending at least 18 months after the submission date of the proposal.

¹⁸ An SME is an enterprise which has fewer than 250 employees, has an annual turnover not exceeding EUR 50 million, and/or has an annual balance-sheet total not exceeding EUR 43 million. Possible relationships with other enterprises must be taken into account when calculating these data of the enterprise. Research centres, research institutes, contract research organisations or consultancy firms are not eligible SMEs for the purpose of the Co-operative and Collective schemes.

¹⁹ Extensions of this period may be allowed only in case of eligible career breaks which must be properly documented: maternity (18 months per child born after the PhD award) & paternity leave (accumulation of actual time off for children born after the PhD award) and leave taken for long-term illness, national service.

²⁰ Ongoing projects selected under any of the FET objectives of the FP7 ICT Work programmes.

Additional eligibility criteria applicable to FET-Open Objective ICT-2013.9.5

In addition to the eligibility criteria set out in Annex 2 to the Work Programme 2013, all FET-Open proposals submitted under objectives ICT-2013.9.5 are subject to the following eligibility criteria:

- 1) Part B (sections 1, 2 and 3) should not exceed 10 A4 pages, excluding section 4 and a single title page with acronym, title and abstract of the proposal. Section lengths should respect the following limitations:
 - The length of Section 1 (S&T Quality) is maximally 8 A4 pages;
 - The length of Section 2 (Implementation) is maximally 1 A4 page;
 - The length of Section 3 (Impact) is maximally 1 A4 page.
- 2) The title page and Section 1 of Part B should be fully anonymous, meaning that it may not include the name of any organisation or its staff involved in the consortium or any other information which could identify an applicant. Furthermore, on the title page and in Section 1 strictly no bibliographic references or links to additional information are permitted.

FET evaluation criteria

Eligible proposals under the FET objectives will be evaluated according to three criteria:

- **Scientific/Technological Quality**
- **Implementation**
- **Impact**

A score will be awarded for each of these criteria, based on the considerations listed below. For FET-Open short proposals submitted under objectives ICT-2013.9.1, ICT-2013.9.2 and ICT-2013.9.3, only Scientific/Technological Quality applies. Specific evaluation criteria are applicable to FET-Open Objective ICT-2013.9.5 (see next page).

	1. S/T Quality	2. Implementation	3. Impact
short STREPs (FET Open) Objective 9.1, 9.2 and 9.3	<ul style="list-style-type: none"> • Clarity of targeted breakthrough and its relevance towards a long-term vision. • Novelty and foundational character. • Plausibility of the S/T approach. 	<i>(not applicable to short STREP)</i>	<i>(not applicable to short STREP)</i>
	Threshold: 4/5		
Collaborative Projects (FET Open²¹ and FET Proactive, STREPs and IPs)	<ul style="list-style-type: none"> • Clarity of targeted breakthrough and its relevance towards a long-term vision. • Novelty and foundational character. • Specific contribution to progress in science and technology. • Quality and effectiveness of the S/T methodology. 	<ul style="list-style-type: none"> • Quality of workplan and management. • Quality and relevant experience of the individual participants. • Quality of the consortium as a whole (including complementarity, balance). • Appropriate allocation and justification of the resources to be committed (person-months, equipment, budget). 	<ul style="list-style-type: none"> • Transformational impact of the results on science, technology and/or society. • Impact towards the targeted objective in the workprogramme. • Appropriateness of measures envisaged for the dissemination and/or use of project results.
	Threshold: 4/5	Threshold: 3/5	Threshold: STREP 3.5/5
	Weight: 50%	Weight: 20%	IP 4/5 Weight: 30%
Coordination and Support Actions (FET Open and FET Proactive)	<ul style="list-style-type: none"> • Clarity of objectives. • Contribution to the coordination and/or support of high-risk and high-impact research, for new or emerging areas or horizontally. • Quality and effectiveness of the coordination and/or support activities. 	<ul style="list-style-type: none"> • Quality of workplan and management. • Quality and relevant experience of the individual participants. • Quality of the consortium. • Appropriate management of the resources to be committed (person-months equipment, budget). 	<ul style="list-style-type: none"> • Transformational impact on the communities and/or practices for high-risk and high-impact research. • Appropriateness of measures for spreading excellence, use of results, and dissemination of knowledge, including engagement with stakeholders.
	Threshold: 3/5	Threshold: 3/5	Threshold: 3/5
	Weight: 40%	Weight: 20%	Weight: 40%

²¹ Not applicable to FET-Open Objective ICT-2013.9.5.

Specific evaluation criteria applicable to FET-Open Objective ICT-2013.9.5

Eligible proposals under this FET objective will be evaluated in two steps. In a first step, the anonymous section 1 of part B of an eligible proposal will be evaluated only on Scientific/Technological Quality criteria. In a second step, only the proposals scoring above threshold on the Scientific/Technological Quality criteria will be evaluated on Implementation and on Impact. Scores are awarded per criteria, based on the considerations listed below.

	1. S/T Quality	2. Implementation	3. Impact
Collaborative Projects (FET-Open Objective ICT-2013.9.5 - STREPs)	<ul style="list-style-type: none"> Clarity of targeted breakthrough and its relevance towards a long-term vision. Novelty and foundational character. Specific contribution to progress in science and technology. Quality and effectiveness of the S/T methodology and workplan. 	<ul style="list-style-type: none"> Quality of management. Quality of the participants and of the consortium as a whole. Appropriate allocation and justification of resources (person-months, equipment, budget). 	<ul style="list-style-type: none"> Appropriateness of measures envisaged towards getting a transformational impact of the results on science, technology and/or society. Appropriateness of measures envisaged for the dissemination and/or use of project results.
	Threshold: 4/5 Weight: 80%	Threshold: 3/5 Weight: 10%	Threshold: 3.5/5 Weight: 10%

Thresholds are set for each criterion, as indicated in the tables above. A proposal failing to achieve any of these threshold scores will be rejected.

Priority order for proposals with the same score

As part of the evaluation by independent experts, a panel review will recommend one or more ranked lists for the proposals under evaluation, following the scoring systems indicated above. A ranked list will be drawn up for every indicative budget shown in the call fiche.

If necessary, the panel will determine a priority order for proposals which have been awarded the same score within a ranked list. Whether or not such a prioritisation is carried out will depend on the available budget or other conditions set out in the call fiche. The following approach will be applied successively for every group of *ex aequo* proposals requiring prioritisation, starting with the highest scored group, and continuing in descending order:

Proposals will be prioritised according to the scores they have been awarded for the criterion *scientific and/or technological excellence*. When these scores are equal, priority will be based on scores for the criterion *impact*. If necessary, any further prioritisation will be based on other appropriate characteristics, to be decided by the panel, related to the contribution of the proposal to the European Research Area and/or general objectives mentioned in the Work Programme.

Specific evaluation criteria for the Objective ICT-2013.9.9 FET Flagships

Eligible proposals under the FET Flagships call will be evaluated according to three criteria:

- Scientific/Technological Quality
- Implementation
- Impact

A score will be awarded for each of these criteria, based on the aspects listed below.

	Sub-criteria
Criterion 1 S/T Quality Weight: 50% Threshold: 4/5	<ul style="list-style-type: none"> • Degree of adherence to the Flagship concept as specified in the Work Programme. • Soundness of scientific concept, quality of objectives and progress beyond the state-of-the-art. • Quality and effectiveness of the strategic research roadmap, the associated workplan (including milestones, flexibility and metrics to monitor progress), and the resources available to achieve them. • Quality and effectiveness of the coordination of activities and research communities.
Criterion 2 Implementation Weight: 20% Threshold: 3/5	<ul style="list-style-type: none"> • Quality of the governance, including management procedures and risk management. • Quality and relevant experience of the individual participants, and their contribution to the common goal. • Quality of the core project consortium as a whole (including complementarity, balance). • Openness and flexibility of the Partnership and involvement of key actors. • Appropriateness of the allocation and justification of the resources to be committed (e.g. in-kind contributions, infrastructures, person-months, equipment and budget).
Criterion 3 Impact Weight: 30% Threshold: 4/5	<ul style="list-style-type: none"> • Contribution to the expected impacts listed in the Work Programme at the European and global level. • Extent to which the proposal makes use of complementarities, exploits synergies, and enhance the overall outcome of regional, national, European and international research programmes. • Quality of measures for use of results, management of intellectual property and dissemination of knowledge. • Impact on human capital, education and training at European level. • Approach to address social benefit and potential ethical and legal implications, including engagement with authorities and end-users.

Thresholds are set for each criterion, as indicated in the tables above. A proposal failing to achieve any of these threshold scores will be rejected.

Priority order for proposals with the same score

As part of the evaluation by independent experts, a panel review will recommend a ranked list of the proposals under evaluation, following the scoring system indicated above.

If necessary, the panel will determine a priority order for proposals which have been awarded the same score within a ranked list. Whether or not such a prioritisation is carried out will depend on the available budget or other conditions set out in the call fiche. The following approach will be applied successively for every group of *ex aequo* proposals requiring prioritisation, starting with the highest scored group, and continuing in descending order:

Proposals will be prioritised according to the scores they have been awarded for the criterion *scientific and/or technological excellence*. When these scores are equal, priority will be based on scores for the criterion *impact*. If necessary, any further prioritisation will be based on other appropriate characteristics, to be decided by the panel, related to the contribution of the proposal to the European Research Area and/or general objectives mentioned in the Work Programme.

- Indicative evaluation and contractual timetable: it is expected that the grant agreement negotiations for the shortlisted proposals will start as of January/February 2013.
- Consortia agreements: participants in all actions resulting from this call are required to conclude a consortium agreement.
- The forms of grant which will be offered are specified in Annex 3 to the Cooperation Work Programme.

European Commission

Directorate General for Communications Networks, Content and Technology (DG CONNECT)

Directorate C 'Excellence in Science'

Unit C.2 'Future and Emerging Technologies' & Unit C.4 'Flagships'

FET Open & Proactive Info Desk: cnect-ictfet@ec.europa.eu

Tel: +32 (0) 29 96 604



http://cordis.europa.eu/fp7/ict/programme/fet_en.html



<http://www.facebook.com/fetopen>



<http://twitter.com/#!/fetopen>

Flagships Info Desk: cnect-flagship@ec.europa.eu

Tel: +32 (0) 29 96 834



http://cordis.europa.eu/fp7/ict/programme/fet/flagship/home_en.html



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Proposers are reminded that they should consult the full text of the ICT Work Programme 2013 available at http://ec.europa.eu/research/participants/portalplus/static/docs/calls/fp7/common/32767-annex_6_to_the_decision_ict_for_cap_en.pdf