FETPROACT-01-2018

Boosting Emerging Technologies

Le PCN FET

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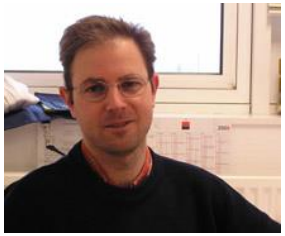

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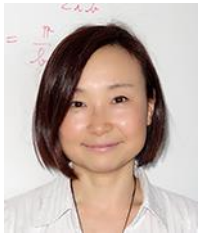


- Questions et réponses

« L'esprit FET »

Historique de FET

- Un programme initié en 1993
- Géré par la DG-CONNECT
- Ouvert à tous types de technologies sous Horizon 2020 (limité auparavant aux TIC)

The sower, Vincent van Gogh

''FET activities aim to create in Europe a ***fertile ground*** for responsible and dynamic ***multi-disciplinary collaborations*** on ***future technologies*** and for kick-starting new European research and innovation eco-systems around them. These will be ***SEEDS*** for ***future industrial leadership*** and for tackling society's grand challenges ***in new ways***.''

➔ **Recherche fondamentale**

➔ **Objectif moyen/long-terme (≈ 10 ans)**

Les Thématiques des Projets FET

https://ec.europa.eu/digital-single-market/en/fet-projects-portfolio

FET dans Horizon 2020

Pilier 1

EXCELLENCE SCIENTIFIQUE

- **ERC** : Conseil européen de la recherche
- **MSCA** : Actions Marie Sklodowska-Curie
- **FET** : technologies futures et émergentes
- **Infra** : infrastructures de recherche

Pilier 2

PRIMAUTE INDUSTRIELLE

- **TIC** : Technologies de l'information et de la communication
- **KET** : Technologies clés génériques
  - *Microélectronique*
  - *Photonique*
  - *Nano-bio-technologies*
  - *Matériaux avancés*
  - *Systèmes de production*
- **ESPACE**
- Innovation dans les **PME**
- Accès au **financement à risque**

Pilier 3

DEFIS SOCIETAUX

- **Santé**
- **Bioéconomie**
- **Energie**
- **Transport**
- **Climat**
- **Sociétés inclusives**
- **Sécurité**

Budget FET

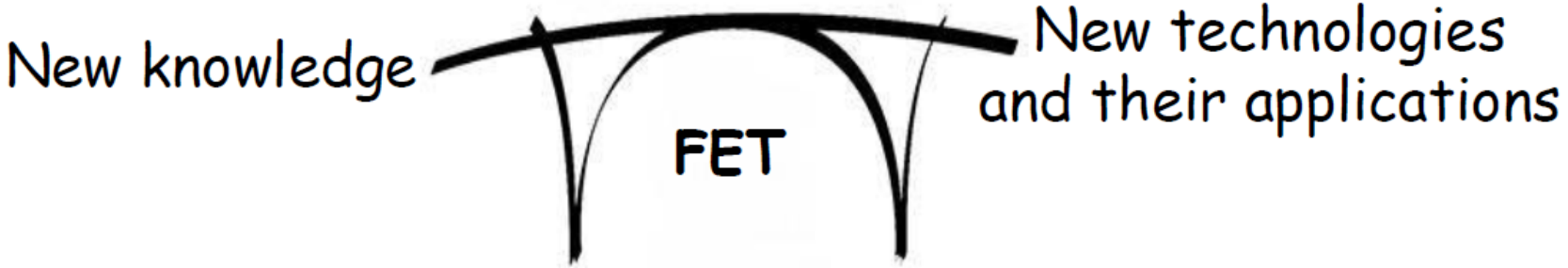
Pilier 1

11% du budget du *pilier I est* dédié à FET

« L'Esprit FET »

Les ambitions du programme ***Technologies futures et émergentes (FET)*** sont de :

- **Transformer l'excellence scientifique** de l'Europe en un **avantage compétitif** en découvrant des **technologies radicalement nouvelles**
- Faire de l'Europe **l'espace le plus attractif** pour la **recherche collaborative et interdisciplinaire** dans le domaines des technologies futures et émergentes



Les Instruments FET

Exploration de nouvelles idées

Dév. thèmes & commun.

Grands défis

Niveau de complexité et taille du consortium

FET Open

FET Launchpad (depuis 2016)

Un programme ouvert : projets collaboratifs blancs (sans contrainte thématique)

Projets : 3-4 M€

FET Proactive

HPC

Un programme thématique : développement de communautés dans un domaine ciblé

Projets : **4-7 M €**

FET Flagships

Un programme stratégique : fédération d'acteurs sur des priorités techno. de l'UE

Projets : **500 M €**

Les Types d'Actions FET

- **Research and Innovation Actions (RIA)** : projets collaboratifs
  - ✓ au moins 3 partenaires dans 3 pays membres de l'UE ou associés à Horizon 2020 (Israël, Suisse, Balkans etc.)
  - ✓ 2 à 7 M€ /consortium

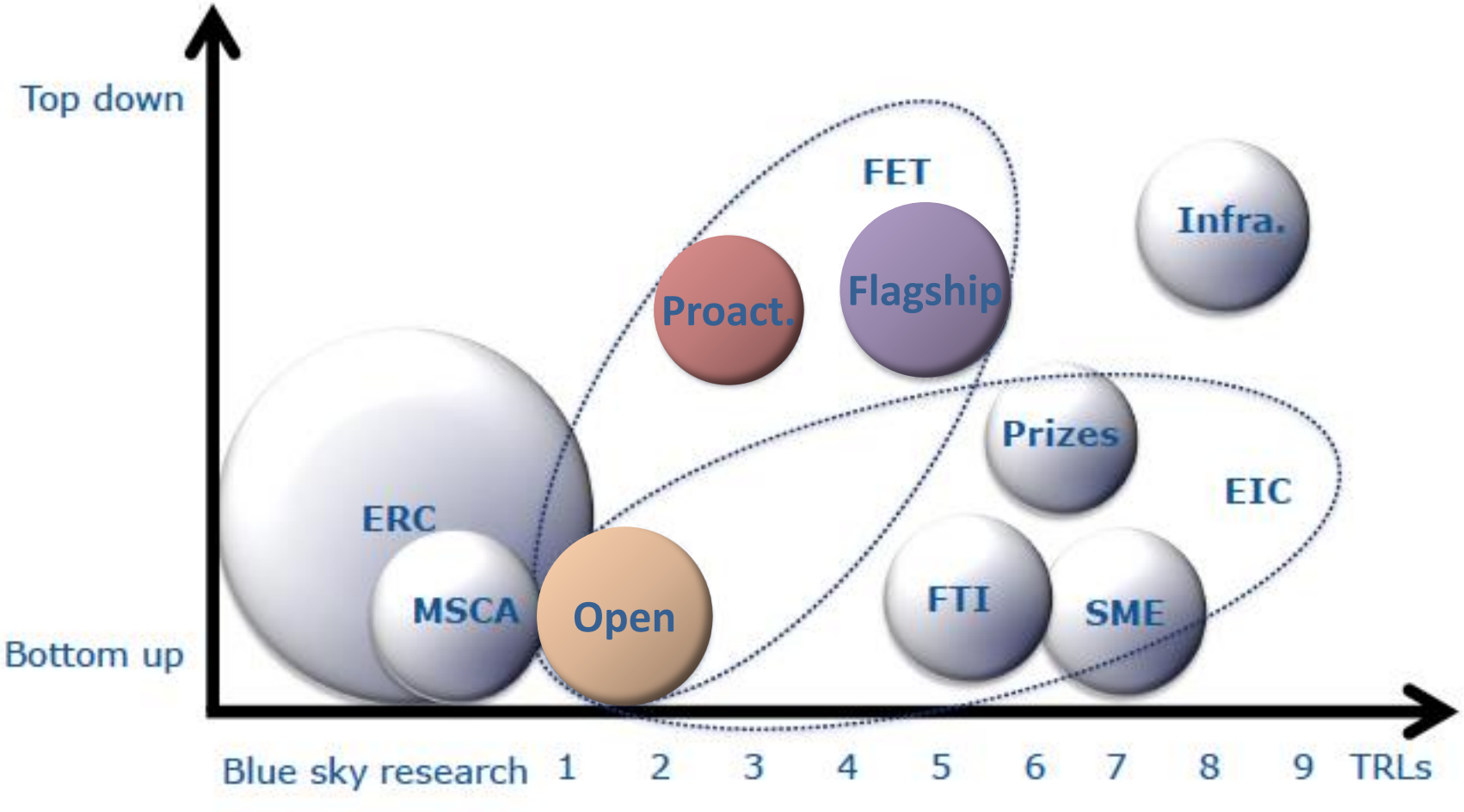
- **Coordination and Support Actions (CSA)** : soutien à la recherche (analyse d'impact, organisation d'événements, mise en place de réseaux…)
  - ✓ un ou plusieurs partenaires
  - ✓ 300 à 500 K€ / consortium

- **ERA-NET Cofund Actions (Cofund)** : soutien à la coordination des agences de financement nationales et régionales (ex. : CHIST-ERA, FLAG-ERA, QuantERA)

- **Framework Partnership Agreement (FPA)** : ne concerne que les grandes initiatives (Flagships)

- Pas d'Innovation Actions **(IA)** dans FET

FET : des TRLs Intermédiaires



Les Thématiques de l'Appel FETPROACT-01-2018

FET Proactive - Mission

- Objectifs
  - ✓ Le soutien aux recherches interdisciplinaires de rupture pour le développement de nouvelles technologies à partir de résultats scientifiques transversaux
  - ✓ L'établissement de communautés interdisciplinaires larges de taille suffisante pour permettre l'avancement des sujets de recherche et leur traduction technologique
  - ✓ La mobilisation au-delà des communautés de recherche, pour que l'Europe capitalise rapidement et efficacement à partir des opportunités sociétales et industrielles

- Financement des projets : de 4 à 7 M€

- Un nouvel ensemble de domaines fera l'objet d'un appel en 2020

6 Thématiques

1. **Artificial organs, tissues, cells and sub-cellular structures (15M€)**
2. **Time (13M€)**
3. **Living technologies (20M€)**
4. **Socially interactive technologies (15M€)**
5. **Disruptive micro-energy and storage technologies (15M€)**
6. **Topological matter (10M€)**

→ Etablir de nouveaux paradigmes technologiques
→ Créer des pools d'expertise européenne
→ Stimuler l'émergence d'écosystèmes d'innovation

Projets de petite ou de grande tailles (jusqu'à 7 M€, selon la thématique)

Date limite de soumission des propositions : 22/03/2018

Un second ensemble de thématiques sera sélectionné pour un appel en 2020

Impact Attendu

- Scientific and technological contributions to the foundation and consolidation of a radically new future technology
- Potential for future returns in terms of societal or economic innovation or market creation
- Spreading excellence and building leading innovation capacity across Europe by involvement of key actors that can make a difference in the future, for example excellent young, researchers, ambitious high-tech SMEs or first-time participants to FET under Horizon 2020
- Build-up of a goal oriented interdisciplinary community (within and beyond the consortium)
- Emergence of an innovation ecosystem around a future technology in the theme addressed from outreach to and partnership with high potential actors in research and innovation, and from wider stakeholder/public engagement, with due consideration of aspects such as education, gender differences and long-term societal, ethical and legal implications

Artificial organs, tissues, cells and sub-cellular structures (15 M€)

Proposals should aim at engineering biological, artificial or hybrid sub-cellular systems (e.g., synapses, organelles, vesicles), highly specific cell assemblies (including microbial), tissues, organs or multi-organ systems.

- Exploit recent advances in integrative biology (including modelling and simulation) and bio-engineering
- Combine the growing understanding of genome, proteome, metabolome and cell behaviour with strategies for the engineering and use of biological and hybrid functional constructs

- Possible long-term research targets include:
  - synthetic cell building
  - organ reproduction, replacement, control or repair
  - high-throughput organ- and body-on-chip technologies for the development of personalised treatment, drugs or vaccines

- Ethical issues should be properly addressed

European Commission

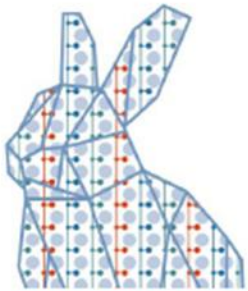
Time (13 M€)

This proactive is about new technological possibilities inspired by notions of time, not seen as a given and singular background against which things unfold, but rather as a resource that can be experienced and used in different ways.

- Possible research areas proposals could address include:
  - technologies for subjective time awareness (and its neural basis) and distortion
  - the role of time in processes like aging, healing, learning or evolution and how this can be influenced
  - understanding non-linear temporality in complex systems
- New ways to represent, modulate, duplicate or experience and use time could come from technologies in, for instance:
  - extreme electronics/photonics
  - data-streams analytics
  - time aware artificial intelligence
  - virtual and augmented reality
  - bio-engineering or neuroprosthetics

European Commission

Living technologies (20 M€)



Proposals should develop new functional biological, technological or hybrid artefacts with features of living systems such as physical autonomy, growth, interaction and enaction, adaptation and evolution. This could involve, for example:

- hybrid materials and systems with programmable features of shape, structure, functionality and evolvability
- possibly starting from naturally existing complexes
- research on multi-level mathematics and complexity of living systems or the boundaries/characteristics of life could be a part of the work proposed

- Proposals could use relevant results from evolutionary biology, ethology, micro-, plant- and animal biology, synthetic biology, systems biology and /or chemical biology

- Ethical issues should be addressed

European Commission

Socially interactive technologies (15 M€)

This addresses technologies to support deeper social interaction between people in groups which range in size from pairs to crowds

- This new socially interactive media should facilitate building trust and understanding, social integration, engagement, collaboration, learning, creativity, entertainment, education and wellbeing
- Proposals should include novel combinations of social sciences and humanities with neuroscience, engineering and computing to develop new experimental tools and paradigms
  - These tools could take into account, for example, context, culture, emotion, and factors of embodiment and cognition
- Ethical issues and the gender dimension should be addressed

European Commission

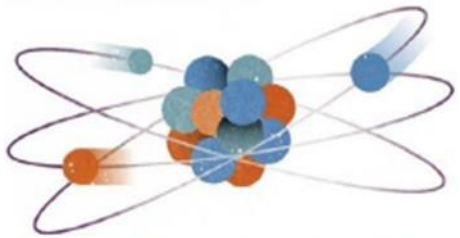
Disruptive micro-energy and storage technologies (15 M€)

Proposals should address novel technologies for local (close to where needed) energy generation, capture or storage

- This proactive covers:
  - Technologies for micro-energy or nano-scale energy generation, transfer, dissipation and conversion
  - bio-inspired energy technologies
  - the use of soft or intelligent materials
  - new types of batteries
- Smart integration of novel energy sources within hybrid/distributed energy systems can be addressed.
- Sustainability and environmental impact issues should be addressed.

European Commission

Topological Matter (10 M€)



This topic addresses new materials exploiting interactions between quantum effects and topology

- Topological insulators already studied
  - possible applications in spintronics
- Other material properties can be addressed
  - applications in photonics, mechanics (eg elasticity, acoustics), superconductivity and plasmas are possible examples
- Proposals should go beyond pure physics and mathematics
  - Prototypes should be built, tested and benchmarked
- Methodology should include an engineering approach for using the quantum effects of wave-matter interactions in novel components

European Commission

Modalités de Soumission

- **Soumission en 1 étape** via le portail du participant
- Partie A en ligne : informations administratives
- Partie B : document de **30+1 pages** maximum
  - ✓ page de couverture (1 page)
  - ✓ Section 1: Excellence
  - ✓ Section 2: Impact
  - ✓ Section 3: Implementation
- Information complémentaire
  - ✓ Section 4: members of the consortium (entités légales, CV, sous-traitance, ...)
  - ✓ Section 5: éthique et sécurité

Bilan 2014-2017 : taux de succès, participation FR, …

Thématiques 2014-2015 et 2016-2017

WP 2014-2015

- Global Systems Science
- Knowing, doing and being: cognition beyond problem solving
- Quantum Simulation

35 M€

WP 2016-2017

- Future technologies for societal change
- Biotech for better life
- Disruptive information technologies
- New technologies for energy and functional materia

80 M€

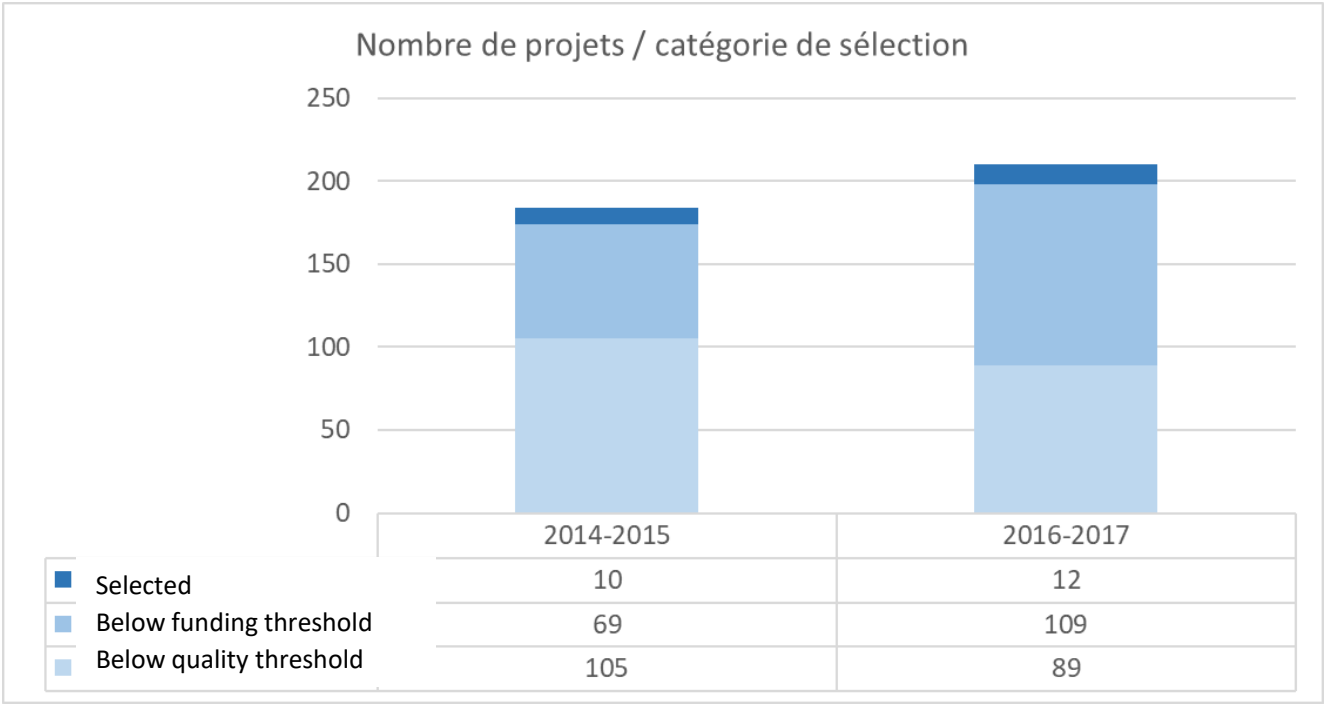
Statistiques 2014-2017 (1/2)

≈ 7 équipes / projet

3-4 M€ / projet

Taux de succès de 3 à 18 % selon la thématique

FR 2ème bénéficiaire (après DE) avec 15 projets dont 2 coordinations pour 16,75 M€



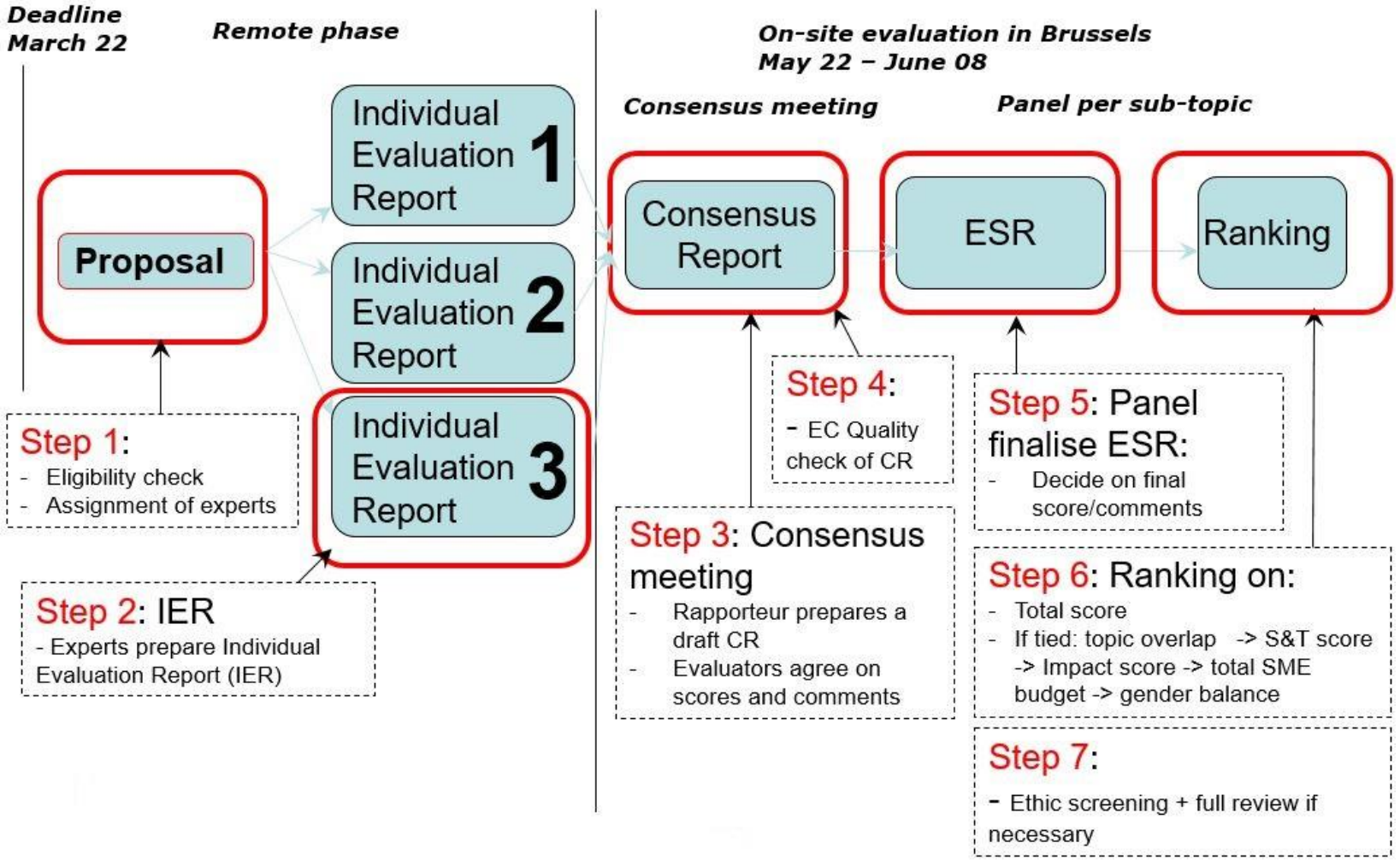
	2014-2015	2016-2017
Budget de l'appel	35 M€	80 M€
Propositions	184	210
Sélection	10	12
Taux de succès	5,4 %	5,7 %

L'Evaluation FET Proactive

Critères d'Evaluation

Excellence	Impact	Implementation
❑ Clarity of long-term vision of a science-enabled technology. ❑ Concreteness and ambition of the proposed science-to-technology breakthrough that addresses this vision. ❑ Range and added value from interdisciplinarity, novelty and non-incrementality of the research proposed. ❑ High-risk of the research proposed and plausibility and flexibility of the approach.	❑ The extent to which the outputs of the project would contribute to the expected impacts mentioned in the work programme under the relevant FET topic. ❑ Effectiveness of measures and plans to disseminate and use the results (including management of IPR) and to communicate the project to different target audiences.	❑ Coherence and effectiveness of the work plan to achieve project objectives and impacts, including adequate allocation of resources to tasks and partners. ❑ Appropriateness of the research and innovation management structures and procedures. ❑ Role and complementarity of the participants and extent to which the consortium as a whole brings together the necessary expertise.
Threshold: 4/5 Weight: 60%	Threshold: 3,5/5 Weight: 20%	Threshold: 3/5 Weight: 20%

Processus d'Evaluation



Analyse des « ESR »

- ESR : Evaluation Summary Report

- Corpus : FET Proactive 2014-2017
  - ✓ Tous les projets retenus (main + reserve lists) : 26
  - ✓ Below available budget : projets à coordination française : 10
  - ✓ Below threshold : projets à coordination française : 17

- Relevé des points forts et faibles mentionnés par les experts pour chacun des critères d'évaluation

Excellence – Points Forts (1/2)

Nouveauté / Ambition

"Very clear scientific and technological contributions , potential of breakthrough very clear, entirely new research in new domain, high foundational character"

"Investigates problems that until now have only been abstract ideas"

" Significant breakthrough in both basic science and translational medicine with significant implications for medical electronic market; very timely topic"

"The novelty level of the presented idea is absolute; enormous potential of achieving the desired breakthrough in the thermoelectric technologies to make them truly environmentally friendly and commercially competitive; perfect match to sub-topic; the proposal fits very well into the "ethos" of FET"

Faisabilité

"Research quality of the partners is outstanding, giving confidence that the targeted breakthroughs can be achieved and ultimately translated"

"Contains the whole required chain of steps to achieve the proposal challenge"

"Based on substantial preliminary work"

"Ongoing projects in which partners are involved provide important background "

"Feasible; well-conceived; ambitious in both science and technology aspects"

Industrie/Applications

"A WP entirely dedicated to the fabrication of prototypes - the added value comes from the strong interaction with industry (4 companies actively involved)"

"The proposed platform will be designed to have a lifetime beyond the project"

"Synergy is very good between the academic researchers, however importantly the proposal also engages carefully selected SMEs and one large industrial partner relevant to the ultimate application in waste heat recovery"

"New efficient line of technology leading to new applications"

Excellence – Points Forts (2/2)

Interdisciplinarité

"Integrates neurophysiology with robotics, computational modelling and different visions of engineering"

"Encompasses mathematics, computer science, molecular biology, nanofabrication"

"Certainly multidisciplinary, connecting technologists and material scientists, engineer experts in integrated circuits with biologists working with different animal models and end-users and hospital clinicians, industrial partners and a neuroethical team providing guidance on ethic issues; involves two teams of philosophers specialized in bio and neuro-ethics; participation of technology partners in fundamental research and vice-versa, and a smooth flow of neuro-research knowledge from pre-clinical and clinical groups"

"Competencies from neurosciences, physical medicine, rehabilitation, nanotechnology, numerical modelling, neurosurgery, molecular physiology, and stakeholder engagement which is beyong current mainstream collaborations"

" Perfect symbiosis; covers the entire knowledge/technology value chain; graphic representation of synergies among different disciplines"

"Integrates neurophysiology with robotics, computational modelling and different visions of engineering"

"Engages physicists, chemists and electrochemists who will need to fully engage in exchange of ideas; the challenges and opportunities arising from interdisciplinarity are well illustrated in figure 1.3"

"Integration between material science, synthetic chemistry, nanotechnology, biophysics, cell biology and oncology; close collaboration between PIs and labs withing the work packages and crosstalk between the WPs are notable"

"The proposal is definitely interdisciplinary and aspects from psychology, neurosciences, robotics, AI, movement science, and computer science are addressed"

Excellence – Points Faibles

Manque de nouveauté / vision

"Not persuasive and elaborated, incremental only "

"No breakthrough, objectives are very general, no novelty or ambition "

"state of the art not well defined "

"Advantages of breakthrough not well explained "

Manque de précisions / Faisabilité

"Methodology lacks details (in particular for narrowing multiple options)"

"Too ambitious; lack of explanations about overcoming some scientific bareers"

"Contribution to the science is not enough specified"

"More details of the research methods should have been provided"

"From a technical perspective important elements describing the system are missing"

"Quantitative targets or comparison with existing technologies are scarce"

Interdisciplinarité

"Limited information about cross-fertilisation "

"Moderate interdisciplinarity "

"Extent and benefit from interdisciplinarity is somehow unclear"

Gestion des risques

"Risk about quality of integration of the numerous partners"

Impact – Points Forts (1/2)

Description de l'impact

"Convincing, significant impact on society and health"

"Good impact on medicine, impact on society and technology is convincing"

"The outcome of the project will have transformational impact on future robotic technology"

"Transformation of technology in the short term and of society in the long term"

"Separation between immediate impact and potential future impact extremely detailed"

Communication

"Technology will be widely utilised; includes communication toward general public"

"The project also organizes summer schools, summer laboratories and workshops"

"use of multi-media, internet, viral campaigns and social networks"

"Educational activities for the promotion of science and the social acceptance of the technology"

"Particular attention to general public: mobile phone application to attract attention of young people"

Nouveaux acteurs

"The two SMEs involved are high potential novel actors"

"Number of young researchers as well as established senior investigators; proper gender balance in the team"

"Good synergy of the youth and well-known scientists; role of SME clearly outlined; activities devoted to training and development of young researchers"

Impact – Points Forts (2/2)

Diffusion/ Exploitation des résultats

"Realistic and credible strategy; priority for gold open access publications"

"Database publicly available for scientific community"

"Effective, high-quality dissemination measures including patents, conference contributions, scientific publishing, and unconventional ones as well as the website; well-structured plan to involve stakeholders, clinicians, media experts and business people; as well as to make aware the SCI community"

"Demonstration and try-it-yourself opportunities in medical trade fairs"

"Good dissemination plan to involve stakeholders"

"Usual and appropriate "impact measures" for such low TRL project (web page, publications..)"

Applications / Industry

"The expected impact is high… This is strengthened by including two industrial partners; the industrial partners plan to incorporate the results of the project; the results of the project can be directly used to strengthen European market"

"Commercialization opportunities (start-up and spin-offs), potential impact on EU innovation ecosystem might break the monopoly of large companies like Google and Facebook, could facilitate a type of social and collaborative innovation (innovators, users, communities etc...) at a scale impossible before"

Autre

"Will establish a solid baseline of knowledge and skills for future applications); potential major societal impact; appropriate private entreprises are involved ensuring commercialisation of usable products; several of the involved university partners have experience in commercialisation; potential significant economic impact for EU; will help the EU secure a global leading position in the healthcare industry and bioelectronics medicine; enabling the EU pharmaceutical industry to diversify from drugs into the lucrative medical device market; good strategy to engage a broad reservoir of stakeholders via a web newsletter and news alert on the website; preliminary inquiries about the market potential of project results; relevant aspects are included in the intellectual property and exploitation management plan"

Impact – Points Faibles

Description de l'impact

"Impact is vague; no transformation of technology as it is only incremental"

"Impact overestimated and not discussed enough"

"The proponents occasionally overstate their technology/scientific impact ignoring potential competitors and state of the art"

"Interdisciplinary community structuring is not convincing"

"Impact science but not technology or society"

"Narrow impact; incremental"

Communication

"Public engagement not sufficient"

"Proposed outreach activities are rather standard"

Nouveaux acteurs

"Only one female PI"

"not many new actors, no new technology leaders would result from the project"

Applications

"No estimations or surveys on market potential"

"Technological advancement may be far from the involvement of industry and stakeholders"

Diffusion/ Exploitation des résultats

"Dissemination measures very standard and there is no WP entirely dedicated to this activity"

"Plan for exploitation not sufficiently detailed; interdisciplinary community structuring is not convincing"

Implementation – Points Forts

Clarté du plan de travail

"Separating scientific work from validation is an excellent feature; quality of work plan is outstanding"

"Steering/advisory committee with 3 external internationally-recognized advisers included, with letters of support provided"

"The workplan adds very good detail to the overall vision of the proposal; the work packages follow the general "mnemonic" of figure 1.2; milestones and deliverables very clear and logically justified; proposal plan, relation between the WPs and Gantt chart are perfectly illustrated and easy to follow"

"Objectives are S.M.A.R.T."

"Management structure is perfectly tuned to the small size of the consortium and properly designed to handle long-term project goals and day-by-day activities"

Consortium

"Very good scientific human resources"

"Publications of the consortium are very good"

"Good track records of grant funding and high rank publications"

"Two company members of the consortium with relevant R&D experience; participation of SMEs is critical for innovation management and dissemination activities towards industry"

"Although the number of partners is quite limited, all needed technical implementation expertise are present, with a simple and effective management structure"

Allocation des ressources

"Very well justified allocation of resources"

"5M is outstanding value for money; detailed breakdown of costs provided together with "pie-charts" illustrating the proposal's financials"

"Person-months are well-balanced and justified; table with exact numbers for equipment is provided for all participants"

Autre

"Intermediate targets are appropriate and well justified; risk assessment is properly addressed; dependencies between tasks and WPs are clearly identified and justified; high quality work plan with detailed scientific description of tasks; sufficient time for corrective and mitigations actions; excellent scientific advisory board; good balance of competencies; strong partnership; they are complementary, without unnecessary overlap of competencies; experienced in collaborative projects"

Implementation – Points Faibles

Clarté du plan de travail

"Lack of risks description"

"IPR not sufficiently considered"

"Milestones only in WP1"

"No specific WP for dissemination"

"Explanation of workflow and timing of WP3 is not sufficiently detailed"

"Some intermediate targets not sufficiently clear, confidentiality nature of some deliverables not sufficiently explained, list of milestones needs clarification"

Consortium

"Redundant expertises"

"Lack of industrial partner"

"Very large amount of topics, very large consortium of 14 partners, not easy to judge if all partners are necessary, could benefit from less partners, hard to justify all involvements"

Répartition/justification des ressources

"Low number of postdocs and students in comparison with the number of partners"

"Only two groups have requested funds for travel to other groups"

Témoignage d’un expert F. Barrière

Préparation d'une proposition

Les Conseils de la Commission (1/2)

Be ambitious, follow your 'dream'

- Novelty is essential
- Incremental refinements rarely make it – high-risk does
- Boil down the vision to concrete and ambitious targets
- A FET Proactive project is different from an inflated FET-Open one
- Check with others but keep it *your* proposal (e.g. FET NCPs through IDEALIST)

Consortium

- There are no hidden expectations from our side (beyond the rules for participation), i.e. no cosmetic roles
- Look for renewal here too - novelty probably starts here
- Narrow inter-disciplinarity will not be good enough to win (look beyond your comfort zone – this is not ERC-like career building)
- Commitment: will the project transform the partner(ship)? (mission vs. role)

Les Conseils de la Commission (2/2)

Collaborate, collaborate, collaborate…

- Take inter-disciplinarity seriously - write your proposal together
- Collaboration throughout the project, driven by joint questions, goals and mutual learning, not just passing on results between silos
- Explore new ways of working/learning/changing together

Communicate, connect and engage

- Scientific publications
- Social networks & media
- Expand from research consortium to start innovation eco-system
- Public engagement
- Consider third party funding to expand

Keep it simple

- Focus on the high-risk parts with crisp targets
- Don't write for 'us', but for people like *you*
- Check your deliverables list – write what *you* need and what *you* want

Témoignage d'un lauréat : projet MAGENTA, S. Nakamae, coordinatrice

FET
PCN - Horizon2020

magenta

Grant no° 731976

MAGnetic nanoparticle based liquid **EN**ergy materials for **T**hermoelectric device **A**pplications

(https://www.magenta-h2020.eu)

Sawako Nakamae (coordinatrice)

SPEC/IRAMIS/DRF/CEA

cea DE LA RECHERCHE À L'INDUSTRIE

IRAMIS

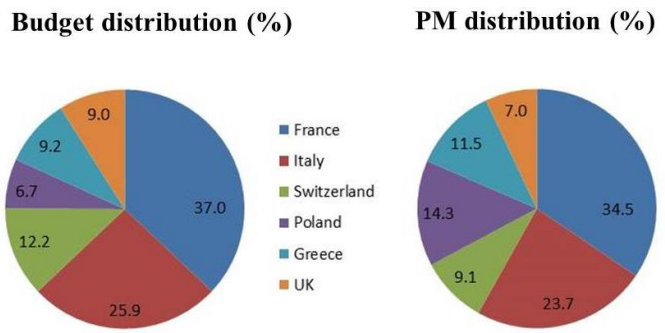
spec

cnrs dépasser les frontières

Campus Paris Saclay
FONDATION DE COOPERATION SCIENTIFIQUE

Descriptions du projet

- Call: **Horizon 2020 FET – Proactive 2016** (Area 4b: "New technologies for energy and functional materials"
  - **Thermoelectric energy converter using ionic liquid based ferrofluids**
  - **Objectives:**
    - **Foundational knowledge and its dissemination** – ORDP, public engagement actions, etc.
    - **Prototype thermoelectric modules** - ready for trial by *lead-users* (automobile and microelectronics)
    - **Scale-up productions** - functional ionic liquids and protocols for 'new' IL-based ferrofluids
- Starting date & duration: **January 1st, 2017 & 48 months**
- Number of partners: **10**
  - 6 countries**: France, Italy, Greece, UK, Switzerland, Poland**
  - Academic vs. Industry**: 6 academic & 4 Industrial (3 PME + FIAT)**
  - PME implications
    - **SOLV (France):** Ionic liquid synthesis and scale-up production
    - **CTECH (UK):** Dissemination, IPR, Website and Protoype
    - **GEMMATE (Italy):** Prototype for ICE automobiles (with FIAT)
- Total budget: **4.999 M€** (= EC funding)



Montage du projet

- 2 soumissions à FET-OPEN en 2014 (avec 4 partenaires académiques et 2 indust.)
- Conversion à FET-PROACT fin 2015 (+2 partenaires académiques, +2 indust.)
- Soutiens lors du montage du projet
  - PCN-FET (Mme Catherine Gilles-Pascaud, IRAMIS/DRF/CEA): pierre de touche
  - Direction de l'Institut et du pole: relecture, conseils diverses
  - DRT - Bureau d'Etude: analyse de marché
  - Ateliers (Rencontre Lauréats-Candidats, Pilotage du projet FET, Webinar): aspects stratégiques et administratifs
- Constitution du consortium
  - 1 collaboration existant (CEA-CNRS)/1 concurrent (CNR) /1 client-vendeur (PME)/6 nouveaux partenaires – selon leurs compétences complémentaires au projet
  - AMPEA (EERA: European Energy Research Alliance)
  - Partenaires de partenaires
  - Réseaux sociaux (e.g. LinkedIn)
- Difficultés rencontrées
  - Collaborations existantes des partenaires (copinage)
  - Déséquilibres entre les pays (salaires, règles, etc.)

Recommandations

Retour d'expérience

- *1* guide/*1 projet*
- Consortium:
  - Objectifs scientifique et technique avant tout
  - Pas de copinage (très difficile)
- Ecriture du proposal*:*
  - 'Abstract' et 'Relation to Workprogram'
  - *1* auteur unique (facilite le lecture)
  - Répondre à tous les critères dans l'appel et le work programme
  - Justifier toutes les « descriptions of actions »
  - Démontrer bien les interactions entre les WPs (PERT) et les partenaires
  - Utiliser les diagrammes, les tableaux, les figures, etc.

FET
PCN - Horizon2020

Gatekeepers & Call's Scope

Put them all in the abstract!

magenta

Breakthrough scientific and technological target

Novelty

Interdisciplinary

Foundational

Computational simulations

Bottom-up

Long-term vision

MAGENTA aims to bring **breakthrough technological possibilities in thermoelectric materials research** for small-to-medium scale waste-heat recovery applications. The originality of the project is based on the **newly discovered thermal-to-electric energy conversion** capacity of ionic-liquid based ferrofluids (IL-FFs); *i.e.*, colloidal suspension of magnetic nanoparticles. It is an **inter-disciplinary and cross-sector R&D project** combining concepts and techniques from physics, chemistry and electrochemistry with active participations from **3 SME and 1 industrial partners** implicated in the materials supply-chain, the device design/performance and the market-uptake assessment. The lead-user industries targeted by MAGENTA are automobile and microelectronic sectors, but demonstration-type thermoelectric generators will also be produced for public outreach actions on renewable energy. Both experimental and theoretical approaches will be employed to **build foundational knowledge of novel magneto-thermoelectric phenomena** in ferrofluids. **Computational simulations** will allow **'bottom-up'** construction of IL-FFs with optimal conditions for harvesting energy. The end-products of MAGENTA, application specific magneto-thermoelectric materials and devices, will provide **innovation leadership to European companies in waste-heat recovery industries**. The waste-heat recovery applications that can benefit from MAGENTA's technology are numerous; spanning from microelectronic devices, hybrid vehicles, to electricity harvesting in nomadic environment. Through its foundational, interdisciplinary and cross-sector nature, the project will also serve as a "seed community" for building **innovation ecosystem around this novel thermoelectric technology, presenting long-term impacts on future renewal energy science and technology**. Withal, MAGENTA offers radically new thermoelectric materials that are versatile, **cost-effective** and **non-toxic** to assist the **economically and environmentally sustainable** energy transition in Europe.

Energy conversion

High-risk

Resource availability, eco-friendliness

Merci et bonne chance!

MAGENTA is financed by a Horizon 2020 FET-PROACTIVE project under Grant no° 731976

Plus d'Informations

- Témoignages de lauréats : http://www.horizon2020.gouv.fr/cid115916/rencontre-laureats-candidats-fet-proactive.html
- Exemples de projets FET : https://www.youtube.com/playlist?list=PLyMUk47rPuqq1BjtqghimG-X8c8kdqF_S
- Présentation de l'appel FETPROACT-01-2018 par la Commission : https://ec.europa.eu/digital-single-market/events/cf/ict-proposers-day-2017/item-display.cfm?id=19944
- Page web de l'appel FETPROACT-01-2018 : http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/fetproact-01-2018.html
- Le PCN FET est à votre disposition pour toute question : pcn-fet@recherche.gouv.fr

Encore Plus d'Informations

- L'ANR via l'instrument MRSEI apporte une aide au montage d'un projet européen : http://www.agence-nationale-recherche.fr/suivi-bilan/construction-de-l-espace-europeen-de-la-recherche-et-attractivite-internationale-de-la-france/mrsei-montage-de-reseaux-scientifiques-europeens-ou-internationaux/

- L'ERA-NET CHIST-ERA propose tous les ans aux chercheurs 2 thématiques dans l'esprit de FET Proactive : www.chistera.eu

Questions et réponses