Future and Emerging Technologies (FET)
FET-Open CSA topic
Work Programme 2014-2015 in H2020

FET CSA Info Day, Brussels, 16th of May 2014

Future and Emerging Technologies

European Commission

MORNING: PLENARY SESSION

10:00 Welcome

10:10 Overview of FET in H2020

10:40 Rationale of the FET Coordination and Support Activities called for in 2014

11:10 Proposal guidelines, submission and evaluation procedures for this topic

11:40 Q&A

12:15 Walking lunch and networking

AFTERNOON: PARALLEL SESSIONS

13:30 Round table discussions on FET Observatory, FET Communication, FET Prizes

14:45 Networking

15:15 Round table discussions on FET Impact, FET Conference and FET Exchange

16:30 Sharing key messages from the round tables

17:00 End

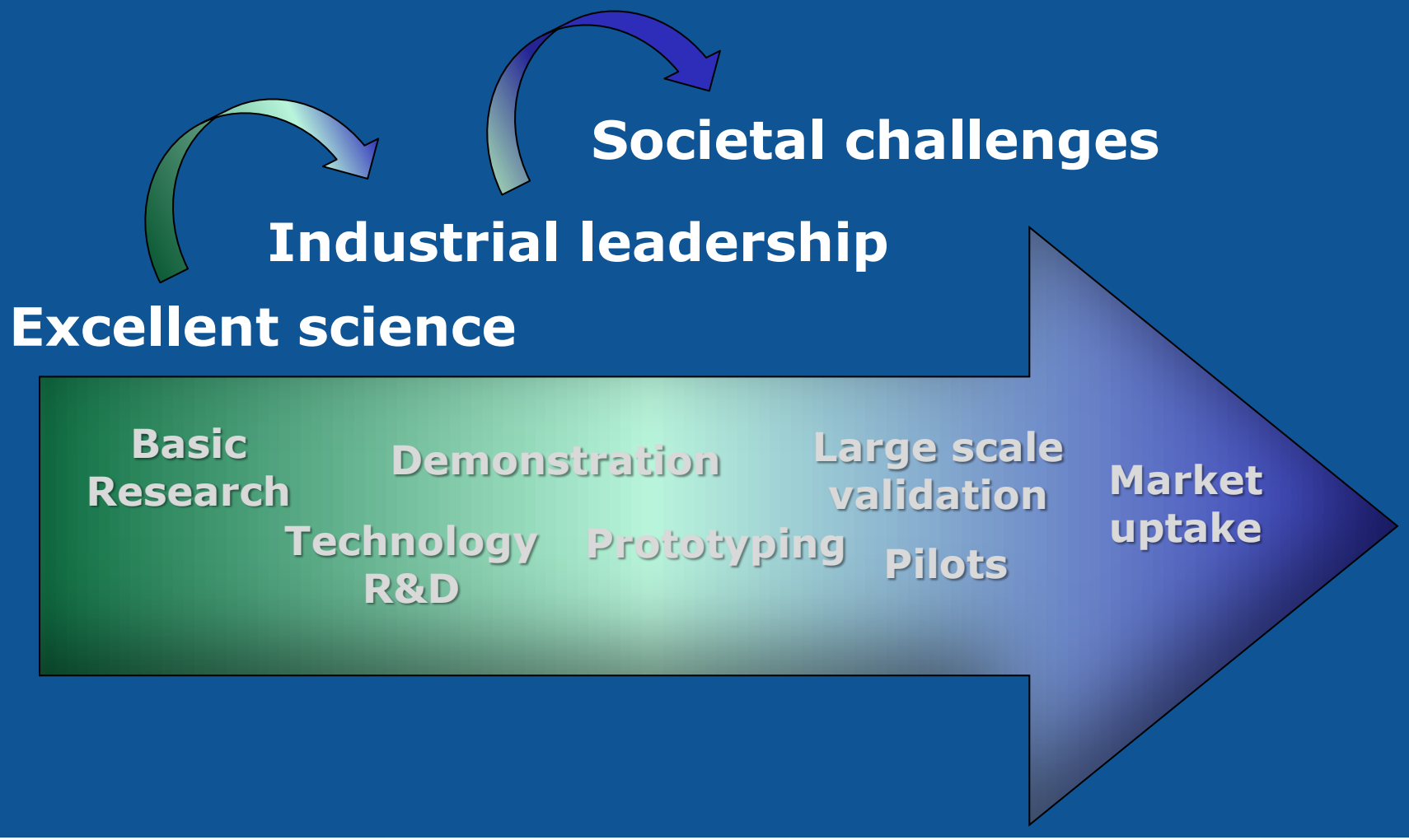
European Commission

HORIZON 2020

the EU framework programme for research and innovation

2014-2020

H2020 covers the full innovation chain



A stronger, clearer focus

H2020 Budget: 77B€ (current prices)

OTHERS: 5,8B€ (Spreading excellence & widening participation, Science & Society, JRC, EIT)

FET in Horizon 2020

European Commission

Excellent Science pillar in H2020

- European Research Council (13B€)
- Marie Skłodowska-Curie actions (6,1B€)
- **Future and Emerging Technologies** FET: 2,7 B€
- Research infrastructures programme (2,4B€)

*"**Future and emerging technologies** shall support collaborative research in order to extend Europe's capacity for advanced and paradigm-changing innovation. It shall foster scientific collaboration across disciplines on radically new, high-risk ideas and accelerate development of the most promising emerging areas of science and technology as well as the Union wide structuring of the corresponding scientific communities."*

HORIZON 2020 - THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION (2014-2020)

Pathfinding Europe's technological future

FET mission

- To turn Europe's excellent science base into a competitive advantage by uncovering radically new technological possibilities

- To turn Europe into the best place for collaborative research on future and emerging technologies

From FP7 to H2020

A new level of ambition

- *New mandate, going beyond ICT*
  - Pathfinding Europe's technological future
  - Bootstrapping new R&I eco-systems
- *New large-scale partnering initiatives complementing small and medium scale activities*
  - FET Flagships
  - High-Performance Computing (ETP4HPC)
- *A much larger intervention budget*

FET: a new actor in the S&T funding landscape

erc
European Research Council
Established by the European Commission

European Commission
ERASMUS
MUNDUS

FET-Open CSA call topic for 2014

The challenge is to make Europe the best place in the world for collaborative research on future and emerging technologies that will renew the basis for future European competitiveness and growth, and that will make a difference for society in the decades to come.

Funding

Policies

Ideas

Visibility

Communication

Learning

Engagement

Diversity

Exchange

Dialogue

Stimulating

Outreach

Community building

Transfer

Enthusiasm

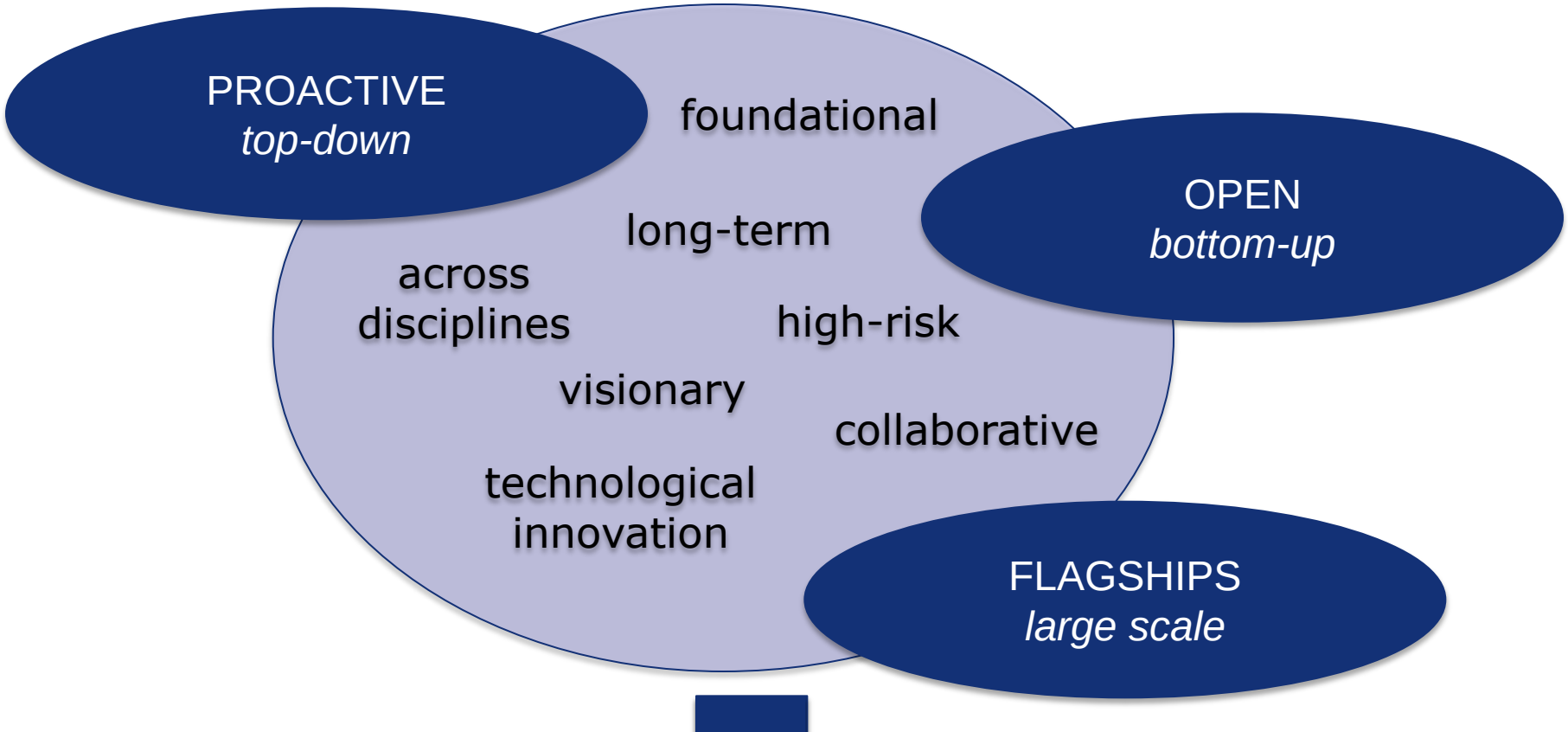
Opinion

Impact

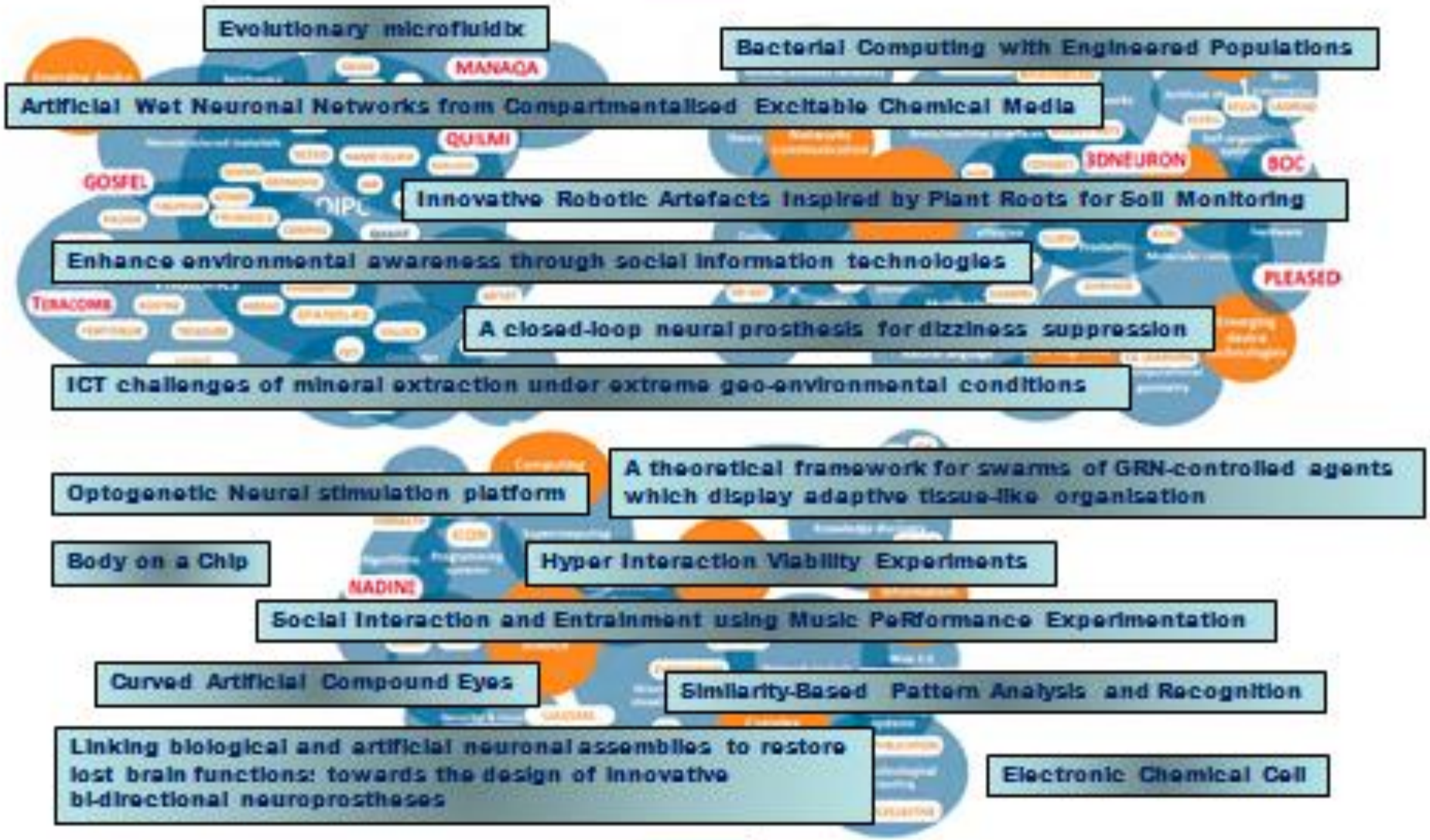
Attracting talent

What is FET all about?

FET: *Different schemes with shared values*



FET Open in FP7
a portfolio snapshot



Building on FET interdisciplinary research

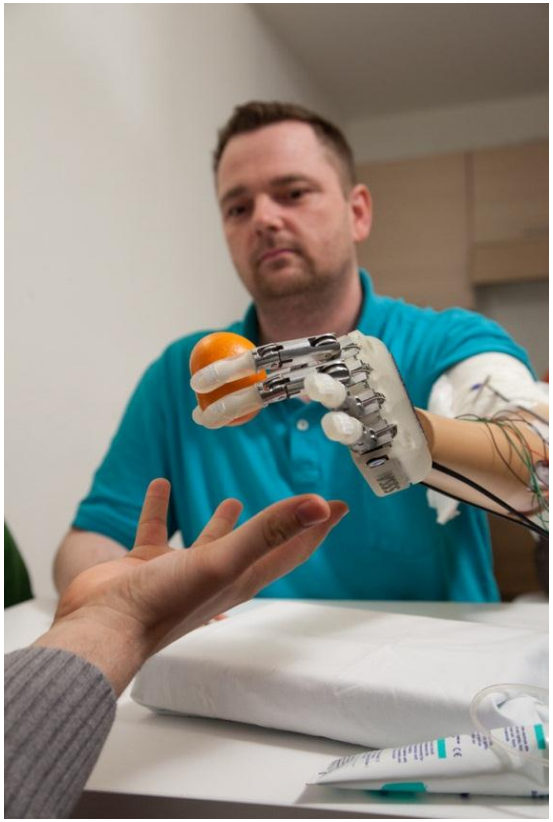
Restored real-time sensory feeling

biorobotic prosthesis

algorithms and software

implant surgery

clinical and neurophysical protocols



Nebias-Project.eu

CYBERHAND

Neurobotics

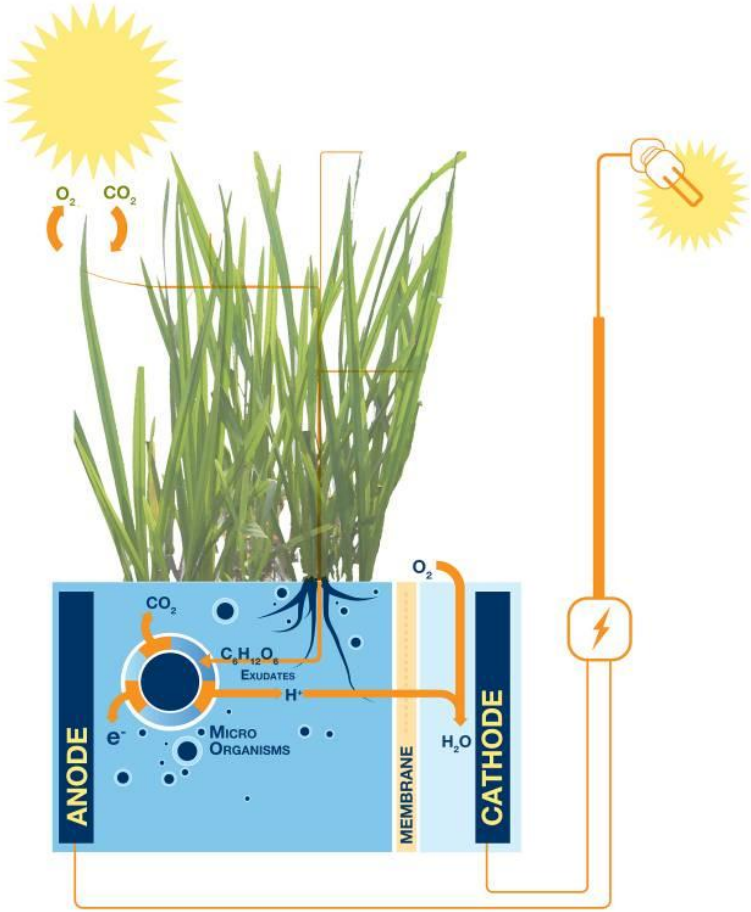
European Commission

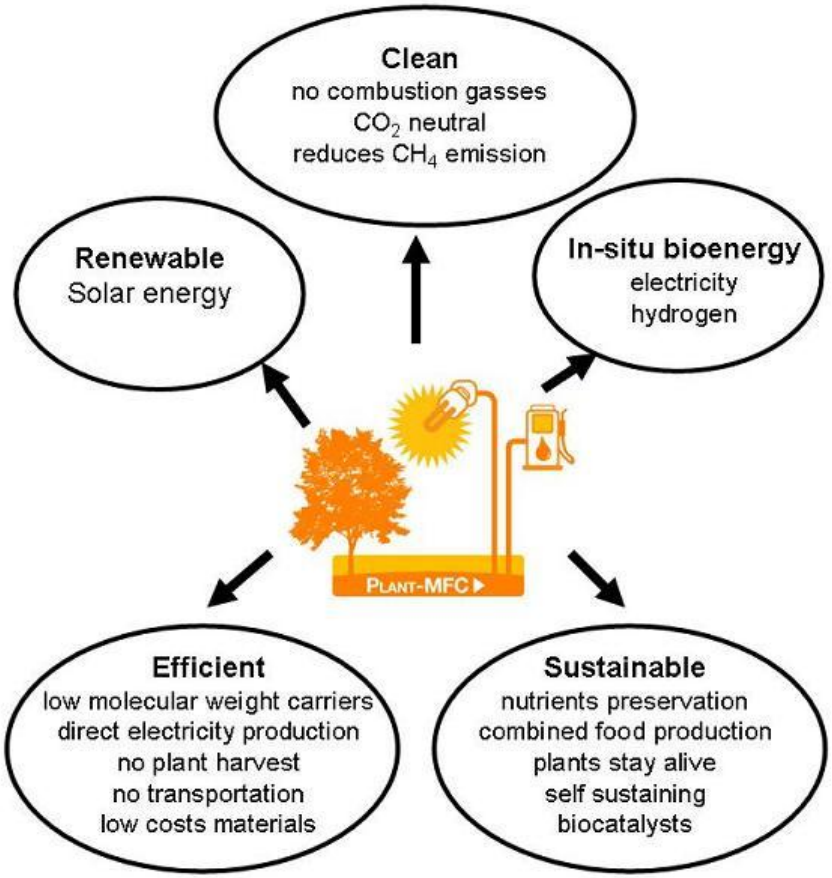
From science to future technolgies

Starlab® Living Science

NE neuroelectrics ®

FET outside ICT: Plantpower (FP7)





An engineered ecosystem of plants and bacteria producing electricity from sugars

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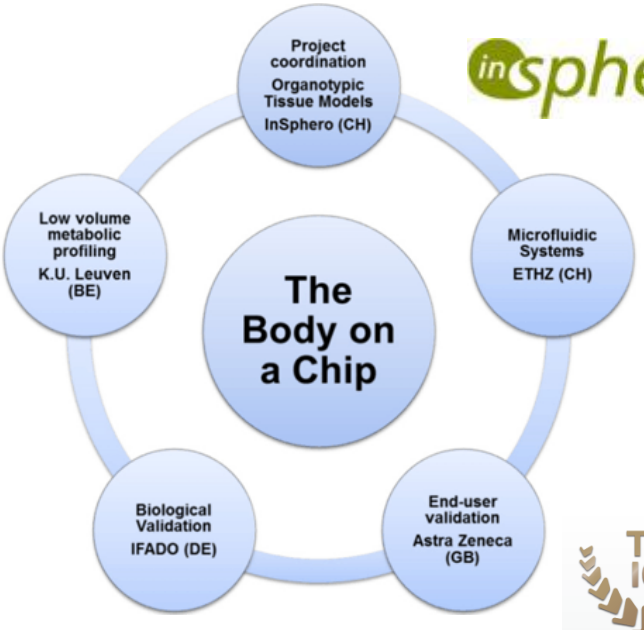
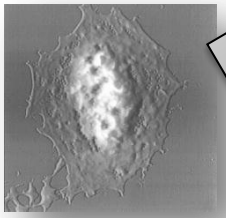
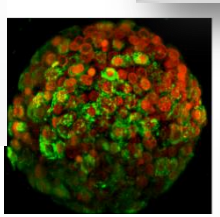
SME driven research in FET

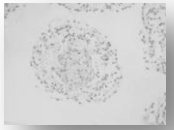


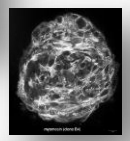
Nature, April 2013

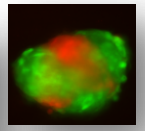


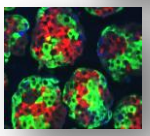
Current business











Next wave innovation

From 2D via 3D cell cultures to a body on a chip with several metabolically connected 3D cultures for more reliable and predicitve cell based drug testing

FET promotes young explorers taking the lead

fast dynamics flows and multi-physics couplings

cognitive neural prosthesis

quantum information processing and communication

High Performance Computing

Higher performance of supercomputers by radically rethinking the architecture over and over again

Performance (flops)

exa

peta

tera

giga

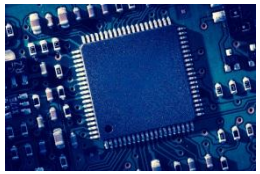
mega

kilo

vacuum tubes

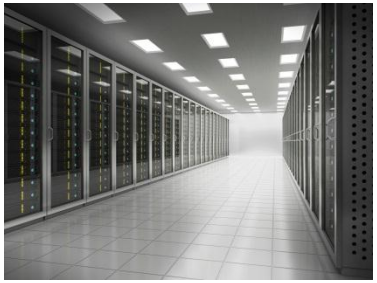
transistors

integrated circuits



liquid cooling

parallel processing



massive parallelism

Software innovation over time contributed equally to increased performance

1960 1970 1980 1990 2000 2010 2020

FET Flagships – experimenting a novel partnering approach

FET Flagships are ambitious, large-scale, long-term, science-driven, goal-oriented, roadmap-based research initiatives that are expected to:

- provide a strong S&T basis for future technological innovation and substantial benefits for society
- help overcome fragmentation and increase the impact of European research and innovation efforts

They require:

- a long-term commitment of all key stakeholders sharing a common scientific vision and under a strong leadership
- a joint effort of EU and national programmes to provide a large financial support (~ 100 M€/year) over a long period (~10 years)

FET Flagships: state of play

Two FET Flagships were selected through a bottom-up competitive call and a final selection based on the scientific and strategic assessment of the results of a 1 year pilot phase for 6 candidates.

- **Graphene**: development of the science and technologies for a new class of material beyond the era of silicon, bringing graphene and related 2D-materials, from academic labs to industry, manufacturing and society.
- **Human Brain Project**: simulation and understanding of the Human Brain to develop new diagnostic tools and treatments for brain diseases, and a new class of low-energy technologies with brain-like intelligence, such as neuromorphic computing.

FP7 has provided a ramp-up phase for their core project (10/2013-3/2015) with 54MEuro funding for each.

Digital Science and Open Access

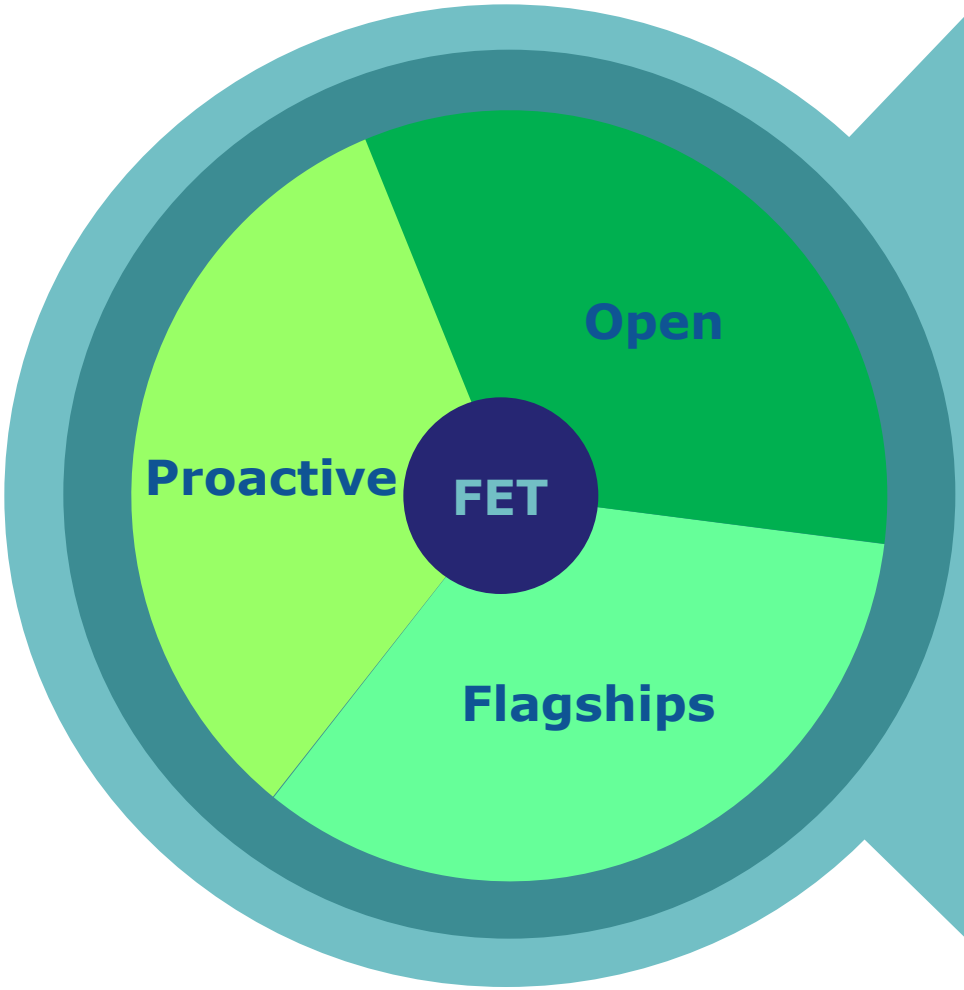
Making science and research more efficient, transparent, better valued and with higher impact through the tools, collaboration models and openness made possible by ICT.

- Initiative on Open Access in H2020:
  - Mandatory for all publications resulting from H2020 projects
  - Open data pilot for specific areas**, including FET**
  - E-infrastructure support for open access to publications and for research data management & sharing

Open access = free online access

FET as a catalyst for change: reshaping the S&T&I landscape

European Commission



New interdisciplinary synergies, new collaborations and new actors

Promoting new approaches and tools for doing science and innovation, in particular digital science

Innovation by building leadership in future technologies as a baseline for industry and spin-offs

Responsible research and innovation promoting societal debate, exchanges, ethics and diversity

FET Advisory Group (FETAG)

- Provided for in the legislative text to **give consistent and consolidated advice on relevant objectives and S&T&I priorities** during the WP preparations
- 26 members selected from an open call for candidates
- They started their work in 2014
- Specific focus areas:
  - Policies for innovation
  - Making FET effective
  - Long-term vision for FET
- **See** **http://ec.europa.eu/digital-agenda/en/future-emerging-technologies-advisory-group-fetag**

Consultation

European Commission

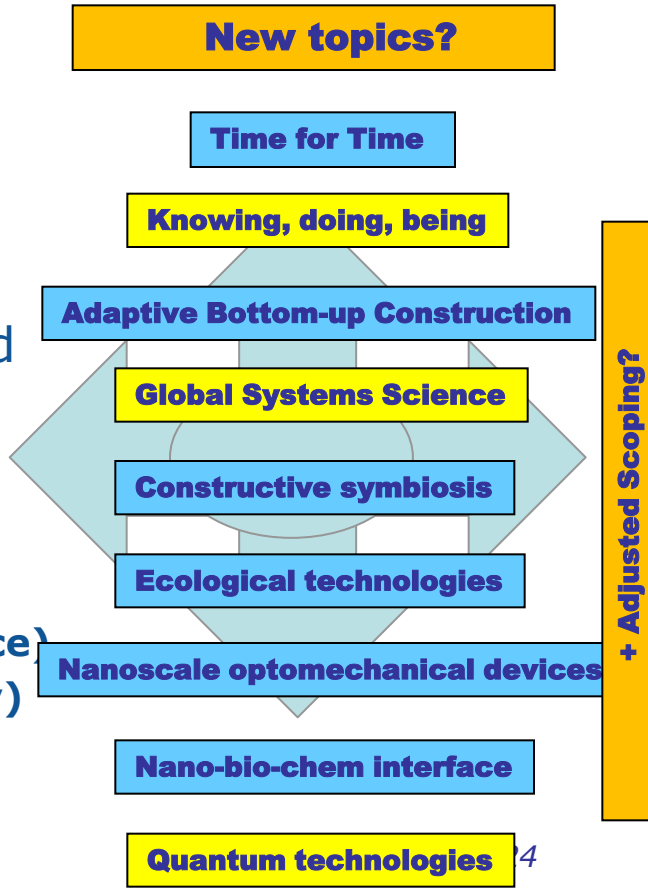
Launch a new on-line consultation on future FET proactives

Objective: Identify new candidate topics and provide any update on the 9 previously identified research domains

Reaching-out to get input from a wider range of R&I communities as well as key institutionalised stakeholders at European and national levels.

+ getting input on potential 'Implementation modalities' like:

- **Collection of projects (e.g., for exploration)**
- **Single large project (e.g., for increased coherence)**
- **ERANET Cofund (e.g., to implement a MS priority)**
- **Prize (to mobilise on specific target)**
- **CSA with specific strategic purpose (e.g., to prepare for impact or transfer)**



http://ec.europa.eu/digital-agenda/en/content/consultation-new-fet-proactive-topics

Open FET consultation on future call topics

See

http://ec.europa.eu/digital-agenda/en/content/consultation-new-fet-proactive-topics

FETOPEN-2-2014: Coordination and Support Activities

European Commission

FETOPEN 2: Coordination and Support Activities 2014

Specific challenge: The challenge is to make Europe the best place in the world for collaborative research on future and emerging technologies that will renew the basis for future European competitiveness and growth, and that will make a difference for society in the decades to come.

Scope: Proposals shall address one of the following topics:

***FET Observatory**: identifying new opportunities and directions for FET research*

***FET Communication**: communicating on FET projects and activities*

***FET Exchange**: structuring an emerging FET-relevant topic and communities*

***FET Conference**: supporting the organisation of the third FET Conference*

***FET Prizes**: identifying suitable areas for prizes and competitions in FET*

***FET Impact**: Assessing the impacts of the FET programme*

Project size: 0,3 to 0,5M€ per topic, up to 1M€ for FET Conference

Budget & deadline:

- 3M€ -> Deadline: 30/9/2014 at 17:00:00, Brussels time

FET Observatory CSA

a) FET Observatory: identifying new opportunities and directions for interdisciplinary research towards new and visionary technology of any kind, combining evidence from FET (e.g., portfolio analysis) and other sources, as well as by broad and open stakeholder engagement, in particular through on line tools.

(at most one proposal will be funded)

FET Communication CSA

b) FET Communication: collecting, aggregating and disseminating information from the entire range of FET projects and activities, and using an appropriate mix of channels and formats, including activities to reach stakeholders well beyond the research communities (including the public at large), and visibility at well-selected events.

(at most one proposal will be funded)

FET Exchange CSA

c) structuring an emerging FET-relevant topic and the interdisciplinary communities around it. This shall include research roadmapping, stimulating learning and exchange (possibly with related initiatives worldwide) involving the appropriate range of disciplines and actors such as young researchers and high-tech SMEs, and broader stakeholder engagement.

FET Conference CSA

d) FET Conference: supporting the organisation of the third European Future Technologies Conference and Exhibition (see http://www.fet11.eu/). The conference shall foster a dialogue between science, policy and society on future and emerging technologies, showcase progress, seed new ideas across disciplines and involve high-potential actors that can reshape the future. Proposals will address pre-conference communication, the local organisation, participant assistance and post-conference follow-up. The event shall take place late 2015 or early 2016.

(at most one proposal will be funded)

FET Prizes CSA

e) FET Prizes: Identifying suitable areas in which prizes and competitions can boost FET research and increase its impact. Actions shall aim to identify a diversity of such areas, investigating for each of them the rationale, competition objectives, target communities (possibly including youngsters) and organisational aspects of running the competitions.

(at most one proposal will be funded)

FET Impact CSA

f) FET Impact: Assessing the direct and indirect impacts of the FET programme on the science and technology landscape and its perception by individuals and society. Proposals must indicate a framework of key performance indicators, a systematic assessment methodology and perform the required data collection and analysis, in line with the overall mission of FET.

(at most one proposal will be funded)

FET CSA in WP14-15: Impacts

- European thought-leadership on new and emerging technologies with a strong engagement of scientists, citizens, innovators and policy makers.
- Improved long-term innovation potential in Europe both from the abundance of novel ideas and the range of actors ready to take them forward.
- Improved readiness across Europe to engage in silo-breaking research collaboration and to take up new research and innovation practices.
- Improved understanding of impact mechanisms for long-term science and technology research.

European Commission

FETOPEN 3 : Coordination and Support Activities 2015

Specific challenge: The challenge is to make Europe the best place in the world for collaborative research on future and emerging technologies that will renew the basis for future European competitiveness and growth, and that will make a difference for society in the decades to come.

Scope: Proposals shall address one of the following topics:

***FET Exchange**: structuring an emerging FET-relevant topic and communities*

***FET Take-Up**: actions for stimulating take-up of FET research results towards impact and innovation*

Project size: 0,3 to 0,5M€ per topic

Budget & Deadline:

- 1,5M€ -> Deadline: 31/3/2015
- 1,5M€ -> Deadline: 29/9/2015

Afternoon round tables

Theme	Room	Host
Observatory	0/S1	Walter
Communication	0/S5	Aymard
Prizes	0/S9	Panos
Impact	0/S5	Roumen
Conference	0/S1	Pepe
Exchange	0/S9	Julian

European Commission

H2020 website:
http://ec.europa.eu/programmes/horizon2020/
Participant portal:
http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/index.html

FET Work Programme call text :
http://ec.europa.eu/research/participants/portal/doc/call/h2020/common/1587754-02._fet_wp2014-2015_en.pdf

Get Inspired from our latest newsletter:
http://ec.europa.eu/digital-agenda/en/news/read-our-fet-newsletter-edition-may2014

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