



# European Leadership through Disruptive Technologies

Future and Emerging  
Technologies towards 2030

European Parliament,  
7<sup>th</sup> March 2018

## Summary

On the 7th of March 2018, the European Parliament members Mrs. Patrizia Toia and Mrs. Isabella De Monte (respectively vice-chair and member of the European Parliament's ITRE Committee) hosted the event "European Leadership through Disruptive Technologies: Future and Emerging Technologies (FET) towards 2030".

*Future and Emerging Technologies (FET)* is a unique programme within Horizon 2020 (H2020). FET is aimed at opening radically new technological frontiers - a European stepping stone for future technological leadership. It supports high-risk multidisciplinary collaborations among Europe's most creative and visionary researchers, engineers and innovators.

The two **major conclusions** from the event were:

- ensure the continuation of the FET programme with all its complementary schemes (FET Open, FET Proactive, FET Flagships) in FP9;
- guarantee adequate funding for the FET programme, which should be increased to match the high demand of the R&I communities in the programme.

The event gathered more than 140 delegates from Member States and Associated Countries, European institutions, academia, industry, research and industrial associations, as well as representatives of the FET Advisory Group and the FET Flagship Interim Evaluation Committee.

The focus of the discussion was on (1) how to reclaim Europe's position as the cradle of science-driven technological innovation, and (2) how to secure solid prospects for FET; in the post-H2020 EU research and innovation programme (FP9).

**FET Success Stories** illustrated the *key features* that make FET a unique European success story and that should be maintained at the heart of it:

***Scientific excellence,  
long term vision,  
radically novel technologies,  
multi-disciplinary collaborations,  
disruptive and transformative innovation.***

**FET in numbers:** A recent study (<https://tinyurl.com/yawd23z9>) assessed the impact of 224 finished FET projects (FP6 and FP7). The findings show that:

- 83% of FET projects are 'radically new': no similar publications could be found in the 5 years before and these publications are highly-cited in multiple disciplines. Industry participated in 33% of research papers.
- 67% of reported results from FET are unexpected, rather than planned.
- In 66% of FET consortia there are new partners and 17% are entirely new.
- 40% of projects had at least one partner from industry and 12% produced a spin-off.
- FET projects let researchers branch into entirely new directions of investigation, often changing their career path.

At the event a round table on "*The FET Programme towards 2030*" discussed the complementary measures necessary to maximise the technological impacts of FET frontier research.

## KEY RECOMMENDATIONS

To achieve industrial leadership in Europe, the European Union should invest in the process to transform science into technology and knowledge into exploitable results and new key enabling technologies. Evidence shows that the Horizon 2020 FET programme, with its unique combination of multidisciplinary collaborations, long term vision, novel technologies, disruptive innovation and scientific excellence is particularly well-suited to achieve this objective.

The European Union should continue supporting FET in the next framework programme, with increased funding, which should surpass the previous framework programme, in order to continue ensuring major advances in science and technology.

The FET programme structure is based on three complementary schemes (FET Open, FET Proactive, FET Flagships) that combines bottom-up open R&I with a top-down focus on emerging technologies. The balance between the research and innovation programmes at different scales not only allows to capitalise quickly on technological breakthroughs (e.g. through spin-offs) but also to build critical mass to transform entire industrial and societal sectors. This cannot be achieved by a purely bottom-up approach.

Freedom in science and innovation is a crucial asset for the progress of Europe. Through open participation from all disciplines, its bottom-up approach, and flexible programme management FET is a powerhouse for breakthrough technologies and paradigm-changing ideas, creating new generations of innovators in Europe.

FET offers unique opportunities to start-ups and high tech SMEs to collaborate with excellent research communities in high risk projects, and deliver disruptive technologies that may change the world's future. The collaborative dimension in FET should be preserved as a means to foster technological innovation.

The FET Flagships are the sole mission scheme that can address major science-driven challenges where technological innovation is risky, paradigm-changing and achievable solely through mutual support at European and national scale. They should be maintained as complement to the more societal-driven missions proposed for FP9.

### Organized by EFFECT Project



Funded by the HORIZON 2020 FET-Open Programme

EFFECT aims to enhance visibility and impact of FET research and to stimulate debate and collaboration among multiple stakeholders through dedicated community building and stakeholder engagement activities.

[www.fefx.eu](http://www.fefx.eu)

### Hosted by

**Patrizia Toia**, Vice-Chair ITRE Committee, European Parliament

**Isabella De Monte**, ITRE Committee, European Parliament

### Event Speakers

**Khalil Rouhana**, Deputy Director General DG CONNECT, European Commission

**Jerzy Langer**, Former FET Advisory Group Chair, Polish Academy of Sciences

**Maria Chiara Carrozza**, Interim Evaluation of Horizon 2020 FET Flagships Chair, Scuola Superiore Sant'Anna di Pisa

**Dermot Diamond**, FET Advisory Group Co Chair, INSIGHT Centre, National Centre for Sensor Research

**Daniela Corda**, FLAG-ERA Board of Funders Co Chair, Director Institute of Protein Biochemistry - CNR

**Annika Thies**, EARTO member, Helmholtz Association

**Paul Lukowicz**, Head of the Embedded Intelligence group at DFKI

**Olivier Frey**, Head of Technologies and Platforms, InSphero AG