



# **HORIZON 2020 - Future & Emerging Technologies (FET)**

## **Work Programme 2018-2020 & FET Flagships**

Lisbon, 14 December 2017

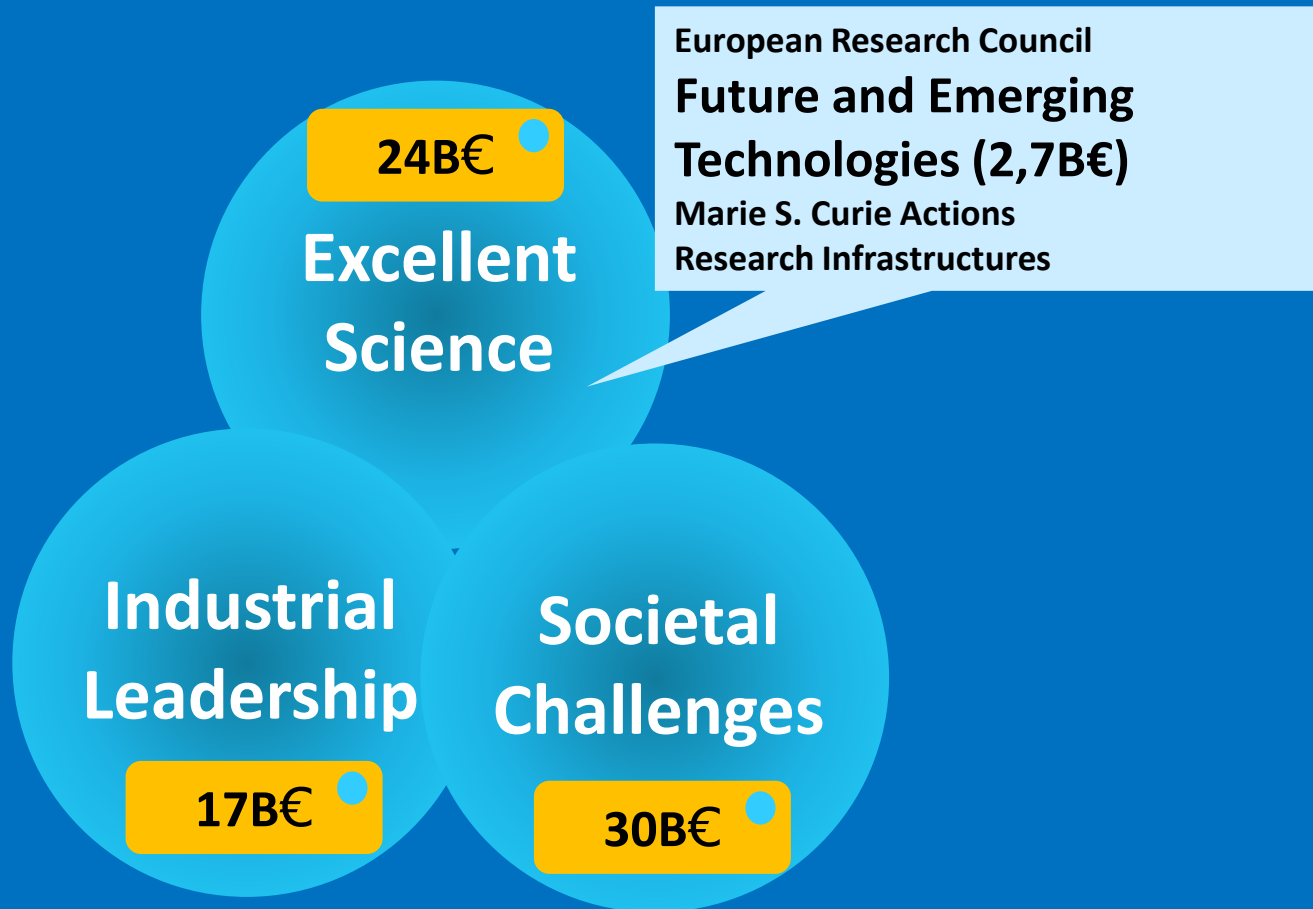
# **FET Flagships in Horizon 2020**

Wide Hogenhout

Flagships unit

DG Connect, European Commission

# Horizon 2020



# FET Mission



*To turn Europe's  
excellent  
science base  
into a  
competitive  
advantage...*

*...by uncovering  
radically new  
technological  
possibilities*

# FET Intervention logic

## FET Open

*Testing early ideas*

*A few groups*

*No traced exploitation path*

## FET Proactive

*Making the case for a new paradigm*

*Interdisciplinary community*

*Emerging R&I ecosystems*

## FET Flagships

*Advance the technology to address a challenging unifying goal*

*Committed large scale partnership*

*Gradual shift towards a European Innovation engine*

# FET Flagships

## What are they?

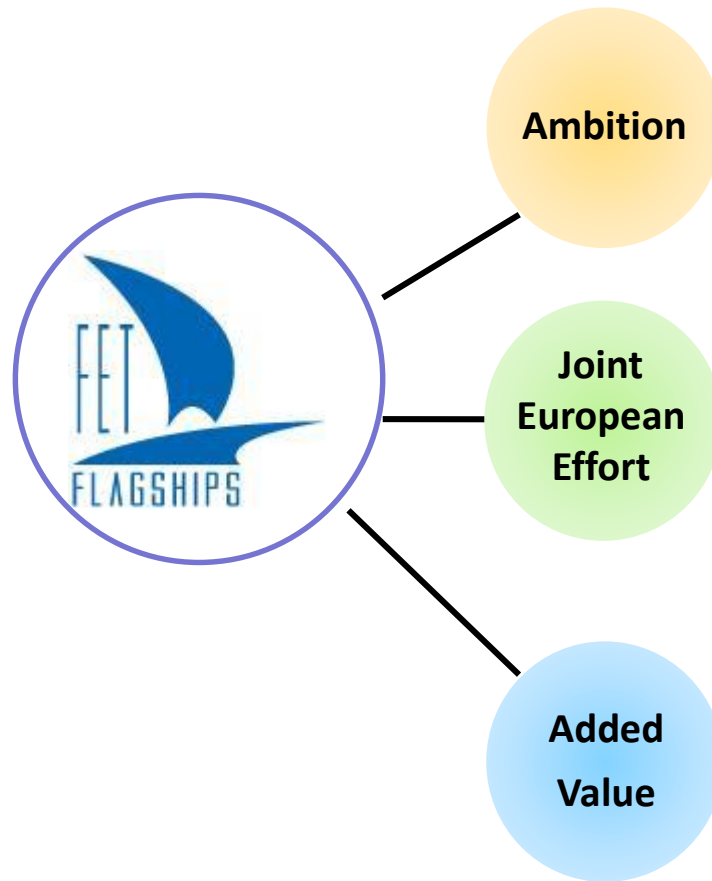
- Science-driven, large-scale research initiatives built around an ambitious unifying vision
- grand S&T challenges requiring interdisciplinary cooperation and involving academia and industry
- convert scientific advances into technology developments: from lab to the market place

**~ 1 Billion Euro**

**~ 10 year duration**

Flagships are implemented in close cooperation between the European Commission and the Member States

# What do they bring?



# EU added value

**Unprecedented  
S&T Collaboration**



**Innovation**



**International  
Collaboration**



**Talents in  
Europe**



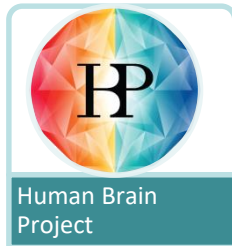
**New  
Partnership**



# Board of Funders

National delegates mandated to speak on behalf of their country regarding financial support to the FET Flagships

- Possibly accompanied by experts in the topics to be addressed in a particular meeting.

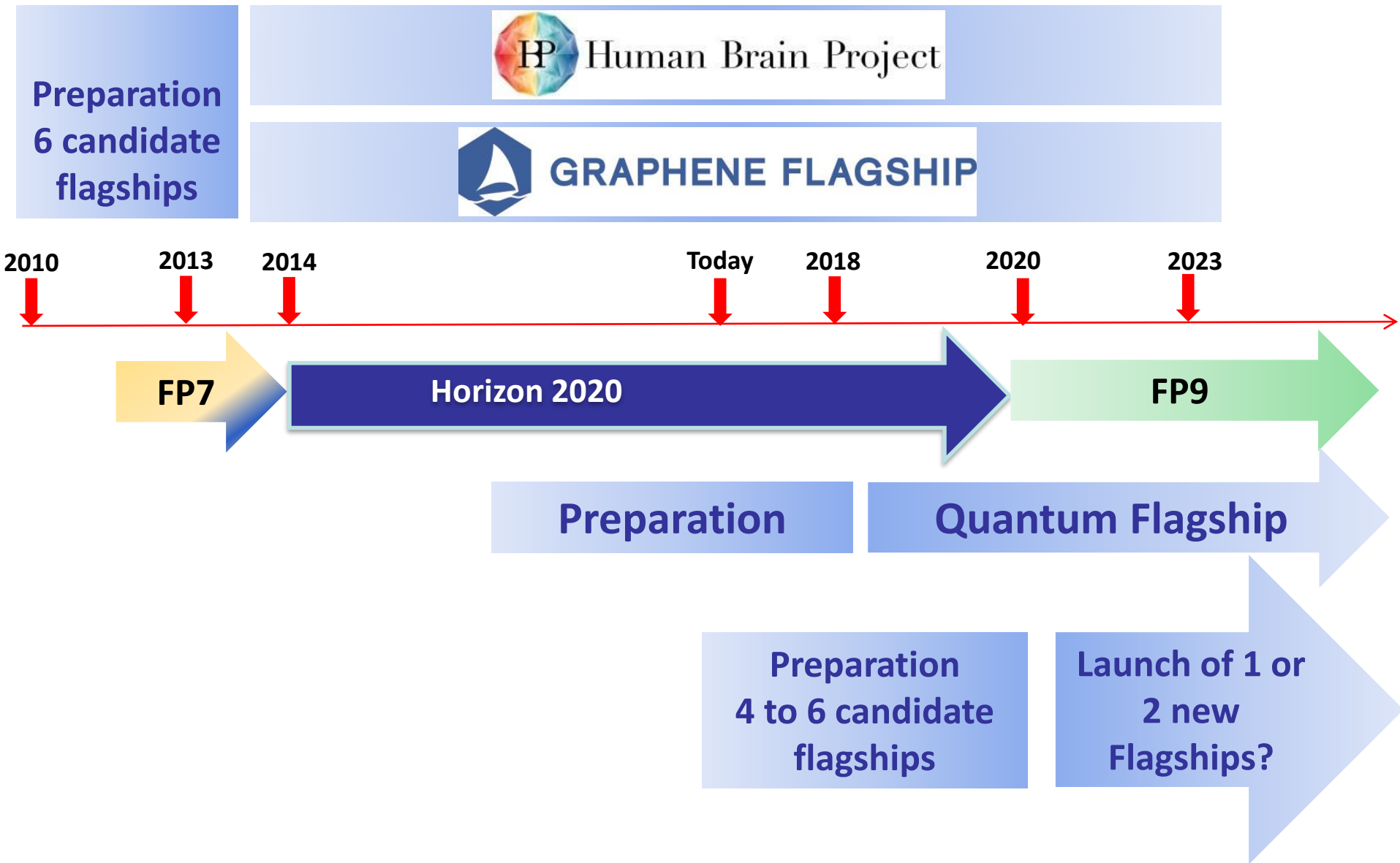


## Objectives

- Exchanging information on the overall direction and strategy of the FET Flagships
- Fostering synergies
- Programming activities in support of the flagships
- Linking with innovation policies
- Fostering INCO



# Flagships state of play



# Flagships

## Interim Evaluation



### FET FLAGSHIPS Interim Evaluation

#### Members of the Evaluation Panel

Marie Claire Carrozza (Chair)  
Charlotte Brogren  
Ruth McKernan  
Matthias Kleiner  
Michal Kleiber

### ■ **Mandate:**

- evaluation of the FET-Flagship instrument, and its implementation through the HBP and Graphene Flagships
- provide recommendations on implementation and governance model

Name	Position
<b>Maria Carrozza</b> (Chair)	Member of the Italian Parliament; Professor at Scuola Superiore Sant'Anna, Italy
<b>Charlotte Brogren</b>	Director General VINNOVA, Sweden
<b>Ruth McKernan</b>	Chief Executive Director of Innovate UK, United Kingdom
<b>Matthias Kleiner</b>	President of the Leibniz Association, Germany
<b>Michal Kleiber</b>	Vice-President of the European Academy of Sciences and Arts, President of the European Materials Forum, Poland

- **One year of investigation (data collection and KPIs, interviews with stakeholders, comparison with other initiatives, ...)**
- **Part of the Horizon 2020 mid-term evaluation**

# Flagships

## Interim Evaluation Recommendations



### FET FLAGSHIPS Interim Evaluation

Members of the Evaluation Panel

Michael Gahleitner (Chair)

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- ✔ Strategic Relevance of the Flagship Instrument in Setting and Implementing the European Strategy for Research and Innovation
- ✔ Increase Clarity of Purpose and Differentiation between the Flagships and other Research Instruments
- ✔ Establish a Standard Means of Assessing the Flagships based on Key Performance Indicators that Fully Reflect Purpose
- ✔ Improve Operational Management to Enhance the Budget Flexibility and Reduce Administrative Overhead
- ✔ Improve Strategic Management to Enhance Openness of the Flagships towards Adopting New Directions
- ✔ Improve Coherence with other Horizon 2020 Activities
- ✔ Improve the Process of Selecting Flagships
- ✔ Improve Engagement with National Initiatives

# What do we take from the report

- ✓ **Short term : on going flagships**
  - ✓ **Improve set of KPIs in running flagships**
  - ✓ **Providing flexibility & reducing overhead by adopting 2 years reporting cycle & moving to a 3 years SGA in WP2018-2020**
  - ✓ **New directions adopted by the flagships as they progress**
  - ✓ **Further stimulate awareness raising and communication across H2020 initiatives**
- ✓ **Longer term : new flagships**
  - ✓ **Endorsement for jointly preparing new flagships with Member States & with the community**
  - ✓ **Reflecting on best model for flagships in FP9**

# Quantum Technology Flagship Preparatory phase



## April 2016

The European Commission announces a **FET Flagship initiative on Quantum Technologies**, as part of the **European Cloud Initiative**

## September 2016

The **Quantum Technologies - High Level Steering Committee** is set-up

Chair: Prof. J. Mlynek, Composition: 12 academics, 12 industrials, 1 observer

## November 2016

Start of **QuantERA** ERA-NET cofund initiative

26 countries, 36M€ transnational call with 1/3 EU money

## February 2017

First version of the **QT Strategic Research Agenda** by the QT-HLSC

## November 2017

Handing-over of the **QT-HLSC Final Report**

Updated SRA, Flagship KPIs, Governance aspects,...

# Quantum Technology Flagship Expert group's recommendations

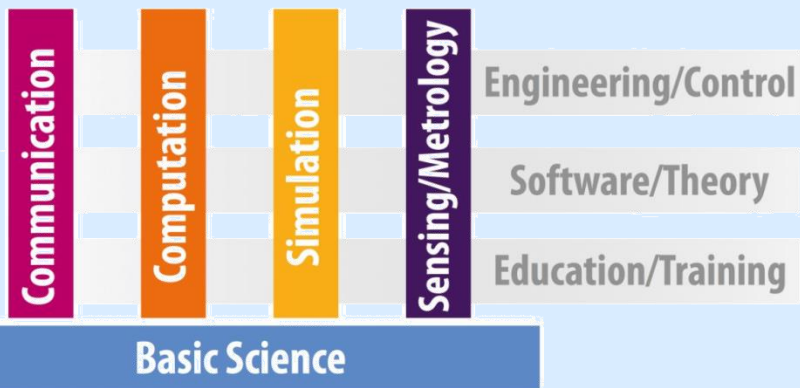


## Quantum Technologies Flagship Final Report

High-Level Steering Committee  
28 June 2017



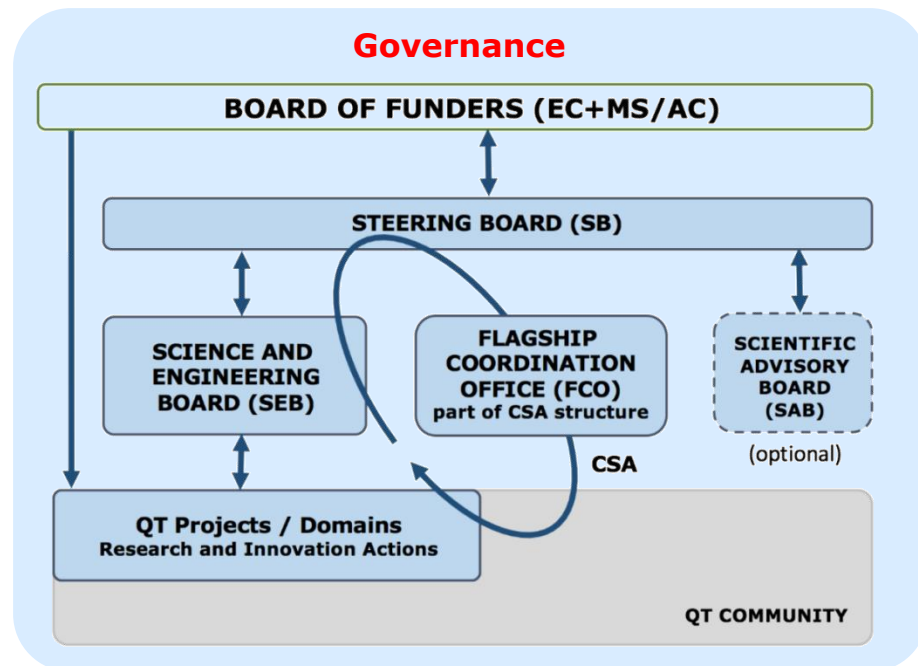
### Strategic Research Agenda



### Implementation, including Key Performance Indicators



### Governance



# Quantum Technologies

## Next calls

### Horizon 2020

## Work Programme 2018-2020

(27 October 2017)



**FLAGSHIP  
Call**

**FET**

**FETFLAG-03-2018**

130M€ RIA, 2M€ CSA  
Closing 20 Feb '18

**QKD  
Testbed**

**LEIT ICT**

**SU-ICT-04-2019**

15M€ IA  
Closing 28 Aug '18

**QKD  
relevant**

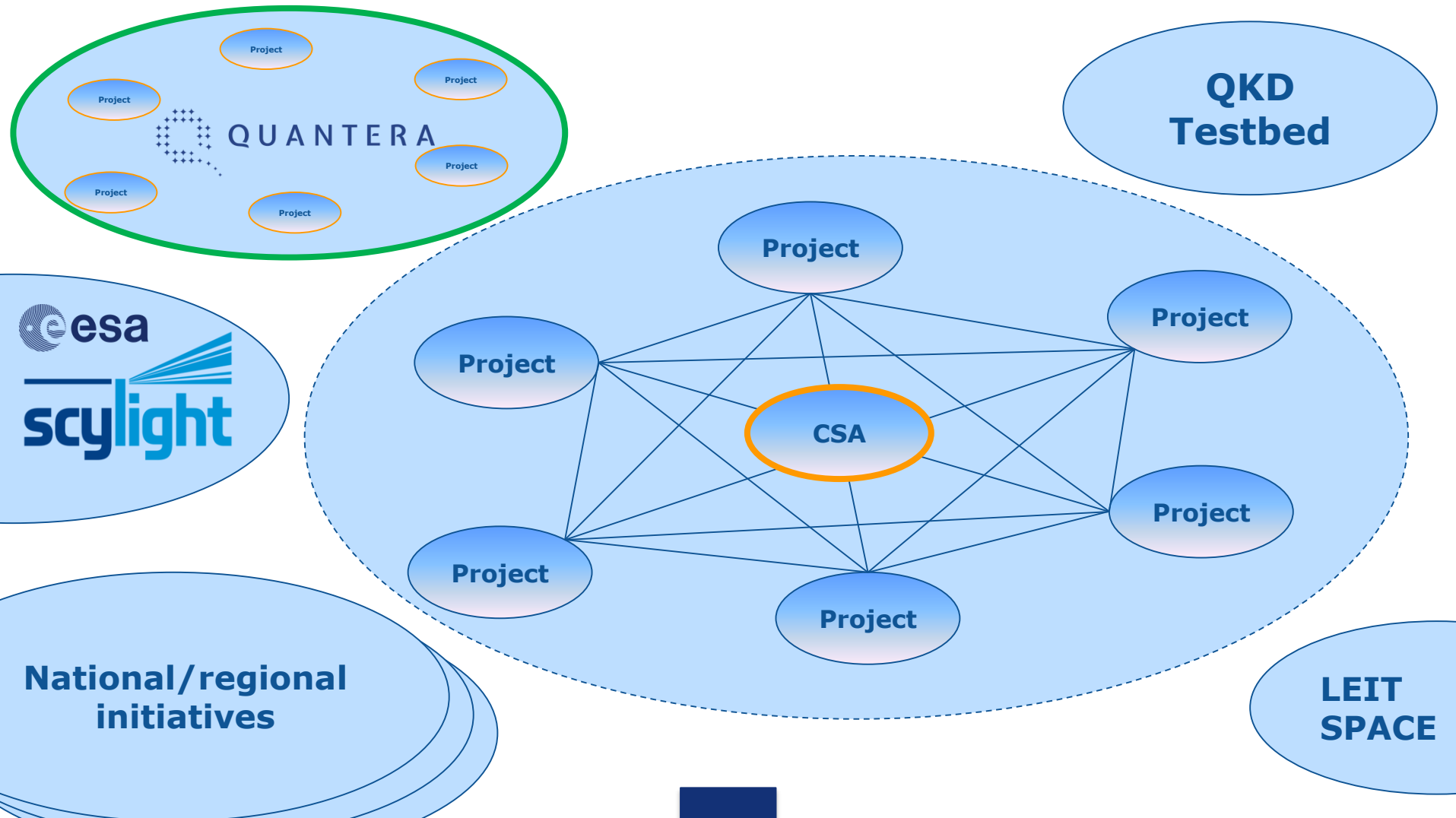
**LEIT SPACE  
SPACE-15-TEC-2018**

9M€ RIA  
Closing 6 Mar '18

# Ongoing and future QT actions

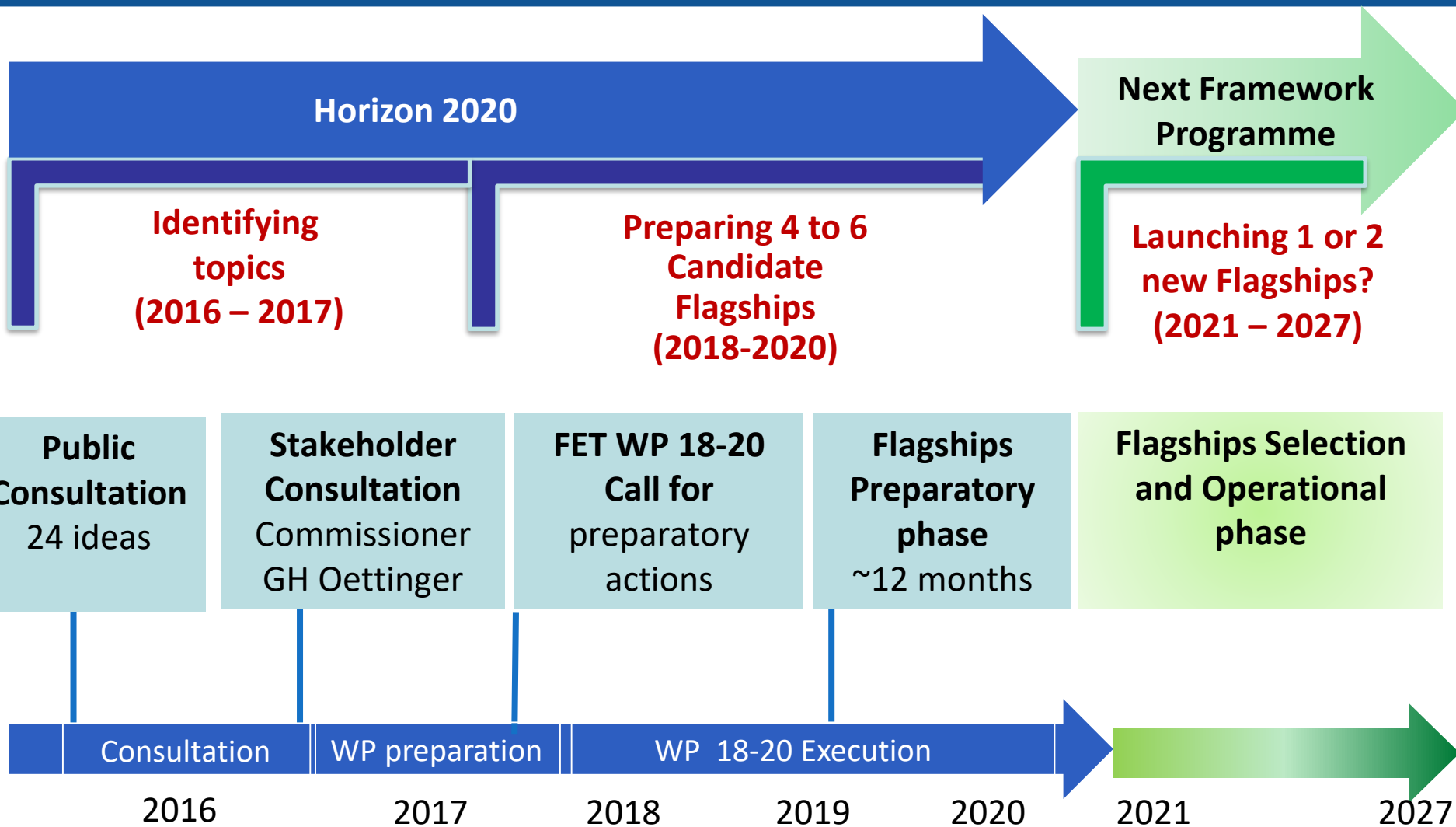


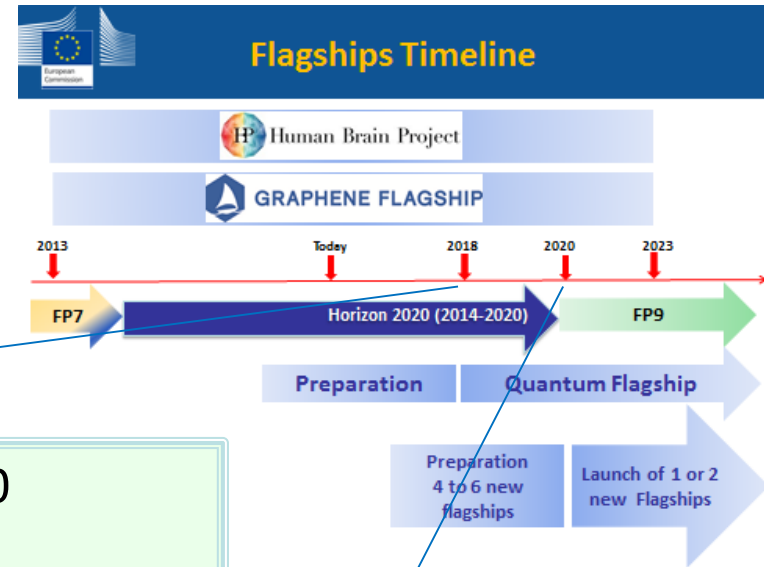
## EU Quantum Technologies ecosystem





# Preparing for new FET-Flagships





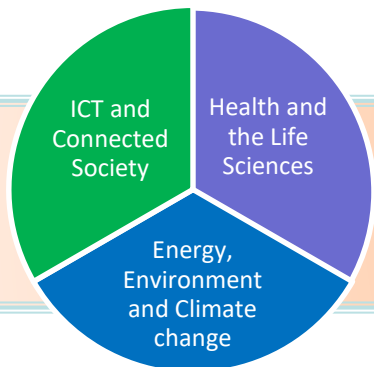
## FET Work programme 2018-2020

- FET-Flagship call
  - Call for the launch of the flagship on Quantum Technologies
  - **Call for preparatory actions for new Flagships**

# Areas & Sub-Areas

## How were they chosen?

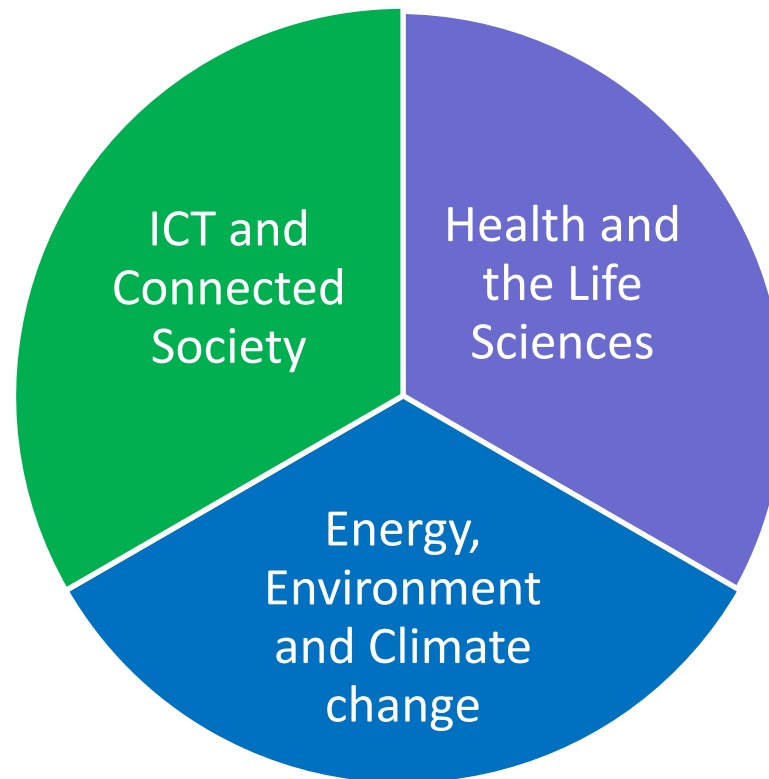
- Wide public consultation early 2016
- Roundtable with Member States and Associated countries end of 2016 to confirm national support
- After this continued interaction with country representatives to develop areas and sub-areas



Three main areas

Several sub-areas in each of these

# Areas



**Proposals must target a visionary goal in one area**

**In each area at most two CSAs**

**Two-stage evaluation**

# Areas & Sub-Areas

## ICT and Connected Society

- Smart Materials and Nanoscale Engineering
- Robotics, Interfaces and Artificial Intelligence
- ICT for Social Interaction and Culture

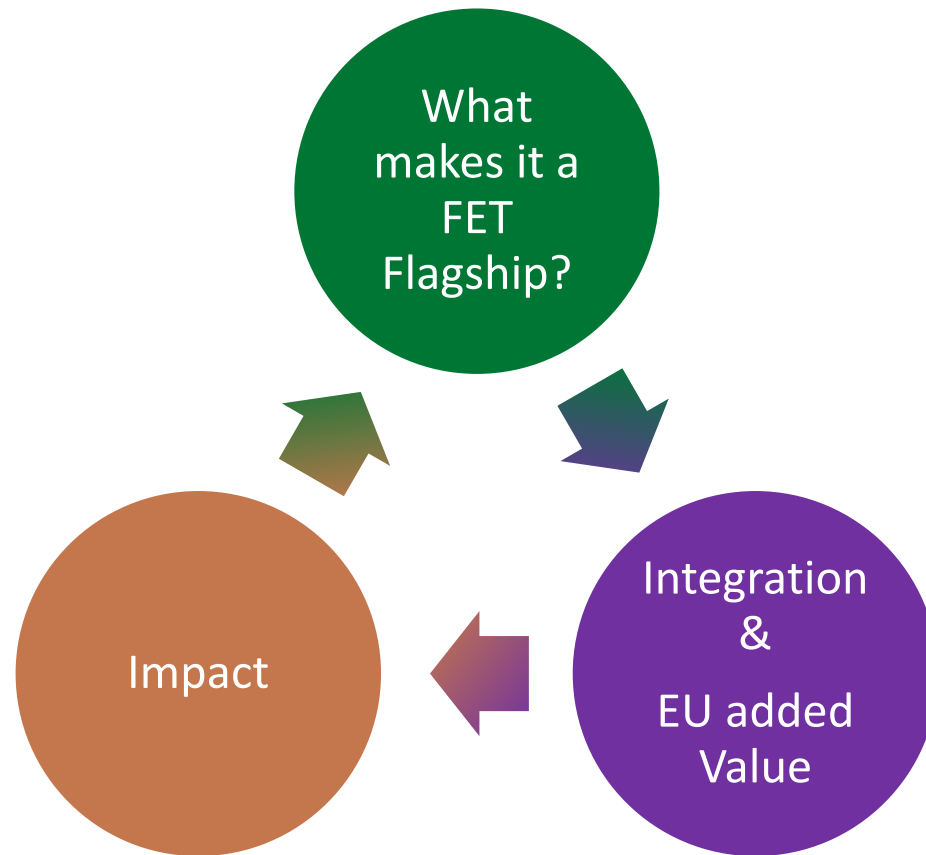
## Health and the Life Sciences

- Disruptive technologies to Revolutionise Healthcare
- Understanding Life by Exploring the Genome and the Cell

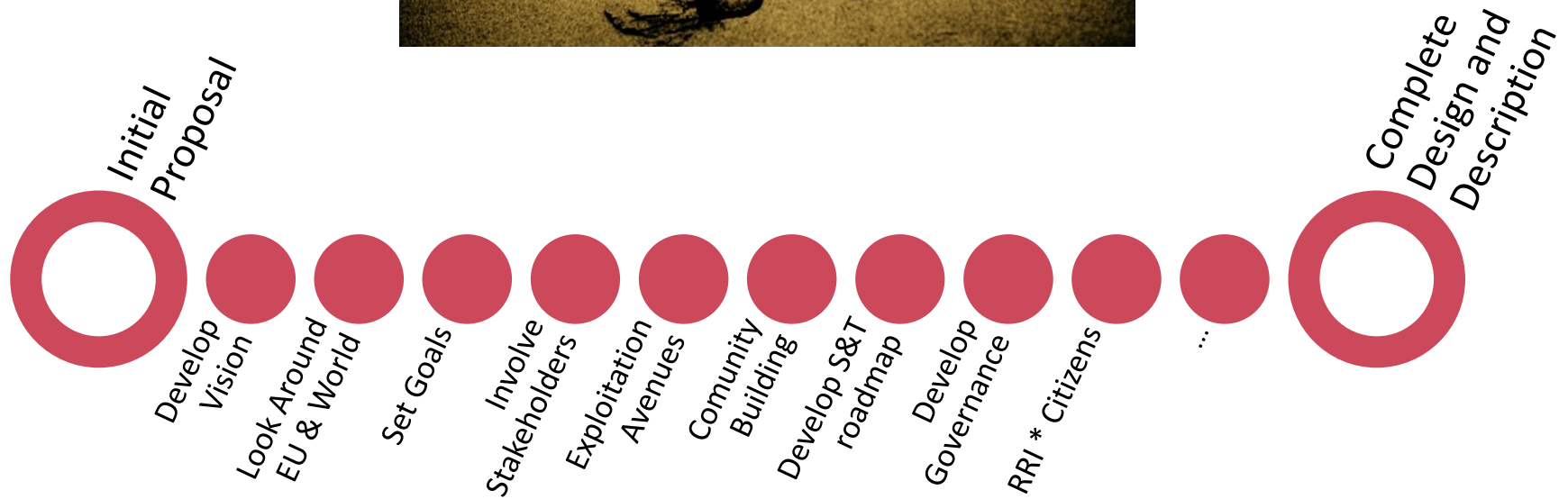
## Energy, Environment and Climate change

- Earth, Climate Change and Natural Resources
- Radically new Energy Production, Conversion and Storage devices and systems

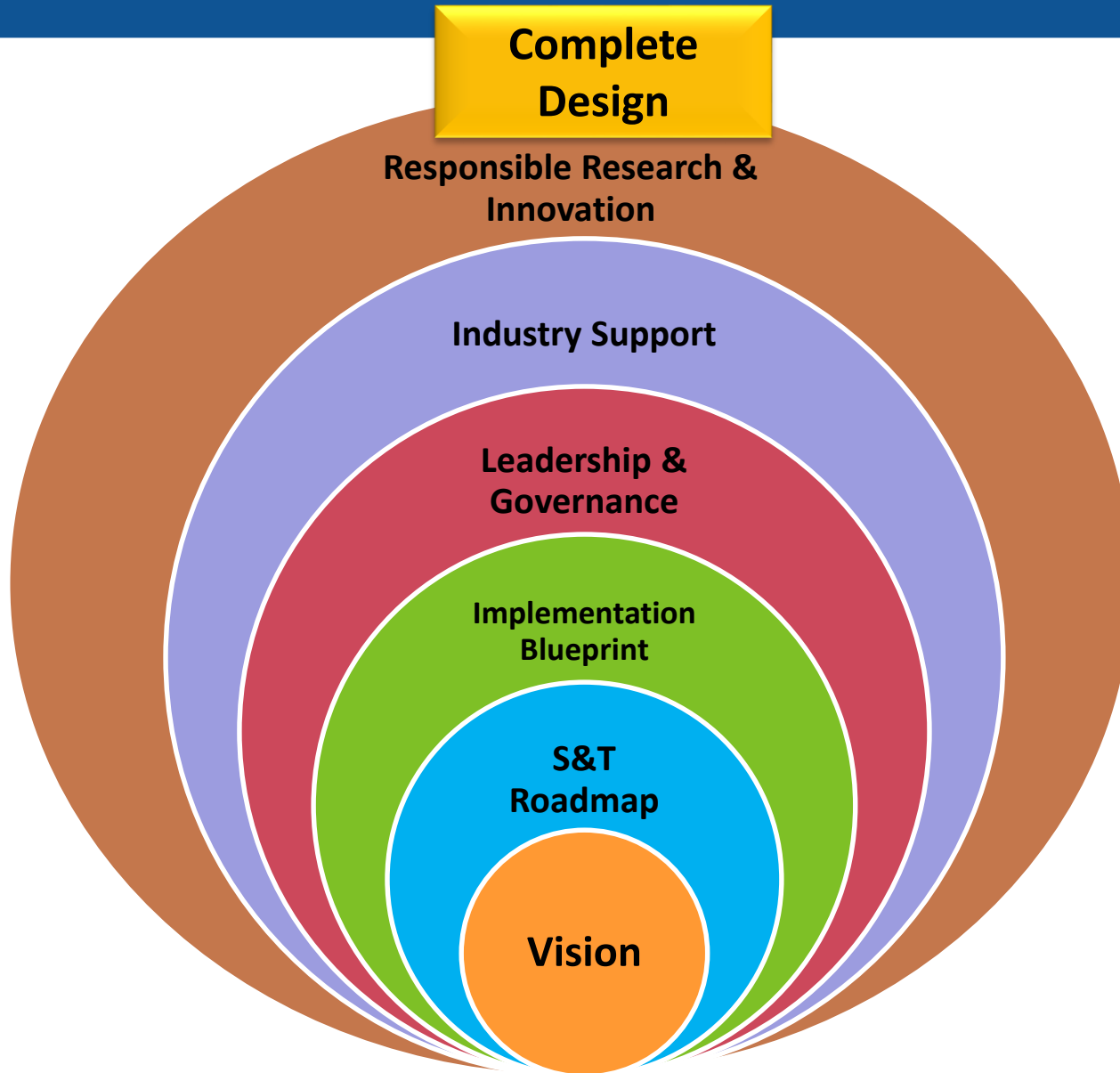
# Where to start from?



# Preparatory Action – indicative actions

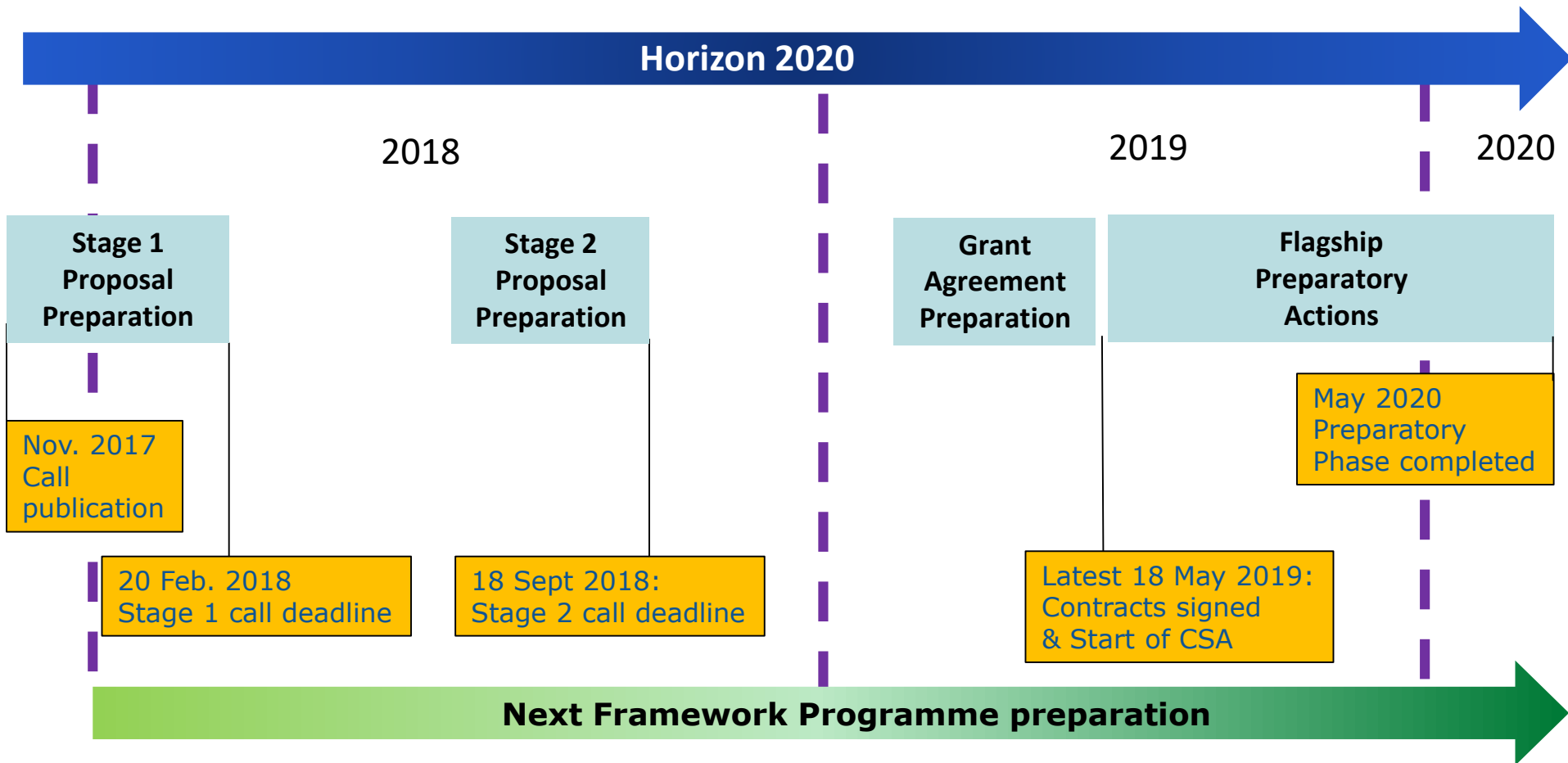


# What should Preparatory Action Deliver?





# Tentative timeline for new FET-Flagships call



# Evaluation

- 1 or 2 Preparatory Actions (CSA) to be selected per area
  - Competition within the 3 areas , no competition across areas
  - Duration of actions: 12 months; Indicative budget: 1M€ per action
- Specific evaluation criteria assessing both the flagship idea and the implementation of the preparatory action
- Two stage evaluation by S&T experts
  - Stage1: short proposal – 20 pages : the Flagship idea scientific excellence and expected impact (specific template)
  - Stage2: full proposal – 50 pages : full evaluation including implementation of the coordination action
- Thresholds : S&T 4/5; Impact 4/5; Implementation 3/5

LOGIN

FUNDING SCHEME

CREATE DRAFT

PARTIES

EDIT PROPOSAL

SUBMIT

## Step 3

### Create a Draft Proposal

#### H2020-FETFLAG-2018-2020



USER NAME

Aymard DE TOUZALIN



TOPIC

FETFLAG-01-2018



TYPE OF ACTION

CSA

TUE

20

DEADLINE (Brussels Local Time)

February 2018 17:00:00

98

days left until closure

Configuration OK

[Download Part B Templates](#) [Visit our 'How to' user guide](#) [Visit our 'H2020 Online Manual'](#)

### Create a Draft Proposal

Please enter the following information to create a draft proposal. Please note that fields marked with a star (\*) are **mandatory**.

It is highly recommended to submit your proposal as early as possible and at least 48 hours prior to the deadline of this call. This will avoid being confronted with incompatible local IT configuration settings shortly before the call deadline, when insufficient time would be left to handle it. There is no reason in delaying the submission for confidentiality concerns as the system does not allow any access to the proposals before call deadline or cut-off (other than to selected data that is part of the Submission and Evaluation of Proposals Assent Disclaimer).

You can submit the proposal as many times as you wish up to the deadline. Every submitted version will replace the previously submitted one.

#### Your organisation

PIC\*

Short name\*

 Search for your organisation PIC 

#### Your Role

Please indicate your role in this proposal

# Evaluation criteria – Stage 1

## Excellence

### Excellence

Threshold: 4/5

- Degree of adherence to the FET Flagship concept as specified in the work programme
- Soundness of the proposed Flagship's vision, scientific concept, quality and pertinence of the objectives and of its targeted technologies and progress beyond the state-of-the-art
- Existence of excellence and critical mass in Europe to reach the Flagship goals in the long term and extent to which these are considered in the proposed Flagship

# Evaluation criteria – Stage 1

## Impact

### Impact

Threshold: 4/5

- Key benefits for economy and society based on significant advances on science and technology. This should be demonstrated by e.g. potential for S&T breakthroughs, industrial support, added value for Europe, potential for increasing European competitiveness, potential for societal benefits, etc.
- Long-lasting structuring effect on research efforts in Europe, anchor point for international cooperation and the nurturing of talent through the training of a new generation of researchers.
- Extent to which proposed Flagship creates EU added value by making use of complementarities and exploiting synergies, and enhances the overall outcome of regional, national, European and international research programmes.

# Evaluation criteria – Stage 2

## Excellence, Impact & Implementation

### Excellence

Threshold: 4/5

- Same criteria as for Stage 1

### Impact

Threshold: 4/5

- Same criteria as for Stage 1
- Contribution of the proposed CSA to a fully candidate FET Flagships initiative supported by key stakeholders (e.g. academic research communities, industry, public authorities...)
- Quality of the proposed CSA approach to disseminate the project results, and to attract large public support

### Implementation

Threshold: 3/5

- Quality and effectiveness of the CSA methodology, work plan, and coordination activities
- Quality and effectiveness of the approach to engage with relevant research initiatives in the Member States and countries associated with H2020, industry and interdisciplinary research communities, as well as initiatives at European level
- Appropriateness of the proposed CSA management structures and procedures, including risk management
- Quality of the Consortium as a whole, including complementarity of the participants and extent to which the consortium as whole brings together the necessary expertise to carry out the tasks foreseen in the CSA
- Appropriateness of the allocation of tasks and resources, ensuring that all participants have a valid role and adequate resources in the CSA project to fulfil that role

# Things to keep in mind

Level of ambition

Industrial Perspective

Openness

Interdisciplinarity

Maturity of community

*A preparatory action does not  
imply any commitment for FP9*

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/fetflag-01-2018.html>