



# *Towards the implementation of Space in Horizon 2020*

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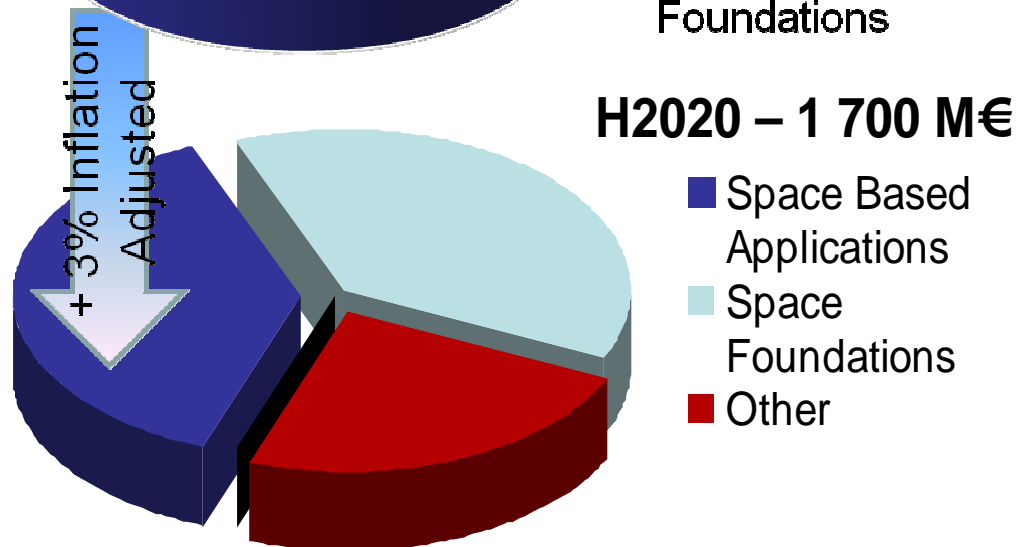
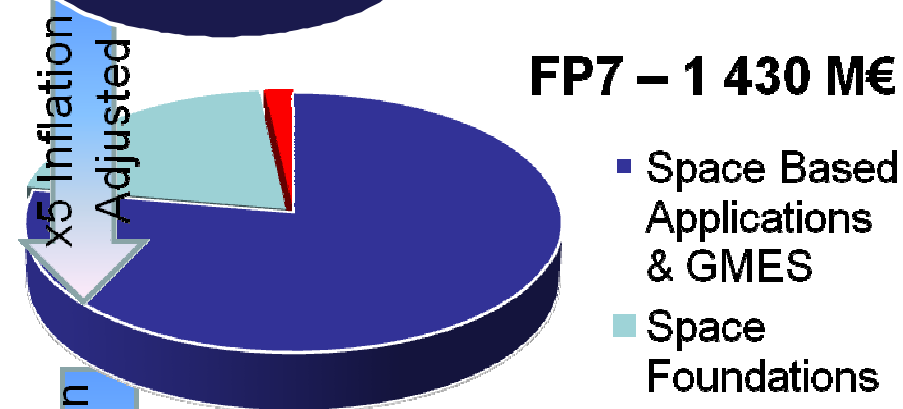
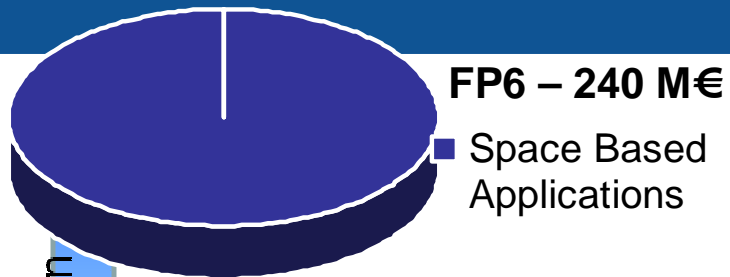
# Content

- **From FP6 – FP7 – Horizon 2020**
- **A new Approach - Structure of Horizon 2020**
- **Space in Horizon 2020**
  - Objectives
  - Implementation
- **Where are we – next steps**

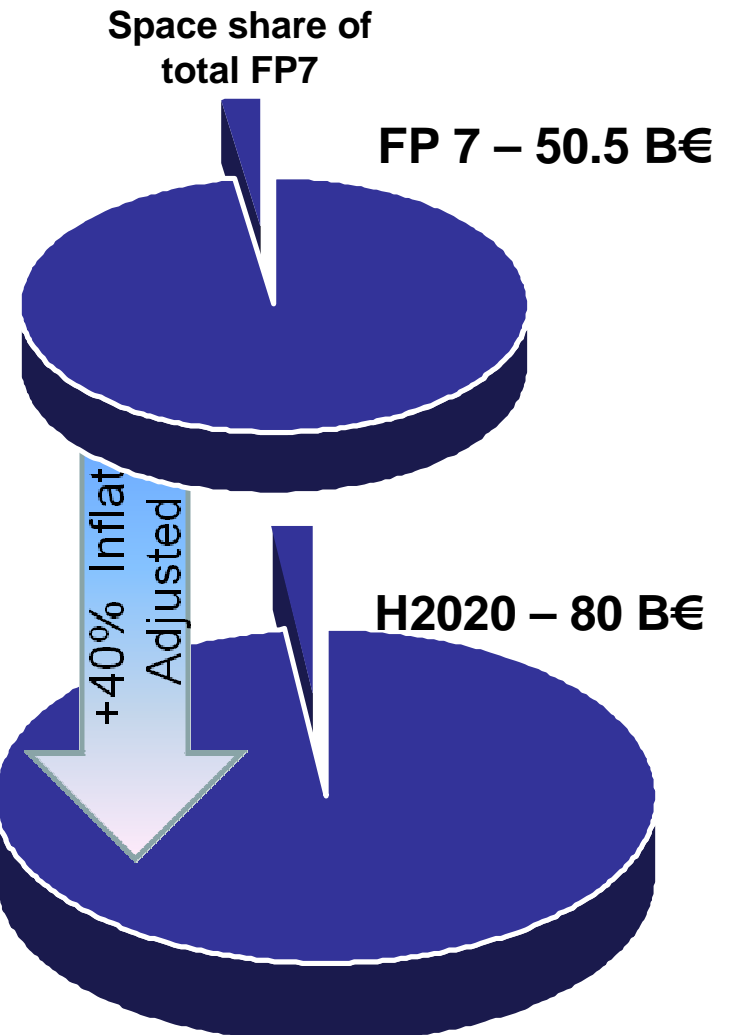
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# Introduction: From FP6 to FP7 to H2020



**Space R+D**

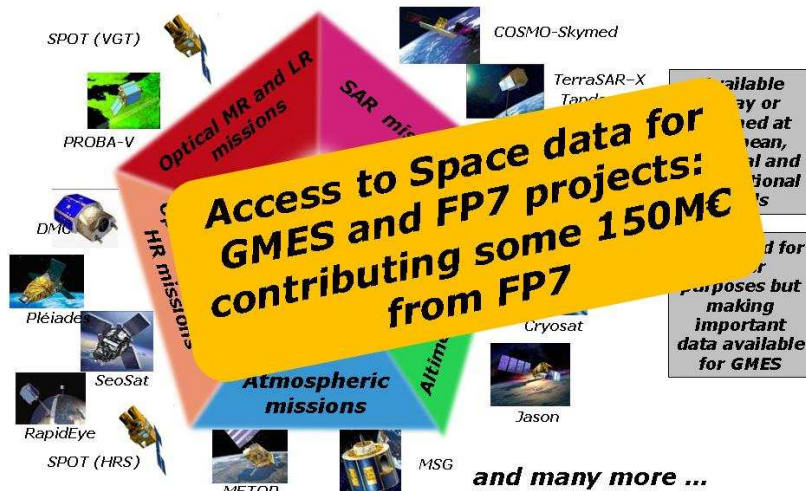


**Total R+D**

# FP7 Activities



## GMES Space Component: Contributing Mission examples



## GMES Sentinel satellites



**Contributing some 565 M€ from FP7 to ESA GMES Space Component development**

## GMES Services



### Monitoring of Earth systems



**Land**



**Marine**



**Atmosphere**

### Horizontal applications



**Security**



**Emergency**

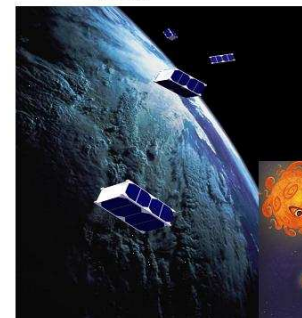


**Climate Change**

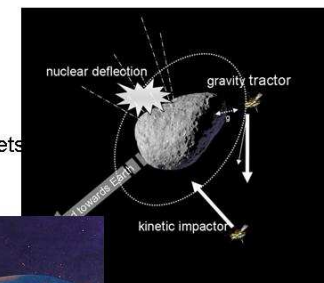
European Commission  
Enterprise and Industry

## Space Research Projects

International  
Cooperation:  
QB50



Protecting  
European Assets  
in Space:  
**MAARBLE**



Europe leading in the  
solution of Global  
problem:  
**NEOSHIELD**

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# Horizon 2020



# A new Structure

## PILLARS

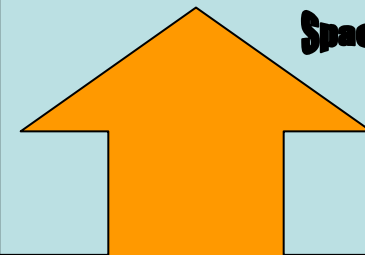
**Excellent  
Science**  
27.8 B€

**Societal  
Challenges**  
35.9 B€

**Industrial  
Leadership**  
20.3 B€

Leadership in  
Enabling and  
Industrial  
Technologies

H2020 RD&I is to  
address  
1) Societal  
challenges  
2) Competitiveness  
challenge



**Space**

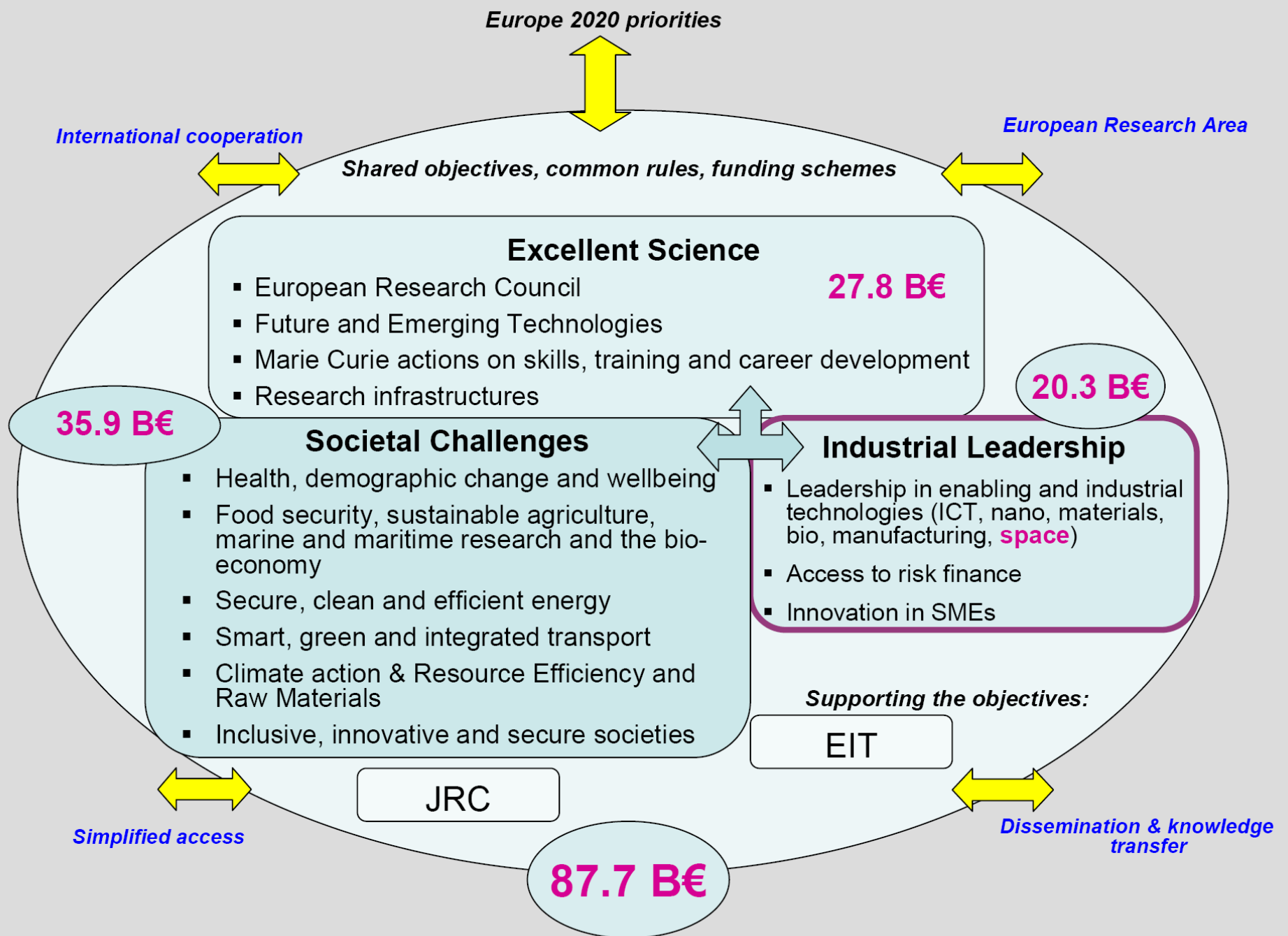
**Space**

**Space**

**Space**

**Space**

**Space**



in current price





# Industrial Leadership

Leadership in enabling and industrial technologies

- ICT
- NMP
- Biotechnology

KETs

**Space**  
**1737 M€**

Access to risk finance

Innovation in SMEs

**Space programme ~240 M€/yr**

(similar to ESA RTD programmes, or National space RTD programmes combined)

*NMP= Nanotechnologies, advanced materials and  
advanced manufacturing and processing*

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# Scope



- **...complementing** national programmes and activities [Art 180/181 TFEU].
- **EU added value: competitively selected cross-national RTD&I projects on EU scale**
- **Implements part of Art. 189** '*.....support research and technological development and coordinate efforts needed for exploration and exploitation of space*'

**Horizon 2020 does not have the ambition or budget to be...**

- .... an EU space policy
- ..... an EU space mission programme
- ..... in competition with ESA or Member States





# Objective for Space in Horizon 2020

Horizon 2020 Framework Programme proposal:

The specific objective of space research and innovation is to foster a competitive and innovative space industry and research community to develop and exploit space infrastructure to meet future Union policy and societal needs.

**Prepare** for the increasing role of  
space in the future and **reap** the  
benefits of space now





## Four objectives Specific Programme proposal

- **Enhance competitiveness, non-dependence, and innovation of EU space sector**  
The objective is to maintain a globally leading role in space by safeguarding and developing a competitive space industry and research community and by fostering space-based innovation.
  - **Enable advances in space technologies**  
The objective is to ensure the capability to access space and to operate space systems to the benefit of European society in the next decades.
  - **Increase exploitation of space data**  
The objective is to ensure more extensive utilisation of space data from existing and future European missions in the scientific, public and commercial domain.
  - **Enable participation in international space partnerships**  
The objective is to support the European research and innovation contribution to long term international space partnerships.
- + relevant space applications under Societal Challenges**
- Transport, Climate, Security,.....



# Space-enabled application



## 1) 'mature\*' space applications under **Societal Challenges**

- Transport, in particular from Galileo
- Climate, agriculture, marine and maritime, raw materials, security all benefit from GMES and other Earth Observation data

*\*Mature meaning that there is an existing user community*

## 2) 'immature' space applications under **space**

- RTD needed for services to be developed
- Applications using space data from innovative instruments
- Applications in areas not addressed by SC (space weather)



# Implementation

# to achieve objectives



*Non-exhaustive list of potential topics*

- In-orbit demonstration
- Critical technologies
- Space debris
- NEO
- Instruments/sensors
- Space robotics
- Next gen. Galileo TD
- Science data exploitation
- ISS experiments
- SatCom
- Propulsion technologies
- ..... etc .....

Objectives

Competitiveness  
Non-dependence  
Innovation

Technology

Data exploitation

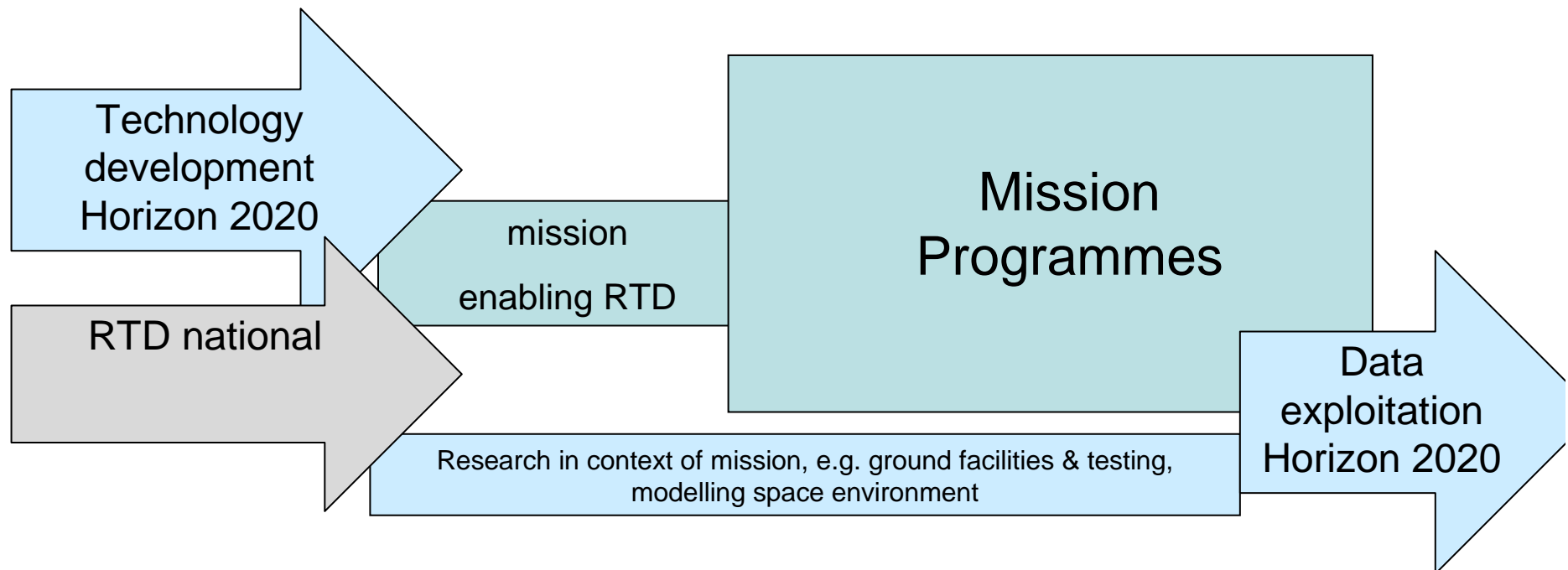
International  
partnerships



# Positioning of



# H2020 space activities



## Approach and management of risk:

**RTD environment (H2020):** risk acceptable, suitable for collaboration

=> grants

**Mission programme environment:** low risk tolerance, limited IPR sharing

=> procurement



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# Our role in H2020

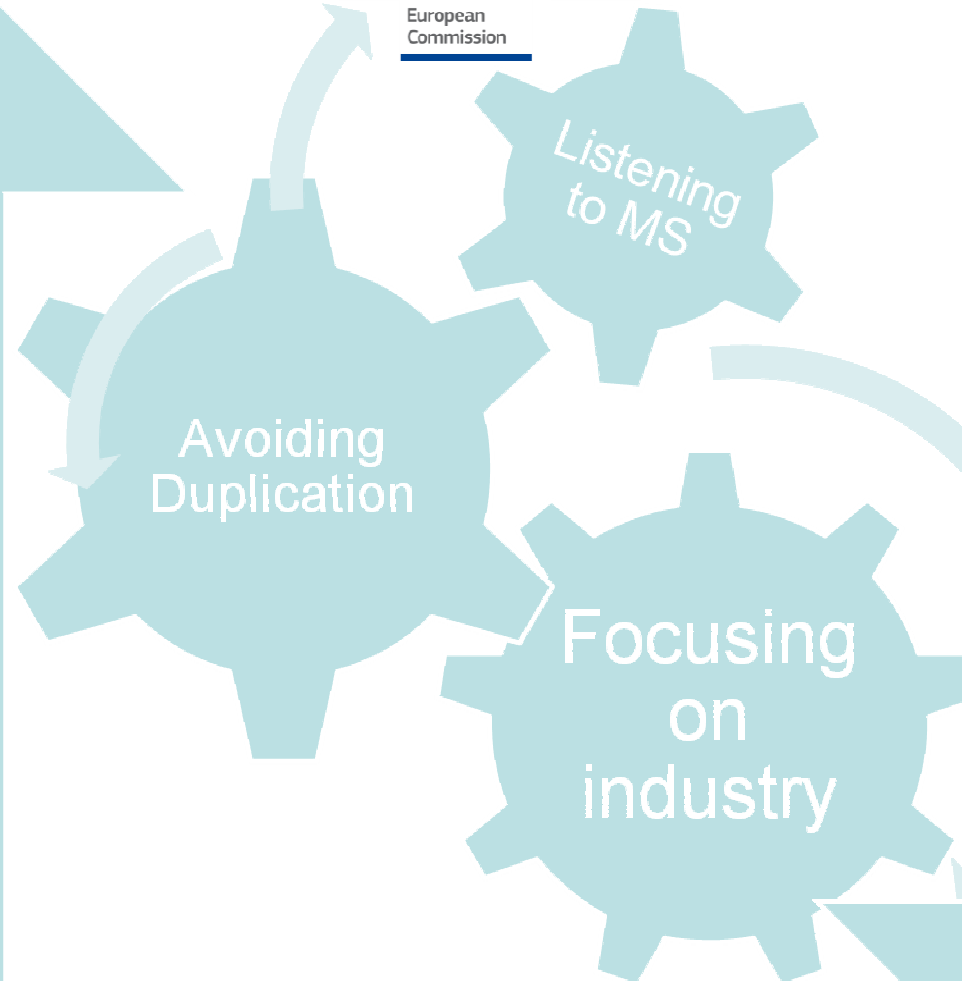


EU Funding

Open to  
ideas:  
Bottom-up

Maximum  
freedom for  
innovation

Participants



EC

Directing  
the way

Strategic  
Research  
Agendas  
Top Down

Participants

# Instruments



**Horizon 2020 has a flexible range of instruments that can be used from basic research to close to market demonstration.**

## **Basis:**

- **Open, competitive call** for all EU27
- Co funding **grants** for research (100%) and innovation(70%)
- **Trans-national (>3)** consortia
- Open to **international participation** (i.e. beyond EU)
- Link projects in multi-annual **Strategic Research Agendas**

**New in H2020: prizes, loans, pre-commercial procurement, financial instruments**



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# Horizon 2020



# Where are we?

## Commission Proposal November 2011

### Council:

PGA for Framework Programme

PGA for Rules for Participation

PGA for Specific Programme expected by November 2012

### European Parliament, ITRE committee:

Draft reports issued by Rapporteurs (Ms. Madurell for FP, MR. Ehler for RfP, Ms. Carvalho for SP)

Amendments proposed by MEPs issued

Currently: compromise amendments in ITRE

## Trilogue negotiations will start December 2012

On-going budget discussion only as part of overall MFF budget

### Commission:

In parallel: develop **Horizon 2020 implementation strategy**





# Thank you!

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