



## ***“Autonomous Road Transport & Logistics Operations”***

***IPIC 2019 - 6th International Physical Internet Conference***

***Guido Sacchetto, Policy Officer  
European Commission, DG R&I  
Unit D2 – Future Urban and Mobility Systems***

# H2020 projects resulting from MG/ART Calls 2015-2016

## ADAS & Safety & end user acceptance (MG-3.6-2015 / ART-04-2016)

- User requirements, expectations, concerns
- Next generation ADAS
- Innovative HMI
- Increased reliability, trustworthiness in complex, mixed traffic
- Cooperative interaction with other road users in mixed traffic

## Road infrastructure to support automation (ART-05-2016)

- Traffic modelling methods
- Hybrid infrastructure – design, upgrade, adaptation
- Safety performance criteria
- Guidance for road authorities

## Traffic management solutions for AD (MG-3.6-2015)

- New solutions for smooth integration of automated vehicles into traffic systems

## Projects



AutoMate  
Adaptation de scénarios  
et trajectoires TeamMate  
to enhance traffic safety  
and efficiency



# H2020 projects resulting from ART Calls 2016-2017

## Large Scale Pilots (ART-02-2016)

- Test and evaluate AD functions at SAE Level 3 and 4 (for parking, urban driving, motorways)

## ICT infrastructure for automated road transport (ART-01-2017)

- Design, implement and test ICT infrastructure for higher levels of automation (up to level 4)

## Multi-Brand platooning in real traffic conditions (ART-03-2017)

- Testing multi-brand platooning on European roads across national borders

## Urban road transport automation (ART-07-2017)

- Full scale demonstrations of fleets of autonomous mini-buses in low to medium demand areas

## Projects



# H2020 projects resulting from ART Calls 2018

## Testing, validation and certification procedures (ART-01-2018)

- Comprehensive testing, validation and certification procedures for highly automated functions for different use cases in various traffic scenarios including cross-border

## Impact assessment (ART-02-2018/RIA)

- Assessment of short, medium and long term impacts, benefits and costs of different scenarios for CCAD systems

## Support for networking activities (ART-02-2018/CSA)

- Explore ways to strengthen cooperation amongst European and international stakeholders
- Forum for European and international stakeholders of road automation

## Projects



levitate



# H2020 projects resulting from MG Calls 2018 (MG-3.3-2018)

## Driver behaviour and acceptance of connected, cooperative and automated transport

- Assess public acceptance for higher levels of connectivity and automation
- Analyze driver behaviour under different scenarios/use cases
- Estimate the effects of driver-vehicle interaction on transport safety
- Address the ethical and legal issues associated with driver and/or vehicle decision making process

- **PAsCAL**
- **DriveToTheFuture**
- **SUaaVE**
- **Trustonomy**

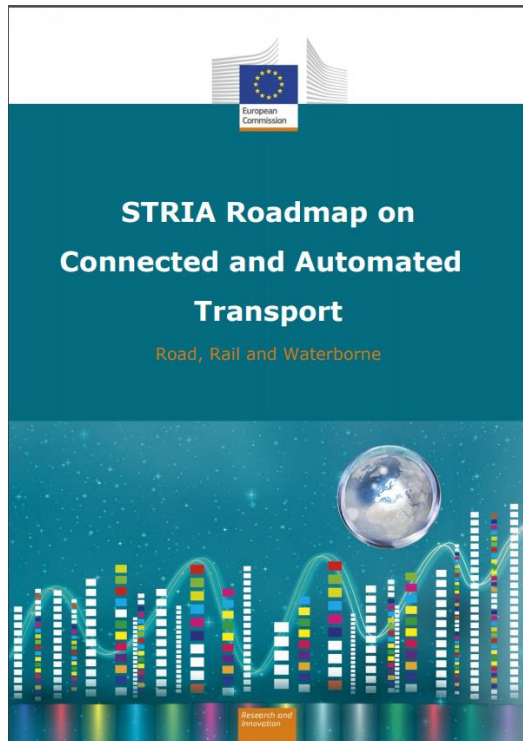
# H2020 topics 2019–2020 (MG/ART calls)

- LC-MG-1-10-2019: Logistics solutions that deal with requirements of the 'on demand economy' and for shared-connected and low-emission logistics operations
- LC-MG-1-11-2019: Structuring R&I towards zero emission waterborne transport
- MG-2-9-2019: InCo Flagship on Integrated multimodal, low-emission freight transport systems and logistics
- **MG-2-13-2020: Coordination and support for an integrated freight transport and logistics system**
- DT-ART-03-2019: Human centred design for the new driver role in highly automated vehicles
- DT-ART-04-2019: Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all
- **DT-ART-05-2020: Efficient and safe connected and automated heavy-duty vehicles in real logistics operations**
- **DT-ART-06-2020: Large-scale, cross-border demonstration of connected and highly automated driving functions for passenger cars**

# Roadmap on R&I for Connected and Automated Transport (STRIA)

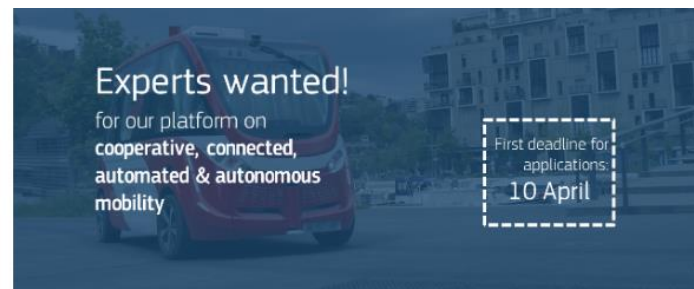


Brussels, 31.5.2017  
SWD(2017) 223 final



COMMISSION STAFF WORKING DOCUMENT

**Towards clean, competitive and connected mobility: the contribution of Transport Research and Innovation to the Mobility package**



# Horizon Europe

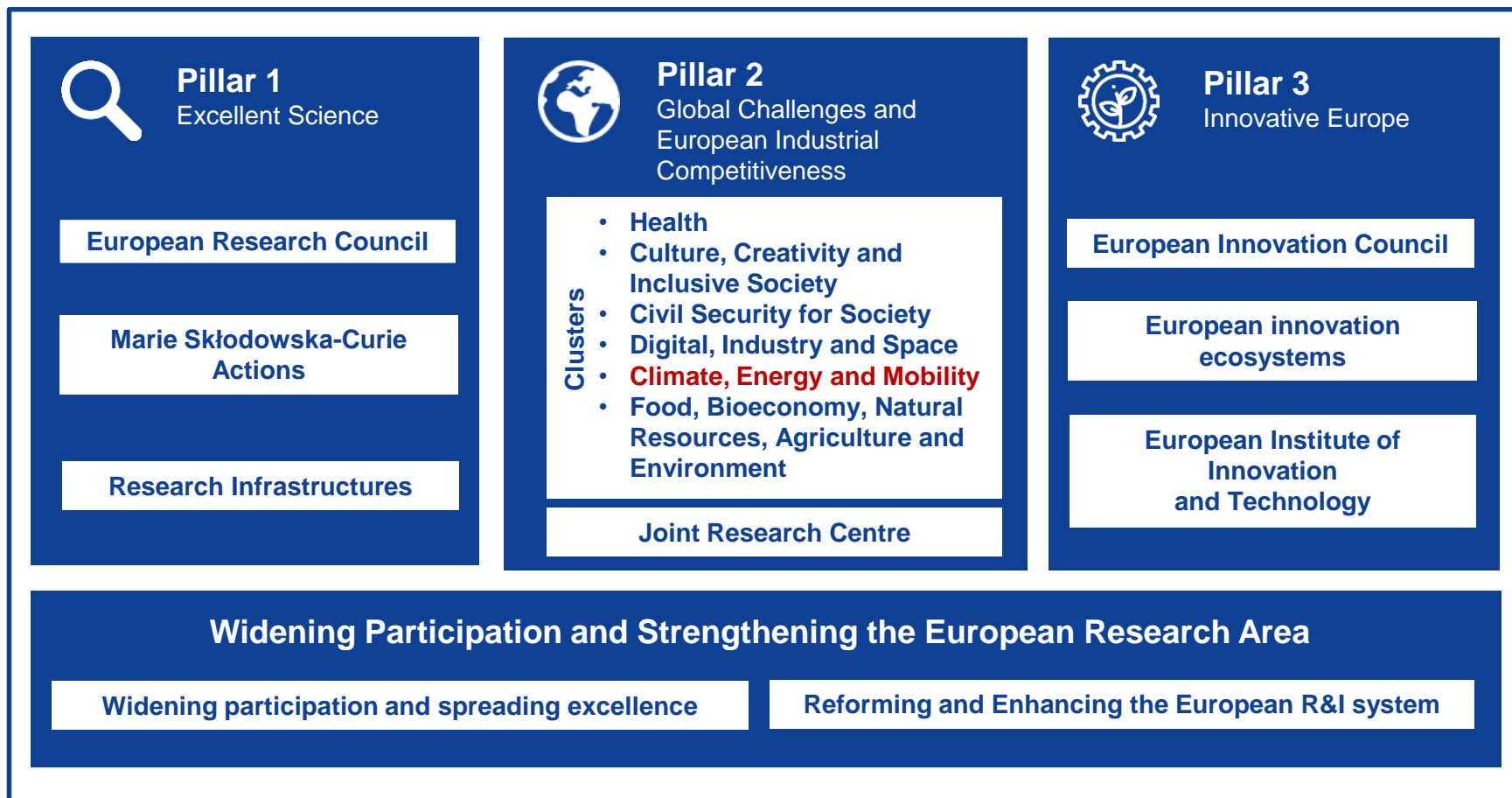
THE NEXT EU RESEARCH & INNOVATION  
INVESTMENT PROGRAMME (2021 – 2027)

#HorizonEU

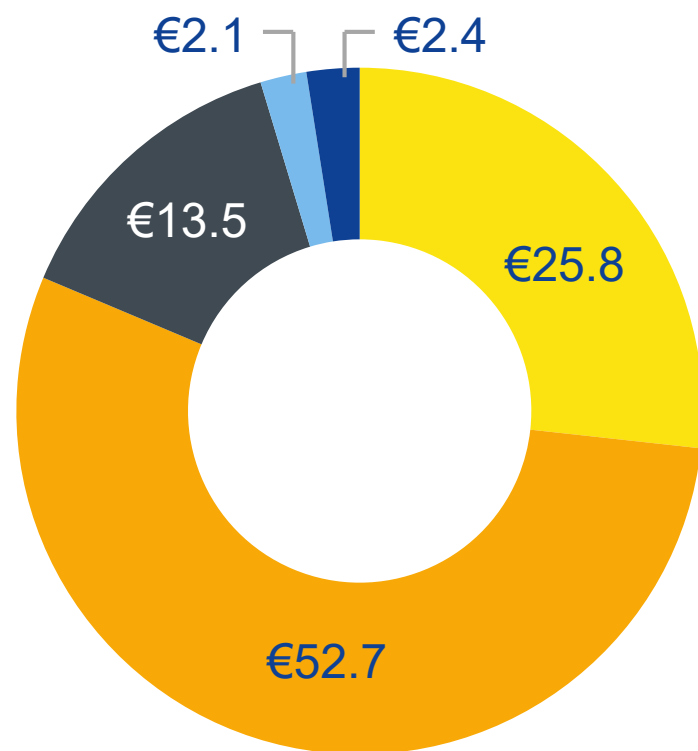




# Horizon Europe: Preliminary structure



# Commission proposal for budget: €100 billion\* (2021-2027)



€ billion  
In current prices

- Excellent Science
- Global Challenges & European Ind. Comp.
- Innovative Europe
- Widening Part. & ERA
- Euratom

\* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.

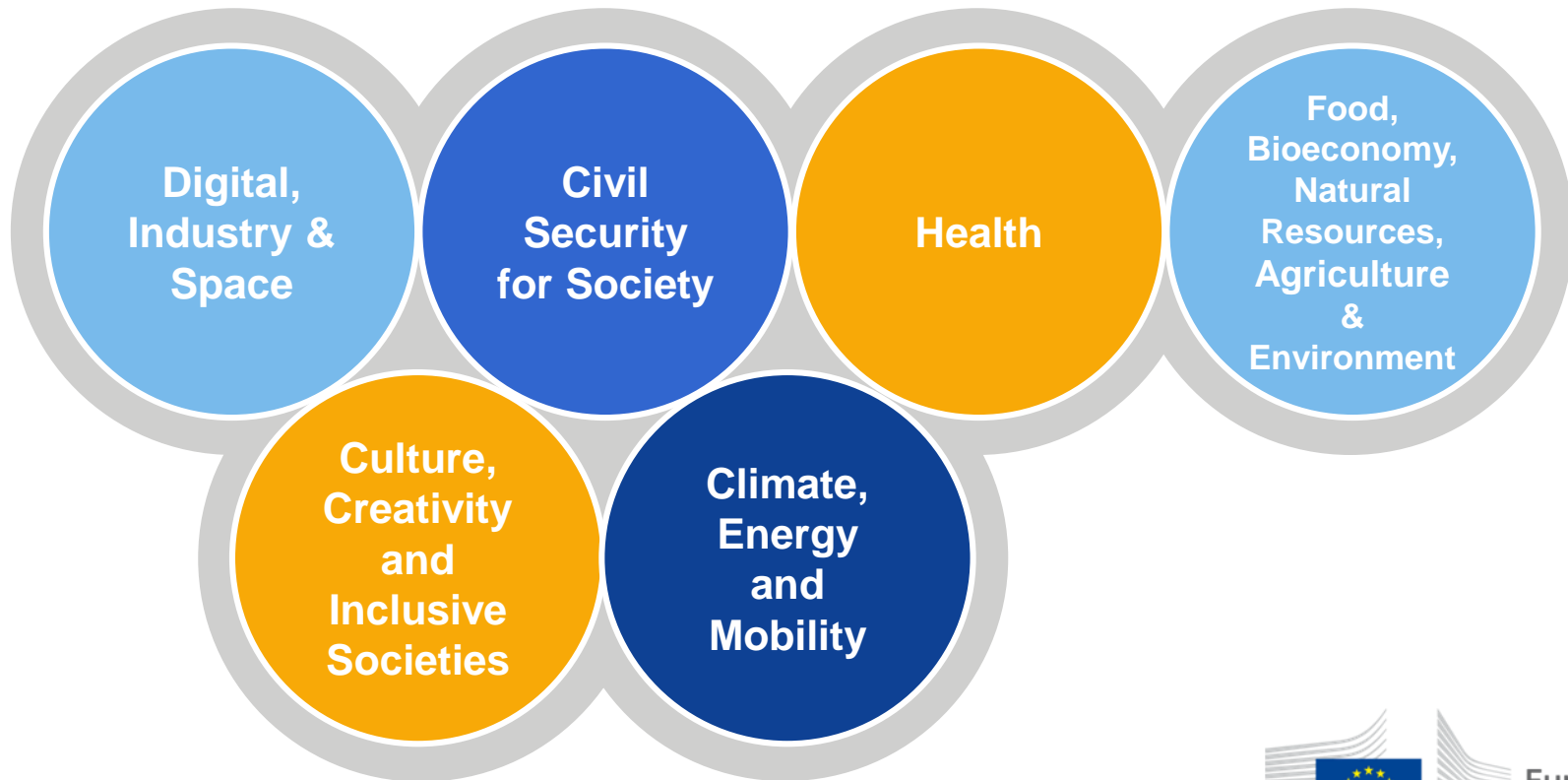
# Horizon Europe – Pillar 2

## Pillar 2 - Clusters

# Global Challenges & European Industrial Competitiveness:

boosting key technologies and solutions underpinning EU policies & Sustainable Development Goals

Commission proposal for budget: € 52.7 billion



# Clusters in 'Global Challenges and Industrial Competitiveness'

Clusters	Areas of intervention	
<b>Health</b>	<ul style="list-style-type: none"> <li>• Health throughout the life course</li> <li>• Non-communicable and rare diseases</li> <li>• Tools, technologies and digital solutions for health and care, including personalised medicine</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental and social health determinants</li> <li>• Infectious diseases, including poverty-related and neglected disease</li> <li>• Health care systems</li> </ul>
<b>Culture, creativity and inclusive society</b>	<ul style="list-style-type: none"> <li>• Democracy and Governance</li> <li>• Social and economic transformations</li> </ul>	<ul style="list-style-type: none"> <li>• Culture, cultural heritage and creativity</li> </ul>
<b>Civil security for society</b>	<ul style="list-style-type: none"> <li>• Disaster-resilient societies</li> <li>• Protection and Security</li> </ul>	<ul style="list-style-type: none"> <li>• Cybersecurity</li> </ul>
<b>Digital, Industry and space</b>	<ul style="list-style-type: none"> <li>• Manufacturing technologies</li> <li>• Advanced materials</li> <li>• Next generation internet</li> <li>• Circular industries</li> <li>• Space, including Earth Observation</li> <li>• Emerging enabling technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Key digital technologies, including quantum technologies</li> <li>• Artificial Intelligence and robotics</li> <li>• Advanced computing and Big Data</li> <li>• Low-carbon and clean industry</li> <li>• Emerging enabling technologies</li> </ul>
<b>Climate, Energy and Mobility</b>	<ul style="list-style-type: none"> <li>• Climate science and solutions</li> <li>• Energy systems and grids</li> <li>• Communities and cities</li> <li>• Industrial competitiveness in transport</li> <li>• Smart mobility</li> </ul>	<ul style="list-style-type: none"> <li>• Energy supply</li> <li>• Buildings and industrial facilities in energy transition</li> <li>• Clean, safe and accessible transport and mobility</li> <li>• Energy storage</li> </ul>
<b>Food, bioeconomy, natural resources, agriculture and environment</b>	<ul style="list-style-type: none"> <li>• Environmental observation</li> <li>• Agriculture, forestry and rural areas</li> <li>• Circular systems</li> <li>• Food systems</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity and natural resources</li> <li>• Seas, oceans and inland waters</li> <li>• Bio-based innovation systems in the EU Bioeconomy</li> </ul>

# Horizon Europe – Mission and Partnerships



# R&I Missions



## R&I Missions

Relating EU's research and innovation better to society and citizens' needs; with strong visibility and impact

A mission is a portfolio of actions across disciplines intended to achieve a **bold and inspirational and measurable goal** within a set timeframe, with **impact** for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

Horizon Europe defines mission characteristics and elements of governance, and 5 missions areas.

Specific missions will be programmed within the Global Challenges and European Industrial Competitiveness pillar (drawing on inputs from other pillars)

# Adaptation to climate change, including societal transformation



## Mission areas

Healthy oceans, seas, coastal and inland waters



Cancer

Climate-neutral and smart cities



Soil health and food





# New approach to European Partnerships

New generation of objective-driven and more ambitious partnerships in support of agreed EU policy objectives

## Key features

- **Simple architecture and toolbox**
- **Coherent life-cycle approach**
- **Strategic orientation**

### Co-programmed

Based on Memoranda of Understanding / contractual arrangements; implemented independently by the partners and by Horizon Europe

### Co-funded

Based on a joint programme agreed and implemented by partners; commitment of partners for financial and in-kind contributions

### Institutionalised

Based on long-term dimension and need for high integration; partnerships based on Articles 185 / 187 of TFEU and the EIT-Regulation supported by Horizon Europe

# Cluster 5

## Areas for future Partnerships

- Transforming Europe's rail system;
- Integrated Air Traffic Management;
- Clean Aviation;
- Clean Hydrogen;
- Built environment and construction;
- **Towards zero-emission road transport (2ZERO);**
- **Mobility and Safety for Automated Road Transport (MOSART);**
- Batteries: towards a competitive European industrial value chain;
- Clean Energy Transition.

# Horizon Europe – Impact, flexibility, co-design

# Strategic plan gives direction to the work programme



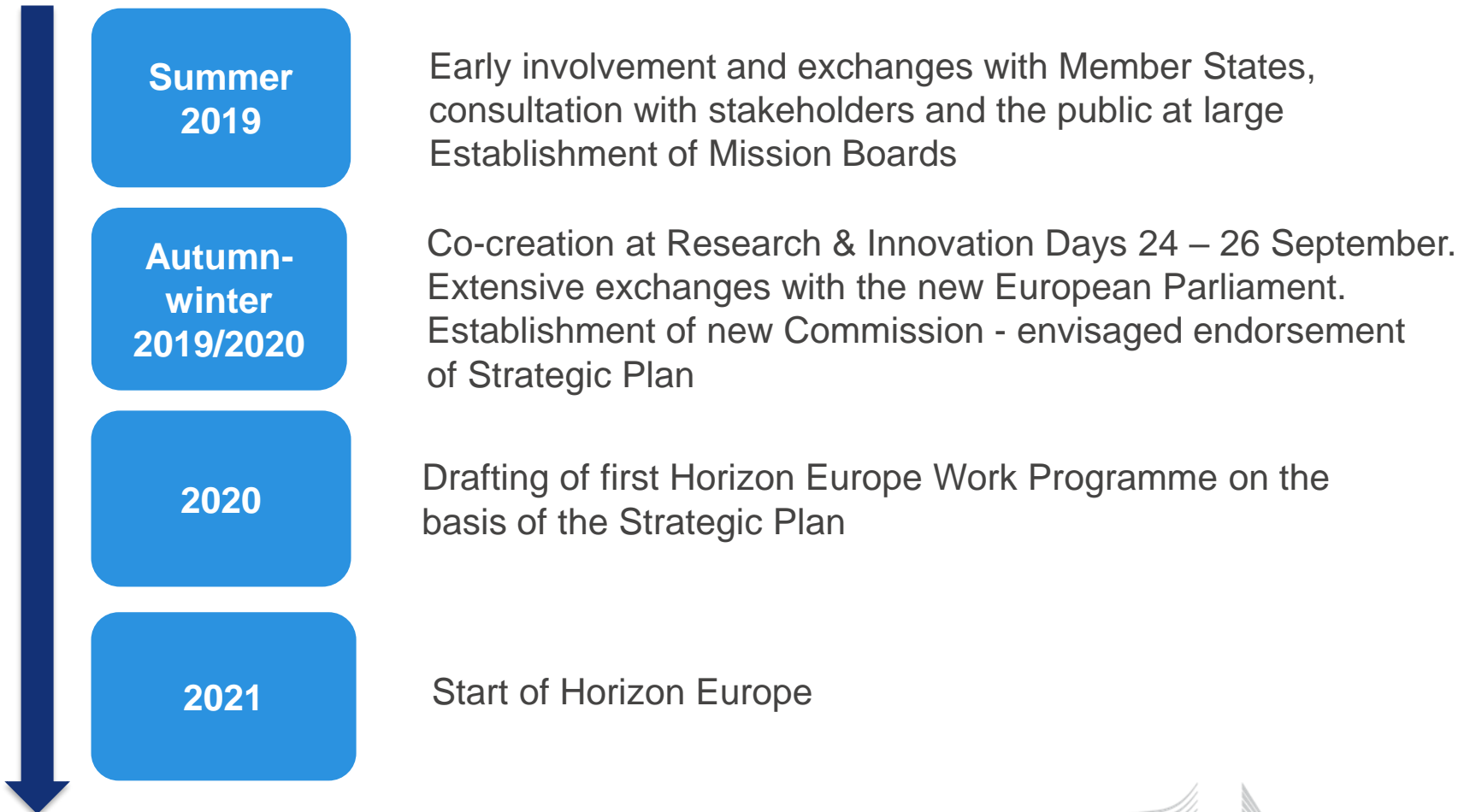
## Main Features

Early involvement and extensive exchanges with Member States

Extensive exchanges with the European Parliament

Consultations with stakeholders and public at large

# Steps towards the first Horizon Europe work programme



Home > News > Have your say on future objectives for EU-funded research and innovation

NEWS | 28 June 2019 | Brussels, Belgium | Research and Innovation

## Have your say on future objectives for EU-funded research and innovation

## ANNEX 5 - HORIZON EUROPE CLUSTER 5 CLIMATE, ENERGY AND MOBILITY

[https://ec.europa.eu/info/news/have-your-say-future-objectives-eu-funded-research-and-innovation-2019-jun-28\\_en](https://ec.europa.eu/info/news/have-your-say-future-objectives-eu-funded-research-and-innovation-2019-jun-28_en)

## Key R&I Orientations

- **Develop low-carbon and competitive transport solutions across all modes**
- **Develop seamless, smart, safe, accessible and inclusive mobility systems**
  - **Make automated and connected road transport safe and competitive**
  - **Develop efficient and innovative transport infrastructure**
  - **Develop the future transport network and integrated traffic management**
  - **Enable multimodal freight logistics and passenger mobility services**



# Research and innovation days, 24 – 26 September 2019

- Bringing together policy-makers, researchers, innovators, civil society representatives and other interested stakeholders
- Three days to debate, solve and innovate – to help shape the future of research and innovation policy

Key elements of Horizon Europe to be discussed :

- The Strategic Plan
- Missions
- Partnerships



- **Policy Conference**  
24 → 26 September
- **Innovative Europe Hub**  
24 → 26 September
- **Science is Wonderful! Exhibition**  
25 → 26 September

Sessions related to Cluster 5 “Climate, Energy and Mobility”, including:

- Session on “**Connected Automated Mobility**” (24 September)
- Session on “**Smart Electric Mobility**” (24 September)
- A Plenary Session on “**Clean Europe – Making carbon-neutrality a reality**” (25 September)
- Session on “**Horizon Europe Mission on Cities**” (25 September)
- Session on “**Future Generations of Batteries**” (25 September)



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**Horizon Europe dedicated website**

<http://ec.europa.eu/horizon-europe>

**European Innovation Council**

<http://ec.europa.eu/research/eic>

**EU budget for the future**

[http://ec.europa.eu/budget/mff/index\\_en.cfm](http://ec.europa.eu/budget/mff/index_en.cfm)